



ANNUAL REPORT 2025

MOTOL UNIVERSITY HOSPITAL

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Dear Readers,

On 1 April 2025, I was appointed Director of Motol University Hospital by the Minister of Health. Together with the new management team, we assumed responsibility for the hospital during an exceptionally challenging period, immediately following a corruption scandal that had affected not only its previous leadership but also the trust of the public, business partners, and employees.

Our first priority was to ensure the hospital's stable operation, restore standard management processes, and create conditions for transparent and accountable governance. At the same time, we had to take responsibility for a number of major investment projects that were significantly behind schedule and faced the risk of reductions in, or even the loss of, grant funding amounting to billions of Czech crowns. During the second half of the year, these responsibilities were further expanded

by preparations for the integration of Na Homolce Hospital with Motol University Hospital.

One of our key priorities was strengthening the system of management and internal control. During the year, we introduced a new internal control framework, electronic approval processes, clearly defined responsibilities within decision-making procedures, and reinforced the role of internal audit. We also established an approval matrix for procurement activities, clarified responsibilities within management processes, and centralized contract documentation. The objective of these measures is to create an environment built on transparency, accountability, and the efficient use of public resources over the long term.

At the same time, we focused on digitalization and information technologies. For many years, Motol University Hospital has faced underinvestment and technological obsolescence in its ICT infrastructure, limiting both the further development of healthcare services and modern hospital management. We therefore launched a gradual modernization of key systems, including electronic document management, a management information system, and preparations for the replacement of economic and human resources systems.

A significant portion of the year was also devoted to the implementation of strategic investment projects. At the time of the management transition, several construction projects with a total value of approximately CZK 7 billion were underway, some of which were delayed by months or even years. In addition to the construction works themselves, it was necessary to accelerate the preparation of dozens of related public procurement procedures

for medical technologies, equipment, and the future operation of newly established facilities. Thanks to the extraordinary commitment of employees across the hospital, most of these projects were successfully stabilized, creating the conditions necessary for their completion.

An equally important area was, and continues to be, the hospital's financial management.

From an external perspective, it may appear that the hospital's financial position should be stable due to historically high reimbursements from health insurance funds and public subsidies. In reality, however, the hospital had long faced high operating costs, inefficiently structured processes, and insufficient digitalization, while at the same time failing to build the financial reserves required for sustainable development.

In addition to the need for substantial investments in the renewal of assets and technologies, the hospital must also address unfavorable changes in the healthcare reimbursement system and increasing personnel costs resulting from legislative changes.

Despite all the extraordinary circumstances of 2025, Motol University Hospital concluded the year with a positive financial result. The accounting period closed with a profit of CZK 197.98 million, of which the hospital's core activities generated a profit of CZK 132.61 million and ancillary economic activities generated a profit of CZK 65.36 million.

The year 2025 was a year of extraordinary challenges for Motol University Hospital, but also a year of intensive work, transformation, and new beginnings. Above all, it reaffirmed that the hospital's greatest asset is its employees. Physicians, nurses, healthcare professionals, and non-medical staff alike continued to provide patients with outstanding care despite a period of uncertainty and increased workload, while actively contributing to the successful implementation of the many changes the hospital underwent.

I would like to express my sincere gratitude for their professionalism, dedication, and responsible approach.

I am convinced that, thanks to our collective efforts, Motol University Hospital is entering a new chapter as a strong and stable institution with a clear vision for future development, and one that will continue to provide healthcare services at the highest possible standard.

*MUDr. Petr Polouček, MBA
Director of Motol University Hospital*

MANAGEMENT OF MOTOL UNIVERSITY HOSPITAL

Hospital Director

JUDr. Ing. Miloslav Ludvík, MBA

(until 24 February 2025)

MUDr. Lucie Valentová Bartáková, MHA

(from 26 February 2025 to 31 March 2025)

MUDr. Petr Polouček, MBA

(from 1 April 2025)

Deputy Director for Operations and Technical Matters

MUDr. Pavel Budinský, Ph.D., MBA

(until 25 February 2025)

Ing. DiS. Petr Šanda

(from 1 April 2025)

Deputy Director for Medical Preventive Care

MUDr. Lucie Valentová Bartáková, MHA

(until 30 September 2025)

MUDr. Vladimír Mikulénka, MBA

(from 1 October 2025)

Deputy Director for Nursing Care

Mgr. Jana Nováková, MBA

Deputy Director for Economics

Ing. Jiří Čihař

Deputy Director for Human Resources

Ing. Marie Románková

(until 8 April 2025)

Ing. Hana Hasalová

(from 9 April 2025)

Deputy Director for Science and Research

prof. MUDr. Anna Šedivá, DSc.

Deputy Business Director

Ing. Jana Baševá

(until 17 April 2025)

Pavel Bašta

(from 22 April 2025)

Deputy Director for Legal Affairs

Mgr. Martin Galáž, LL.M.

(from 1 April 2025)

Deputy Director for Information Technology

Bc. Miroslav Pavlíček, MBA

(from 1 June 2025)

HOSPITAL'S SCIENTIFIC BOARD

Prof. MUDr. Anna Šedivá, DSc.

Chair of the Scientific Board of Motol University Hospital
Department of Immunology, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Doc. MUDr. Vladimír Beneš, Ph.D.

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

Prof. MUDr. Ondřej Cinek, Ph.D.

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

Prof. MUDr. Jan Bouček, Ph.D.

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

Prof. MUDr. Pavel Dřevínek, Ph.D.

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

Doc. MUDr. Lucie Šrámková, Ph.D.

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

Prim. MUDr. Markéta Havlovicová

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

MUDr. Lucie Valentová-Bartáková

Deputy Director for Medical and Preventive Care at Motol University Hospital

Prof. MUDr. Jakub Hort, Ph.D.

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

Prof. MUDr. Alan Stolz, Ph.D., MBA

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

Prof. MUDr. Tomáš Kalina, Ph.D.

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

Prof. MUDr. Radan Keil, Ph.D.

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

Doc. MUDr. Adam Klocperk, Ph.D.

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

Prof. MUDr. Pavel Kršek, Ph.D.

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

Prof. MUDr. Zdeněk Šumník, Ph.D.

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

Prof. MUDr. Robert Lischke, Ph.D.

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

Prof. MUDr. Štěpánka Průhová, Ph.D.

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

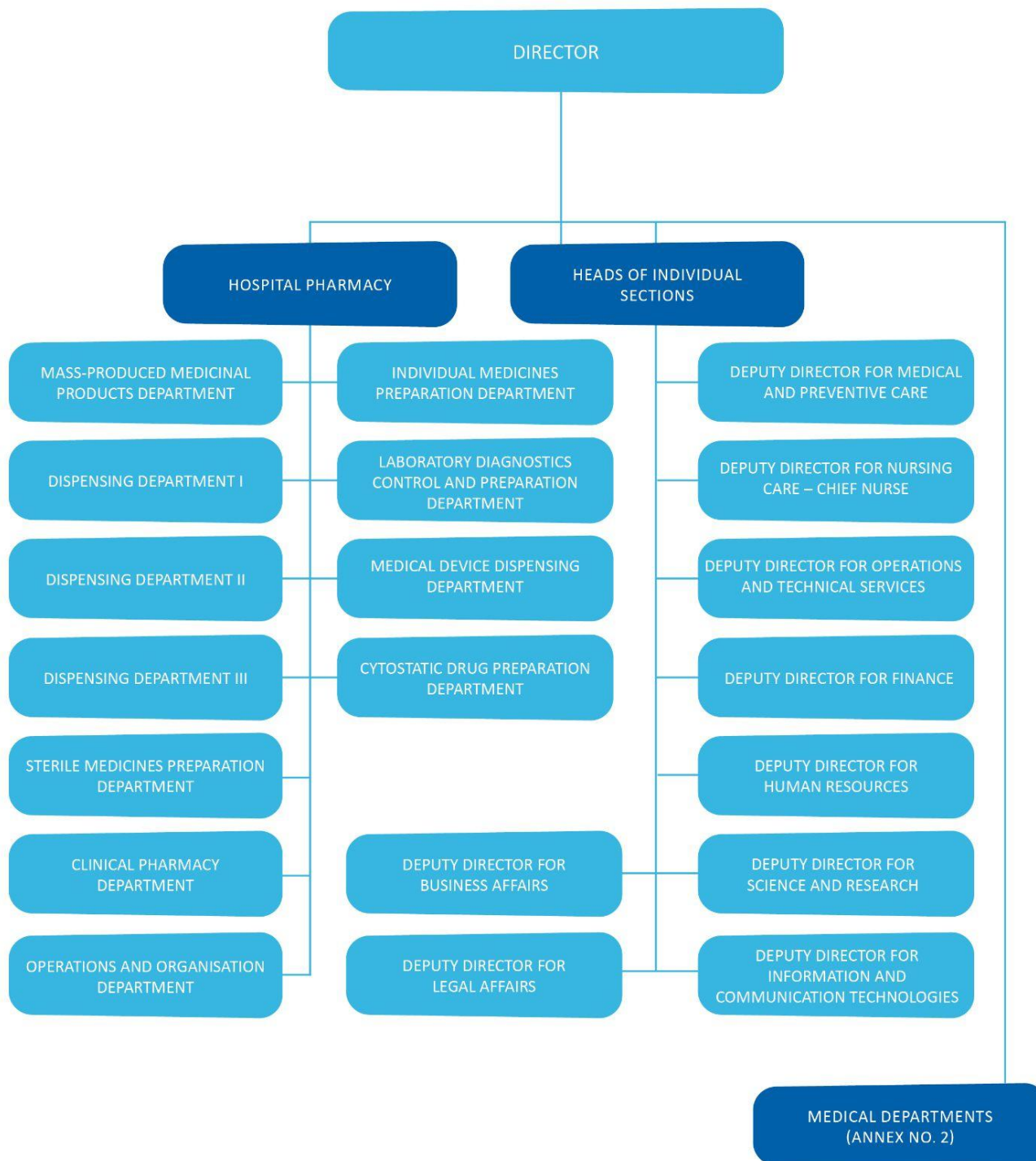
Prof. MUDr. Josef Zámečník, Ph.D.

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

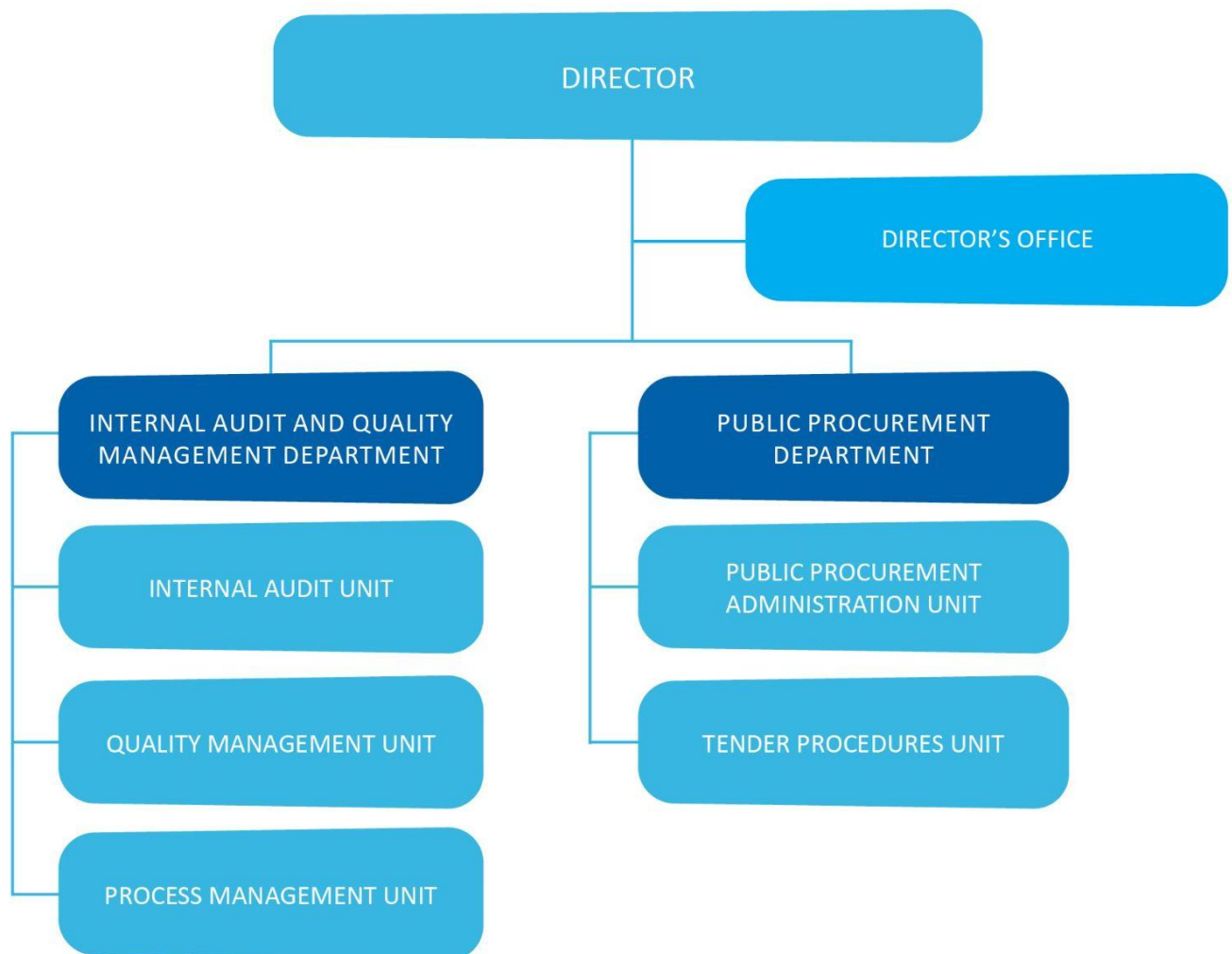
Doc. MUDr. Michal Zápotocký, Ph.D.

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

BASIC ORGANIZATIONAL STRUCTURE AS OF 31. 12. 2025



BASIC ORGANIZATIONAL STRUCTURE AS OF 31. 12. 2025



BASIC DETAILS AS AT 31. 12. 2025

Area of premises /m2/	348 000
Assets /in thous. CZK/	21 521 934
Total turnover /in thous. CZK/	18 020 234
Employees /natural persons/	6 974
Employees /converted numbers/	6 111
Beds	2 135

	Children	Adults	Total
Acute standard	479	1076	1555
Acute intensive	151	238	389
Acute total	630	1314	1944
Aftercare intensive	4	10	14
Long-term	-	157	157
Long-term intensive	-	20	20
Beds total	634	1501	2135

Number of hospitalizations	80 254
Number of outpatient treatments	957 358 ¹
Number of treatment days /+ Department of Long-term Treatment – Aftercare Centre/	520 891
Number of anaesthesiology procedures	37 617
Number of births	1 468
Death rate /+ Department of Long-term Treatment – Aftercare Centre/	1,36

¹ Since 2022 outpatient care has been recorded without complements

LIST OF DEPARTMENTS

Paediatric Inpatient Section

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

Head of Department: doc. MUDr. Ondřej Materna, Ph.D.

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

Head of Department: prof. MUDr. Michal Hrdlička, CSc. (until 30 September 2025)

Head of Department: doc. MUDr. Iva Dudová, Ph.D. (from 1 October 2025)

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

Head of Department: prof. MUDr. Michal Rygl, Ph.D.

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

Head of Department: doc. MUDr. Lucie Šrámková, Ph.D.

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

Head of Department: prof. MUDr. Pavel Kršek, Ph.D.

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

Head of Department: prof. MUDr. Zdeněk Čada, Ph.D.

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

Head of Department: prof. MUDr. Zdeněk Šumník, Ph.D.

Adult Inpatient Section

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

Head of Department: prof. MUDr. Alan Stolz, Ph.D. MBA

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

Head of Department: prof. MUDr. Robert Lischke, Ph.D.

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

Head of Department: prof. MUDr. Radan Keil, Ph.D.

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

Head of Department: prof. MUDr. Petr Ošťádal, Ph.D.

Department of Infectious Diseases and Travel Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head of Department: MUDr. Milan Trojáněk, Ph.D.

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

Head of Department: MUDr. Štěpán Černý, CSc, MBA

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

Head of Department: prof. MUDr. Jan Plzák, Ph.D.

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

Head of Department: prof. MUDr. Petr Viček, CSc.

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

Head of Department: prof. MUDr. Jan Štulík, CSc.

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

Head of Department: prof. MUDr. Milan Kvapil, CSc., MBA (until 31 August 2025)

Head of Department: MUDr. Martina Nováková, Ph.D. (from 1 September 2025)

Deputy Head of Department: prof. MUDr. Milan Kvapil, CSc., MBA (from 1 September 2025)

Department of Long-term Treatment – Aftercare Centre

Head Physician: MUDr. Martina Nováková, Ph.D. (until 31 August 2025)

Head of Department: MUDr. Martina Nováková, Ph.D. (from 1 September 2025)

Head Physician: MUDr. Monika Pražmová (from 1 September 2025)

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

Head of Department: prof. MUDr. Petr Marušič, Ph.D.

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

Head of Department: prof. MUDr. Tomáš Büchler, Ph.D.

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

Head of Department: prof. MUDr. Ivan Landor, CSc.

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

Head of Department: doc. MUDr. Libor Fila, Ph.D.

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

Head of Department: prof. MUDr. Marek Babjuk, CSc.

Common Inpatient Sites of Paediatric and Adult Sections

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

Head of Department: prof. MUDr. Roman Chmel, Ph.D.

- Department of Neonatology

Deputy Head of Department: prof. MUDr. Jan Janota, Ph.D.

Department of Anaesthesiology, Resuscitation and Intensive Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head of Department: prof. MUDr. Tomáš Vymazal, Ph.D., MHA

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

Deputy Head of Department: MUDr. Kateřina Čadová

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

Head of Department: prof. MUDr. Vojtěch Havlas, Ph.D.

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

Head of Department: prof. PaedDr. Pavel Kolář, Ph.D.

- Department of Rehabilitation

Deputy Head of Department: MUDr. Martina Kövári, Ph.D., MHA (Adult Section)

Deputy Head of Department: MUDr. Olga Dyrhonová (Paediatric Section)

- Department of Pain Research and Treatment

Deputy Head of Department: MUDr. Jiří Kozák, Ph.D.

- Spinal Unit

Deputy Head of Department: doc. MUDr. Jiří Kříž, Ph.D.

- Department of Sports Medicine

Deputy Head of Department: doc. MUDr. Jiří Radvanský, CSc.

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

Head of Department: MUDr. Martin Hložánek, Ph.D.

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

Head of Department: doc. MUDr. Vladimír Beneš, Ph.D.

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

Head of Department: MUDr. Petra Hlíňáková, Ph.D., MBA

Common Examination and Therapeutic Units

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

Head of Department: prof. MUDr. Ing. Lukáš Lambert, Ph.D., MBA

Department of Clinical Haematology

Deputy Head of Department: MUDr. Jitka Segethová

Blood Bank Department

Deputy Head of Department: MUDr. Eva Linhartová

Department of Clinical Psychology

Deputy Head of Department: Mgr. Markéta Mohaplová

Department of Rheumatology for Children and Adults

Deputy Head of Department: doc. MUDr. Rudolf Horváth, Ph.D.

Department of Transplantations and Tissue Bank

Deputy Head of Department: MUDr. Jan Burkert, Ph.D.

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

Head of Department: prof. MUDr. Milan Macek, DrSc., MHA

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

Head of Department: prof. MUDr. Jiřina Bartůňková, DrSc., MBA (until 31 August 2025)

Head of Department: doc. MUDr. Tomáš Milota, Ph.D. (from 1 September 2025)

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

Head of Department: prof. MUDr. Richard Průša, CSc.

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

Head of Department: prof. MUDr. Pavel Dřevínek, Ph.D.

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

Head of Department: prof. MUDr. Josef Zámečník, Ph.D.

Outpatient Sector

Department of Paediatric Dermatology

Deputy Head of Department: MUDr. Jana Čadová

Department of Dermatovenereology for Adults

Deputy Head of Department: MUDr. Alena Machovcová, Ph.D., MBA

Department of Central Operating Theatres for Children

Deputy Head of Department: MUDr. Luboš Zeman

Department of Central Operating Theatres for Adults

Deputy Head of Department: MUDr. Martin Hanus, Ph.D., MBA

Primary Care Department

Deputy Head of Department: MUDr. Jaroslava Kulhánková

Emergency Department and Medical First Aid Service for Children

Deputy Head of Department: MUDr. Jitka Müllerová Dissou, MBA

Emergency Department and Medical First Aid Service for Adults

Deputy Head of Department: MUDr. Jiří Karásek, Ph.D.

Department of Hospital Hygiene and Epidemiology

Deputy Head of Department: MUDr. Jarmila Rážová, Ph.D.

Hospital Pharmacy

Deputy Head of Department: PharmDr. Petr Horák

MEDICAL PREVENTIVE CARE

Paediatric Inpatient Section

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

Head of Department: *doc. MUDr. Ondřej Materna, Ph.D.*

Deputy Head of the Cardiology Department: *doc. MUDr. Peter Kubuš, Ph.D.*

Deputy Head of the Cardiac Surgery Department: *MUDr. Roman Gebauer*

Head Nurse: *Mgr. Jana Matušiková*

Basic description:

The Children's Heart Centre ("CHC") is the only comprehensive cardiovascular centre for children in the Czech Republic with nationwide coverage. It focuses primarily on the diagnosis and treatment of congenital heart defects in children and cooperates with other departments in the treatment of adult patients with congenital heart defects. The department is characterised by its preference for non-invasive diagnostic methods (ECHO, MRI, CT) and the primary correction of defects at an early age. **In 2025, 489 operations were performed at the CHC, including 5 heart transplants; a further 30 operations were carried out outside the CHC; 416 catheterisations were performed, including 300 interventional procedures; 843 patients were hospitalised, together with 684 accompanying persons, and 3,959 patients were treated on an outpatient basis.**

The department takes part in a unique international quality control system for paediatric cardiac surgery within the European Congenital Heart Surgeons Association (ECHSA) database, which collects data on hundreds of thousands of operations from around the world and monitors early mortality as related to the complexity of the surgery. **In this comparison, the Children's Heart Centre achieved an excellent early mortality rate of only 0.62% for the period 2020–2023.** The department is also a member of the **ERN GuardHeart** for rare cardiovascular diseases in childhood.

In May and October 2025, we participated in international humanitarian and development missions in Zambia (Lusaka), organised by the **MEDEVAC programme of the Ministry of the Interior of the Czech Republic** in cooperation with Motol University Hospital. As part of long-term cooperation, we were also involved in the treatment of patients in Kenya (Nairobi, Mater Hospital), in missions organised in cooperation with Mater Hospital, Nairobi, Kenya, and the Children's Heart Centres in Motol and Bratislava. These missions took place in July and November. A total of 40 paediatric patients underwent surgery during these missions. The surgical team also took part in a charitable mission in Nicaragua (Managua, La Mascota Hospital) sponsored by the **Healing Little Hearts** organisation.

Specialised outpatient units:

- Clinical Cardiology
- Electrophysiology and Cardiac Pacing

- Heart Failure and Transplantation
- Prenatal Cardiology
- Connective Tissue Disorders

New methods and procedures:

- Continuation of the heart transplantation programme (Paragonix SherpaPak and TransMedics transport systems in cooperation with IKEM) and the heart-lung transplantation programme, including long-term implantable mechanical circulatory support (HeartMate 3, Berlin Heart EXCOR – in 2025, three young children supported by Berlin Heart EXCOR were hospitalised simultaneously)
- Mechanical circulatory support and ECMO programme in cooperation with KARIM, 2nd Faculty of Medicine, Charles University and Motol University Hospital
- Tracheoplasty programme for congenital tracheal malformations in cooperation with the tracheal team of Motol University Hospital
- Programme of molecular genetic testing of families with hereditary arrhythmia syndromes and cardiomyopathies using next-generation sequencing (NGS), in cooperation with ÚBLG, 2nd Faculty of Medicine, Charles University and Motol University Hospital
- programme of minimally invasive cardiac surgery including vascular ring surgery using the thoracoscopic technique
- Foetal intervention programme for congenital heart defects in cooperation with the Department of Paediatric Cardiology of Kepler University Hospital in Linz

Unique equipment:

- Thoratec CentriMag/PediVas centrifugal pump for short- and medium-term mechanical circulatory support
- Ensite Precision 3D electrophysiology navigation and mapping system
- Biplane angiography system enabling complex catheter-based interventions in patients with congenital heart defects
- GE Voluson ultrasound system for foetal echocardiography
- KIPS clinical information and planning system with linked modules for catheterisation (KatAp) and echocardiography (Echolog), connected to the CHC hospital information system

Significant events in 2025:

- In 2025, the smallest patient in the history of our programme was connected to extracorporeal mechanical circulatory support, on which the patient survived for 315 days. Following 359 days of hospitalisation, the patient was discharged after a successful heart transplant
- For the first time, we used the new Gore Cardioform device in three paediatric patients undergoing the catheter-based closure of atrial septal defects, making it possible to expand the range of defects treatable by catheterisation
- Cooperation is continuing within the Motol University Hospital Centre for Adult Congenital Heart Defects

Publications:

17 articles with an IF:

- Barrale P, Sigman AR, Pajazetovic E, Riley E, Wendt LH, Salameh A, **Janoušek J**, Hale BW, Law IH. Minimum and Average Heart Rates in Pediatric Fontan Patients with Favorable 8 Monitors. Res Sq [Preprint]. 2025 Jun 3;rs.3.rs-6761671. doi: 10.21203/rs.3.rs-6761671/v1. Update in: Pediatr Cardiol. 2025 Dec 6. doi: 10.1007/s00246-025-04106-x. PMID: 40502792; PMCID: PMC12155219. **IF 1,4**
- Cantinotti M, Voges I, di Salvo G, Ortiz-Garrido A, Bharucha T, Grotenhuis H, Sabate-Rotes A, Cavigelli A, Roest A, Sendzikaite S, Nolan O, Ramcharan T, **Koubisky K**, Brun H, Petropoulos AC, Bellsham-Revell H, Kaneva-Nencheva A, Dinarevic SM, Abumehdi MR, Óskarsson G, Olejnik P, Doros G, Ojala T, Salaets T, Sunnegård J, Bhat M, Wacker J, Wählander H, Lubaua I, Herberg U, Miller O, McMahon CJ. Hypoplastic Left Heart Syndrome Practice Variation Across 31 Centres From 20 European Countries. An AEPC Imaging Working Group Study. Eur J Pediatr. 2025 May 31;184(6):379. doi: 10.1007/s00431-025-06175-9. PMID: 40448872; PMCID: PMC12126313. **IF 2,6**
- Huis In 't Veld EA, Van Assche IA, Van Calsteren K, Salaets T, Sliker MG, Cardonick E, van Grotel M, Halaska MJ, Fontana C, Fruscio R, Lemiere J, van Gerwen M, van Dijk-Lokkart EM, Lejeune CL, van Tinteren H, Mertens L, **Tomek V**, Posthouwer S, Voigt J, van den Heuvel-Eibrink MM, Lagae L, Amant F. LONG-TERM DEVELOPMENT OF 12- AND 15-YEAR-OLD OFFSPRING AFTER MATERNAL CANCER DIAGNOSIS DURING PREGNANCY: A PROSPECTIVE MULTICENTRE COHORT STUDY. Ann Oncol. 2025 May 6:S0923-7534(25)00171-1. doi: 10.1016/j.annonc.2025.04.011. Epub ahead of print. PMID: 40339648. **IF 65,4**
- Illinger V, Slabý K, Radvanský J, **Jičínská D**, **Materna O**. Prevalence, predictors, and mortality of Super-Fontan patients in a single-centre nationwide cohort. Cardiol Young. 2025 Feb;35(2):413-417. doi: 10.1017/S1047951125000228. Epub 2025 Jan 28. PMID: 39871467. **IF 0,7**
- Irving C, Azeka E, Adorisio R, Blume ED, Bogle C, Chubb H, Conway J, Cousino MK, Edelson J, Ford K, Holinski P, **Janousek J**, Lal A, Lee T, Lorts A, Nakano S, Rosenthal DN, Rossano J, Miyamoto SD. The International Society for Heart and Lung Transplantation Guidelines for the Management of Pediatric Heart Failure (Update From 2014). J Heart Lung Transplant. 2025 Oct;44(10):e21-e71. doi: 10.1016/j.healun.2025.06.003. Epub 2025 Aug 21. PMID: 40838915. **IF 10,5**
- **Jičínský M**, Adla T, **Materna O**. Transparavertebral Occlusion of a Large Venovenous Collateral in a Fontan Patient. Catheter Cardiovasc Interv. 2025 Dec 21. doi: 10.1002/ccd.70436. Epub ahead of print. PMID: 41423810. **IF 1,90**
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Department of Paediatric Psychiatry, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head of Department: **prof. MUDr. Michal Hrdlička, CSc.** (until 30 September 2025)

Head of Department: **doc. MUDr. Iva Dudová, Ph.D.** (from 1 October 2025)

Deputy Head of Department: **doc. MUDr. Iva Dudová, Ph.D.** (until 30 September 2025)

Deputy Head of Department: **MUDr. Jana Šolcová** (from 1 October 2025)

Head Nurse: **Mgr. Mária Kurucová**

Basic description:

The Department of Paediatric Psychiatry (DPP) is the only independent clinical department specialising in child and adolescent psychiatry in the Czech Republic. It is engaged in the diagnosis, treatment and prevention of mental health disorders in childhood and adolescence. The department specialises in autism spectrum disorders, eating disorders, psychotic disorders and suicidal behaviour in children and adolescents. The department also operates as an undergraduate and postgraduate teaching department. In 2024, all wards of the DPP were partially refurbished. **In 2025, the total number of hospitalisations was 649, with approximately half of the children admitted acutely via the Emergency Department and Medical First Aid Service for Children or the paediatric emergency outpatient service of Motol University Hospital, and approximately one quarter transferred from paediatric departments, most commonly from the Department of Paediatrics, 2nd Faculty of Medicine, Charles University and Motol University Hospital. A total of 1,240 psychiatric consultations for adults and 1,110 psychiatric consultations for children and adolescents were carried out, most frequently requested by the Department of Paediatrics, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and the Department of Paediatric Haematology and Oncology, 2nd Faculty of Medicine, Charles University and Motol University Hospital. The DPP outpatient clinic treated approximately 3,000 patients. The trend of an increased number of psychiatric examinations of children and adolescents within the emergency service continued, often compensating for outpatient services that have long lacked sufficient capacity to manage the growing number of patients. Approximately 1,000 children and adolescents underwent acute psychiatric assessment by the physician on duty at the Emergency Department and Medical First Aid Service for Children.**

The number of hospital admissions continues to show an upward trend. This demonstrates that the pressure on acute inpatient paediatric psychiatric care remains extremely high, with the most common admissions being via the paediatric emergency department/emergency outpatient service and transfers from paediatric wards following suicide attempts. Compared with 2024, the number of hospitalised patients following suicide attempts (2024: 136, 2025: 147) and patients with self-harming behaviour (2024: 407, 2025: 408) remained approximately the same.

Specialised outpatient units and centres:

- Paediatric Psychiatry Outpatient Unit
- Eating Disorders Outpatient Unit
- Family Centre – Family Therapy Centre

New methods and procedures:

- Use of the Autism Diagnostic Observation Schedule (ADOS) as the gold standard method for diagnosing autism spectrum disorders
- Comprehensive treatment of eating disorders
- Preparation of a psychotherapeutic group programme incorporating elements of dialectical behavioural therapy focused on self-harm, impulsivity and work with suicidality in hospitalised adolescent patients
- The diagnosis and comprehensive treatment of psychotic disorders are of supraregional importance

Unique equipment:

- Thymatron DG electroconvulsive therapy device

Significant events in 2025:

- Completion of Ph.D. studies by senior physician MUDr. Kryštof Kantor
- Cooperation on a project with Hogrefe publishing house involving the translation and validation of the ADI-R (Autism Diagnostic Interview – Revised) diagnostic instrument

Publications:

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

Head of Department: **doc. MUDr. Lucie Šrámková, Ph.D.**

Deputy Head of Department: **MUDr. Petra Keslová, Ph.D.**

Head Nurse: **Bc. Jitka Wintnerová**

Basic description:

The Department of Paediatric Haematology and Oncology (DPHO) focuses on the diagnosis, treatment and research of childhood cancers. Its work also includes care for patients with benign blood disorders, such as anaemia, bleeding disorders and

congenital blood clotting disorders (haemophilia). The transplant unit performs allogeneic and autologous haematopoietic stem cell transplants in the treatment of high-risk leukaemia, selected solid tumours, congenital immune disorders and metabolic defects.

The DPHO is the largest department of its kind in the Czech Republic. It provides complete care, or shared care in cooperation with other centres, for approximately two thirds of the paediatric haematology and oncology patients in the Czech Republic. It provides consultation examinations for patients from Bohemia and, for certain specific diagnoses and treatment procedures, for patients from across the Czech Republic and other countries, including Slovakia, Croatia and Poland.

In 2025, almost 25,000 examinations and treatments were carried out in the department's specialised outpatient units. A total of 4,826 patients were hospitalised. A total of 163 children with malignant solid tumours and tumours of uncertain behaviour and 48 children with leukaemia and myelodysplastic syndrome were newly diagnosed and comprehensively treated. Four patients received innovative CAR T-cell therapy. A total of 28 allogeneic haematopoietic cell transplants were performed, including 27 from unrelated registry donors and one from a sibling donor. Sixteen patients at the department received autologous haematopoietic cell grafts a total of 25 times.

Laboratory centre of the department:

- A total of **1,500 genomic and cytometric examinations** were performed as part of highly specialised consultation diagnostics of paediatric malignancies for paediatric patients from across the Czech Republic.
- A total of **500 genetic and genomic examinations** were performed for paediatric patients from Slovakia under an interstate agreement.
- We modified and refined the **algorithm for testing measurable residual disease (MRD) in paediatric patients with acute lymphoblastic leukaemia (ALL)**, which has an impact in both the Czech Republic and Slovakia and will influence the approach to MRD monitoring at the international level. The results and guidelines were published in HemaSphere, the official journal of the European Hematology Association (EHA), IF = 14.6.

Specialised outpatient units:

- Oncology Outpatient Unit and Day Care Unit
- Late Effects of Cancer Treatment Outpatient Unit
- Haemangioma and Lymphangioma Outpatient Unit
- Neuro-Oncology Outpatient Unit
- Langerhans Cell Histiocytosis Outpatient Unit
- Haematology Outpatient Unit
- Haematology Day Care Unit
- Congenital Blood Clotting Disorders and Bleeding Disorders Outpatient Unit
- Bone Marrow Transplant Follow-up Outpatient Unit

New methods and procedures:

- Within the Centre for Paediatric Neuro-Oncology, in cooperation with the Department of Neurosurgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and other departments of Motol University Hospital,

state-of-the-art comprehensive diagnosis and treatment of children with CNS tumours was provided in full. In 2025, a total of 54 children with CNS tumours from across the Czech Republic, along with a further 13 patients from abroad, underwent diagnosis and/or treatment

- In 2025, we assumed the care of a further four Ukrainian paediatric oncology patients with refugee status
- We introduced screening for genetic aberrations in selected patients with ALL and AML at the RNA level using next-generation sequencing (NGS) – whole transcriptome sequencing (WTS) – into diagnostics and accredited operation
- We introduced standardised MRD measurement in paediatric patients with acute myeloid leukaemia (AML) for the diagnostic protocol, in accordance with the recommendations of the international group. This will enable comparable results to be obtained and thus support standardisation of diagnostics
- We introduced standardised MRD measurement in paediatric patients with T-cell acute lymphoblastic leukaemia (T-ALL) within the international group

Unique equipment:

- We supplemented or renewed the equipment of the CLIP laboratories with an Illumina MiSeq i100 sequencer, two new SimplyAmp cyclers and a BD FACSymphony S6 sorter for the separation of cell populations

Significant events in 2025:

- We published 78 articles in journals with an IF, including 15 with the first or last author from our department, with a total IF of 636
- Prof. MUDr. Jan Trka, Ph.D., was elected to the board of the European Hematology Association (EHA), one of the two most important professional societies in the field, with 11,000 members
- Staff from the CLIP laboratories hold important positions in the bodies of the Czech Health Research Council (AZV): prof. MUDr. Eva Froňková, Ph.D. – chair; prof. MUDr. Jan Zuna, Ph.D. – vice-chair; and prof. MUDr. Jan Trka, Ph.D. – panel member
- Two members of the department successfully completed their Ph.D. studies

Awards:

- The President of the Czech Republic, Petr Pavel, awarded prof. MUDr. Jan Starý, DrSc., the Medal of Merit for his significant contributions to paediatric haematology and oncology
- Two of our staff members received the Minister of Health Award for the successful completion of grants conducted under Motol University Hospital: prof. MUDr. Jan Zuna, Ph.D., and doc. MUDr. Michal Zápotocký, Ph.D.
- MUDr. Kryštof Šeferna received the Motol University Hospital Junior Creative Achievement Award for his work entitled: More Reliable Identification of Impending Relapse of Acute Lymphoblastic Leukaemia in Children after Bone Marrow Transplantation by Verifying Low-Level Minimal Residual Disease Positivity Using Next-Generation Sequencing
- Doc. MUDr. Lucie Šrámková, Ph.D., was ranked among the 50 best doctors in the Czech Republic in 2025 by Forbes magazine
- MUDr. Kryštof Šeferna was ranked by Forbes magazine as one of the twelve best young doctors in the Czech Republic in 2025

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

Head of Department: **Prof. MUDr. Michal Rygl, Ph.D.**

Deputy Head of Department: **MUDr. Martin Vyhnánek**

Head Nurse: **Mgr. Zuzana Kratinová**

Basic description:

The Department of Paediatric Surgery (DPS) is a leading European department in paediatric surgery, providing comprehensive diagnostic and therapeutic care for children ranging from premature newborns to adolescents. Within specialised fields including neonatal surgery, thoracic surgery, oncological surgery, proctology, urology, liver and biliary surgery, congenital malformations and paediatric polytrauma, the department provides care for paediatric patients from across the Czech Republic and, on a consultation basis, also for international patients. Selected conditions are operated on as part of a day surgery programme. The Department of Paediatric Surgery holds the highest accreditation for specialist training in paediatric surgery in the Czech Republic and is also the only department in the Czech Republic to hold European UEMS accreditation for specialist training in paediatric surgery. The Department of Paediatric Surgery is a national centre for highly specialised care within the ERNICA European Reference Network for rare diseases.

A total of 2395 patients were hospitalised at the department in 2025. Of the total number, 156 newborns and infants were treated in the neonatal surgical intensive care unit. A total of 1,972 children underwent surgery. A total of 23,325 children were treated in outpatient units.

Specialised outpatient units:

- Thoracic Surgery
- Liver, Biliary Tract and Pancreatic Surgery
- Neonatal Surgery and Congenital Malformations
- Urology
- Proctology
- Paediatrics
- Home Parenteral Nutrition Clinic
- Prenatal Consultations
- Stoma Clinic

New methods and procedures:

- ICG fluorescence-guided minimally invasive surgery
- Robotic surgery for paediatric urological disorders
- Laparoscopic left-sided pancreatectomy
- Replogle tube suction technique for long-gap oesophageal atresia
- Anoplasty with dorsal mobilisation of the rectum
- Perineum-sparing repair of vestibular fistula
- Percutaneous laparoscopic endoscopic jejunostomy (PLEJ)
- Macedo urethroplasty for subcoronal hypospadias
- Primary laparoscopic procedures in patients with Hirschsprung's disease
- Single-incision minimally invasive surgery

Unique equipment:

- Laparoscopic system for minimally invasive surgical procedures with ICG imaging capability (fluorescence using Verdye dye)
- Set of miniature surgical instruments for thoracoscopic and laparoscopic surgery in the smallest children (newborns and infants)
- Equipment for minimally invasive surgery with 3D imaging and audiovisual operating theatre equipment for online conferencing
- Laparoscopic training simulators for training and simulation of minimally invasive procedures

Significant events in 2025:

- The department became a full member of the European Paediatric Surgical Audit (EPSA) registry. MUDr. Alena Kokešová, Ph.D., MBA, is a member of the scientific board of this registry
- The department was selected for the SYPOVO pilot project (*proposal for a system of comprehensive integrated health and social care for patients with rare diseases*), announced by the Ministry of Health of the Czech Republic in cooperation with the European Union Social Fund
- Associate Professor of Surgery Paul Broens, MD, a leading European expert in anorectal physiology in children from University Medical Center Groningen, worked at the Department of Paediatric Surgery as a visiting professor
- Prof. MUDr. Michal Rygl, Ph.D., was elected as the European representative on the executive committee of WOFAPS (World Federation of Associations of Pediatric Surgeons) for the 2026–2028 term
- Doc. MUDr. Barbora Kučerová, Ph.D., was elected Honorary Secretary and Treasurer of the UEMS Section and Board of Paediatric Surgery (Union Européenne des Médecins Spécialistes)
- MUDr. Vojtěch Dotlačil successfully completed his doctoral studies in experimental surgery, defended his dissertation entitled “Optimisation of Surgical Treatment in Correlation with Biological Therapy in Paediatric Patients with Crohn’s Disease” and was awarded a Ph.D. degree
- MUDr. Vojtěch Dotlačil, Ph.D., received the extraordinary award of the Dean of the 2nd Faculty of Medicine, Charles University, for outstanding academic achievement

Publications:

- 6 articles with an IF
- 2 articles as last author
- 4 chapters in monographs
- 50 professional/scientific lectures

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

Head of Department: *prof. MUDr. Pavel Kršek, Ph.D.*

Deputy Head of Department: *doc. MUDr. Jana Haberlová, Ph.D.*

Head Nurse: *Gabriela Pavlová*

Basic description:

The Department of Paediatric Neurology, 2nd Faculty of Medicine, Charles University and Motol University Hospital (DPN), is a reference highly-specialised consultation department for all paediatric neurological diagnoses for the whole of the Czech Republic and, within certain diagnostic and treatment programmes, such as epilepsy surgery and neuromuscular diseases, also for patients from abroad. We have two inpatient wards with a total of 40 beds, including 6 lower-acuity ICU beds and 6 beds for video/EEG and polygraphic monitoring. The department includes a polyclinic with the specialised outpatient units listed below, a fully equipped Electrophysiology Laboratory and a Neurogenetics Laboratory offering molecular genetic diagnostics for a range of paediatric neurological diseases. The DPN is also an undergraduate and postgraduate teaching department and a research centre involved in many interdisciplinary and international projects. In 2025, we **hospitalised 1,143 children**, with a total of 1,346 hospitalisation episodes. A total of **24,258 outpatient examinations were performed** on 8,692 unique patients. The **Electrophysiology Laboratory** performed **5,161 procedures**, including 3,144 EEG examinations, 325 EMG examinations, 1,337 evoked potential (EP) examinations, 220 long-term video/EEG recordings, with a total of 1,003 eight-hour codes, and 135 polygraphic examinations. As part of the **epilepsy surgery programme**, 35 resection procedures, 6 long-term intracranial video/EEG studies, 3 primary implantations and 4 reimplantations of vagus nerve stimulators were performed. **Neurogenetics Laboratory**: 961 samples received from unique patients, 468 exome sequencing tests, 991 targeted conventional sequencing tests and 256 MLPA tests. **Neuromuscular Centre**: 1,597 outpatient examinations.

Recognised centres:

- Centres recognised by the Ministry of Health of the Czech Republic:
- Centre for Highly Specialised Care (CHSC) for drug-resistant epilepsy
- CHSC for multiple sclerosis and related disorders
- ERN for rare and complex epilepsies (ERN EpiCARE)
- ERN for rare neuromuscular diseases (ERN NMD)
- Hereditary Ataxia Centre (under ERN RND)
- Centres recognised by the specialist society of the Czech Medical Association of J. E. Purkyně:
- Centre for Sleep Disorders in Children
- Centre for Headaches in Children – new centre from 2025
- Other centres:
- Epilepsy Research Centre Prague (EpiReC) – a consortium of the 2nd Faculty of Medicine, Charles University, Motol University Hospital, the Institute of Physiology of the CAS and the Faculty of Electrical Engineering of the Czech Technical University in Prague in the field of translational epilepsy research
- Motol University Hospital Centre for Autoimmune Encephalitis – new centre from 2025

Specialised outpatient units:

- Epileptology Clinic
- Sleep Disorders in Children Outpatient Unit
- At-Risk Newborns and Infants Outpatient Unit
- Neurocutaneous Disorders Clinic
- Botulinum Toxin Application Outpatient Unit
- Neuro-Oncology Outpatient Unit
- Neurogenetics Outpatient Unit
- Inherited Neurometabolic and Neurodegenerative Diseases Outpatient Unit
- Headache Clinic for Children
- Paediatric Extrapyrmidal Disorders Clinic
- Psychology and Neuropsychology Clinic

New methods and procedures:

New methods introduced by the DPN Neurogenetics Laboratory

- Rapid NGS testing using TRIO analysis, proband plus parents, in serious conditions in paediatric patients with suspected genetically determined disease
- NGS method: Enrichment, known as spike-in, of genomic regions that were previously difficult to examine or clinically significant non-coding regions
- Introduction of testing for a newly described clinical entity, ReNU syndrome, using NGS as part of exome sequencing or Sanger sequencing
- Research: Optimisation of the evaluation of clinically significant tandem repeat expansions from exome or genome sequencing data
- Research: Introduction of CNV (copy number variation) evaluation from exome or genome data down to the level of a single exon

New methods and international cooperation of the Neuromuscular Centre

- In cooperation with the DPN Neurogenetics Laboratory, a method for mRNA-level diagnostics from muscle biopsy was introduced
- MUDr. Marie Rohlenová completed a fellowship at the Neuromuscular Centre in Paris and, after returning, introduced a new method at Motol University Hospital using muscle and peripheral nerve ultrasound in the diagnosis of neuromuscular diseases
- In collaboration with the University of Leuven, the international DuMAND project (<https://research.kuleuven.be/portal/en/project/3M250467>) was launched to research neurobehavioural abnormalities in patients diagnosed with Duchenne muscular dystrophy. Our department is the only participating department from Eastern Europe

New grants and international cooperation of the Hereditary Ataxia Centre

- PASS Omaveloxon (2025–2030) – Motol University Hospital became one of the first centres in a study monitoring the effects of omaveloxolone over five years following FDA and EMA approval and market launch
- Biogen ID CZ-SKY-12330 (2025–2026) – a study to identify mitochondrial biomarkers reflecting treatment with omaveloxolone in patients with Friedreich's ataxia

- FARA Research Grant: Role of Cerebellar Inhibition and ctDCS Modulation in Friedreich's Ataxia – research into the role of cerebellar inhibition and ctDCS modulation in Friedreich's ataxia
- Assessment of dysarthric speech using the Redenlab protocol – cooperation with the University of Melbourne, prof. Vogel

Unique equipment:

GENOSENS-2150 ClinX UV documentation system for agarose gels.

- In 2025, the DPN Neurogenetics Laboratory acquired, using funds from Motol University Hospital Institutional Support (IG 6005), a new documentation and imaging system designed for the detection, photography and analysis of DNA, RNA and proteins in agarose and other electrophoretic gels using fluorescent illumination and a sensitive camera.

Significant events in 2025:

- **Jan Evangelista Purkyně Award for prof. V. Komárek.** The award of the Jan Evangelista Purkyně Prize, the highest honour of the Czech Medical Association of J. E. Purkyně for lifetime contribution to the development of medical disciplines, symbolically concludes the outstanding professional career of prof. MUDr. Vladimír Komárek, CSc., and confirms his exceptional standing among the most important figures in Czech medicine
- **Prof. P. Kršek appointed Secretary of the EPNS.** Prof. Pavel Kršek was elected Secretary of the European Paediatric Neurology Society (EPNS), becoming the first representative of the Czech Republic in history to hold this position
- **Prof. P. Kršek as member of the organising committee of the international EPODES courses.** Prof. Pavel Kršek became a member of the core organising committee of the international EPODES courses (*ILAE School on Pre-Surgical Evaluation for Epilepsy and Epilepsy Surgery*), the only epilepsy surgery course certified by the International League Against Epilepsy (ILAE). The most recent course was attended by 70 participants from 31 countries on five continents (<https://ta-service.cz/epodes2026/>)
- **Organisation of an international neuromuscular educational event in Prague** Doc. Jana Haberlová, in cooperation with Novartis, organised the international *SMA preceptorship* educational event on Care for Patients with Spinal Muscular Atrophy at Motol University Hospital on 27–28 November 2025. The event was attended by 20 international participants from around the world
- **Successful Ph.D. defences** In 2025, doctoral dissertations were successfully defended by MUDr. Barbora Splítková, with the dissertation “*Introduction of Molecular Genetic Diagnostics of Focal Cortical Dysplasia Type I and Its Use in the Preoperative Assessment of Patients with Focal Drug-Resistant Epilepsy*”; MUDr. Lucie Šťovíčková, with the dissertation “*Longitudinal Follow-up of Patients with Friedreich's Ataxia in the Czech Republic and Correlation of Genotype and Phenotype*”; and Mgr. Alena Musilová, with the dissertation “*Elucidation of Genetic Causes in Rare Neurological Diseases: The Benefit of New Approaches Using Massively Parallel Sequencing Data*”
- **New grant projects** Department of Paediatric Neurology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, received grant

NW25-04-00427 NW25-04-00427, “Combination of Scalp EEG Biomarkers and Neuroimaging to Predict Focal Cortical Dysplasia and Improve Non-Invasive Diagnostics in Patients with Epilepsy” (principal investigator: prof. Pavel Kršek) and grant NW26-04-00190, “Disorders of Mitochondrial Transport as a Cause and New Therapeutic Target in Developmental and Epileptic Encephalopathies” (co-principal investigator for Motol University Hospital: doc. Petra Laššuthová).

Publications:

- 26 original articles published in impact-factor journals (cumulative IF: 247.1), including 10 first-author and 2 last-author publications
- 2 publications in peer-reviewed journals

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

Head of Department: **prof. MUDr. Zdeněk Čada, Ph.D.**

Deputy Head of Department: **MUDr. Petra Dytrych, Ph.D., MBA** (until 30 May 2025)

Deputy Head of Department: **MUDr. Zuzana Balatková, Ph.D.** (from 1 June 2025)

Head Nurse: **Adriana Laudátová**

Basic description:

The Department of ENT (Ear, Nose and Throat) focuses on the diagnosis and conservative and surgical treatment of ENT diseases in paediatric patients from birth to 19 years of age. As a highly specialised consultation department, it provides care for children from across the Czech Republic with diseases that are difficult to diagnose or treat. The department performs surgery on newborns and older children with facial clefts as part of multidisciplinary cooperation. The department is a cochlear implantation centre and includes a Level III Paediatric Audiology Centre. The Paediatric Audiology Centre participates in hearing screening and rescreening in newborns and older children in accordance with current professional guidelines. During the past year, more than 2,000 examinations were performed in patients with hearing impairment. Objective hearing examinations under general anaesthesia are also an important part of care, with 115 such examinations performed. Patients with hearing impairment are provided with multidisciplinary care in cooperation with a phoniatrian, clinical speech therapist, clinical psychologist and biomedical engineer. Depending on the type of hearing impairment, patients are offered correction with hearing aids or surgical treatment, (implantation of bone-conduction hearing implants or cochlear implantation). In the past year, 78 cochlear neuroprostheses were implanted. Some of these procedures were performed using the Otoarm robotic arm. In addition, approximately 2,450 procedures focused on checking and adjusting cochlear implant settings were carried out.

In 2025, our department became an accredited Type III Sleep Medicine Centre and maintains long-term cooperation with the Type I Sleep Medicine Centre at the Department of Paediatric Neurology, 2nd Faculty of Medicine, Charles University and Motol University Hospital. We provide surgical treatment for obstructive sleep apnoea. In 2025, drug-induced sleep endoscopy (DISE) was introduced into routine practice and the availability of sleep polygraphy was expanded. The department also provides long-term surgical treatment for patients with thyroid and parathyroid

diseases. It is also part of the Motol University Hospital Laryngotracheal Centre, where it participates in the diagnosis and treatment of patients with complex disorders of the tracheobronchial tree. The department also provides comprehensive care for patients with diseases of the nose, paranasal sinuses and skull base, including endoscopic resections of tumours and congenital malformations.

In 2025, a total of 2,642 patients were hospitalised at the department and 2,607 operations were performed. The number of outpatient examinations was 31,661, including 13,762 unique patients.

From January 2025, a day surgery unit (DSU) was launched on the premises of the paediatric polyclinic. This service provides care for patients from Prague. Surgical procedures under general anaesthesia suitable for day surgery are performed there. This has reduced waiting times for certain elective surgical procedures. In 2025, 406 procedures were performed in the day surgery operating theatre.

Specialised outpatient units / clinics / centres:

- Otosurgery Outpatient Unit
- Audiology Outpatient Unit
- Cochlear Implantation Centre and Rehabilitation Centre after Cochlear Implantation and Bone-Conduction Implantation (BCI)
- Phoniatrics Outpatient Unit
- Thyroid Outpatient Unit
- Oncology Outpatient Unit
- Laryngology Outpatient Unit
- Dysphagia Outpatient Unit and GERD Diagnostic Unit
- Rhinology Outpatient Unit
- Plastic Surgery Outpatient Unit for Cleft Defects
- Otoneurology Outpatient Unit
- Sleep Disorders Outpatient Unit
- Sonography Outpatient Unit
- Sialendoscopy Outpatient Unit and Salivary Gland Disorders Outpatient Unit

New methods and procedures:

- Drug-induced sleep endoscopy in the diagnosis of sleep apnoea syndrome
- Endoscopic choanoplasty using a septal flap in choanal atresia
- Auricular reconstruction in microtia in cooperation with the Department of Plastic Surgery 3rd Faculty of Medicine, Charles University and Královské Vinohrady University Hospital
- Balloon dilation of the Eustachian tube in Eustachian tube dysfunction
- Intraoperative neuromonitoring
- Functional endoscopic evaluation of swallowing (FEES)
- Extended microsurgery for tumours of the paranasal sinuses and skull base using navigation
- Endoscopic examination of the salivary glands and endoscopic treatment of sialolithiasis
- Use of an exoscope in ear surgery
- Use of robotic surgery in cochlear implantation

Unique equipment:

- Plasma generator – plasma coblation
- Balloon catheter for Eustachian tube dilation intended for patients with Eustachian tube dysfunction
- Comprehensive equipment for audiological examinations
- Equipment for otoneurological examination: video head impulse test, including a system for the youngest children, and vestibular evoked myogenic potentials
- Neo Laser with microfibre
- Polygraphic system for sleep monitoring in patients with sleep apnoea (PSG)
- Olympus exoscope
- Sialendoscope
- Ultra-thin videoendoscope with video recording capability

Significant events in 2025:

Ministry of Health project for the conceptual development of a research organisation: GAUK No. 196123, GAUK No. 2120332, GAUK No. 194123, AZV 5399 (NU21-01-00448);

MUDr. Michal Jurovčík – Internal Grant No. 6024 – Improving the Accurate and Timely Diagnosis and Comprehensive Rehabilitation of Children with Severe Congenital and Acquired Hearing Impairment. In 2025, cooperation was launched with the Institute of Animal Physiology and Genetics of the Czech Academy of Sciences in Liběchov - the PIGMOD centre. The research involves the experimental application of an AAV - GFP vector into the structures of the inner ear, particularly identifying the most suitable surgical approach to achieve safe and reliable administration.

Publications:

14 articles with an IF:

- Martinková K, Kožejová Jaklová L, Kočandrlová K, **Borský J**, Dupej J, Morávek A, Velemínská J. From infancy to toddlerhood: A 3D analysis of facial asymmetry in children with and without orofacial clefts. Clin Oral Investig. 2025 Aug 2;29(8):394. doi: 10.1007/s00784-025-06484-1. PMID: 40751836; PMCID: PMC12317876. **IF 3,1**
- Murgasova L, Hulkova H, Baresova V, **Jurovcik M**, Stritesky J, Jurickova K, Magner M, Sikora J. Correction to: Adenotonsillar pathology in mucopolysaccharidoses - lysosomal storage predominates in paracortical CD63 + cells. Virchows Arch. 2025 Mar;486(3):643. doi: 10.1007/s00428-024-03902-9. Erratum for: Virchows Arch. 2024 Jan;484(1):135-140. doi: 10.1007/s00428-023-03662-y. PMID: 39174755; PMCID: PMC11950072. **IF 3,1**
- Janouskova K, Vorobiov O, Maminak K, Kalfert D, Vasina L, **Dytrych P**, Pastorkova N, Hlozek J, Kovar D, Vodicka J, Masopust V, Astl J, Holy R. The importance of olfactory and trigeminal event-related potentials (OERPs/TERPs) in the assessment of olfactory function in subjects with chronic rhinosinusitis with nasal polyposis. J Appl Biomed. 2025 Jun;23(2):57-62. doi: 10.32725/jab.2025.006. Epub 2025 Jun 19. PMID: 40583338. **IF 2**
- Holy R, Filipovsky T, Lukavcova E, Kalfert D, Prazenica P, **Dytrych P**, Hlozek J, Rotnagl J, Kovar D, Astl J. Applying the technology ORBEYE™ exoscope in transoral exoscopic laryngeal surgery: single centre prospective study. J Appl Biomed. 2025 Sep;23(3):138-143. doi: 10.32725/jab.2025.010. Epub 2025 Aug 21. PMID: 41026948. **IF 2**
- Vasina L, Pastorkova N, Vorobiov O, Janouskova K, **Dytrych P**, Hlozek J, Musilova S, Astl J, Holy R. Diagnostics of olfactory dysfunction in Parkinson's disease - a literature overview and case series. Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub. 2025 Aug 13. doi: 10.5507/bp.2025.021. Epub ahead of print. PMID: 40823773. **IF 0,7**
- Vodicka J, Chrobok V, Chovanec M, Urik M, Gal B, Salzman R, **Katra R**, Skopek P, Kolin J, Knizek Z, Dolezalova H, Sychra L, Bursa P, Jetmarova L, Berkova S, Strejcek P, Hajek J, Kucera Z, Syrovatka J, Kostlivy T, Slouka D. Late posttonsillectomy haemorrhage, differences

in unilateral versus bilateral tonsillectomy, a retrospective epidemiological multicentric study. *Sci Rep.* 2025 Dec 24;15(1):44465. doi: 10.1038/s41598-025-28189-x. PMID: 41444274; PMCID: PMC12739166. **IF 3,9**

- Vodicka J, Chovanec M, Urik M, Gal B, **Katra R**, Skopek P, Glumbikova V, Svejdoma A, Knizek Z, Kolin J, Dolezalova H, Sychra L, Bursa P, Jetmarova L, Berkova S, Strejcek P, Hajek J, Kostlivi T, Slouka D. Epidemiology of late postoperative bleeding in OSA-related tonsil surgery: a multicentric retrospective study. *J Appl Biomed.* 2025 Sep;23(3):126-137. doi: 10.32725/jab.2025.016. Epub 2025 Sep 29. PMID: 41026947. **IF 2**
- Bonaventurová M, **Balatková Z**, Červený K, Černý R, Bandúrová V, Koucký V, Peterková L, Fík Z, Komarc M, Mrázková E, Plzák J, **Čada Z**. The comparison between intratympanic gentamicin prehabilitation and postoperative virtual reality exposure to standard vestibular training in patients with vestibular schwannoma. *Eur Arch Otorhinolaryngol.* 2025 Jan;282(1):79-89. doi: 10.1007/s00405-024-08891-8. Epub 2024 Aug 10. PMID: 39127800; PMCID: PMC11735475. **IF 2,2**
- Kučerová K, **Balatková Z**, Slabý K, Rampová M, Čakrt O. Vestibular Functions of Adolescents With Idiopathic Scoliosis: A Comprehensive Assessment and Comparative Study. *J Manipulative Physiol Ther.* 2025 Jan-Jun;48(1-5):304-310. doi: 10.1016/j.jmpt.2025.09.012. Epub 2025 Nov 2. PMID: 41176726. **IF 1,4**
- Čapková D, Bureš Z, Fuksa J, Vencovský V, **Svobodová V**, Tóthová D, Vojtová M, Cha S, Chovanec M, Syka J, Profant O. Development of audiometric parameters throughout the lifespan. I: Auditory data. *Hear Res.* 2025 Aug;464:109308. doi: 10.1016/j.heares.2025.109308. Epub 2025 May 17. PMID: 40412303. **IF 2,65**
- Bureš Z, Voráček J, Čapková D, Fuksa J, Vencovský V, **Svobodová V**, Tóthová D, Vojtová M, Cha S, Syka J, Profant O. Development of audiometric parameters throughout the lifespan. II: Relationships between parameters. *Hear Res.* 2025 Aug;464:109309. doi: 10.1016/j.heares.2025.109309. Epub 2025 May 17. PMID: 40435917. **IF 2,65**
- **Svobodová V**, Profant O, Syka J, Tóthová D, Bureš Z. The Influence of Asymmetric Hearing Loss on Peripheral and Central Auditory Processing Abilities in Patients With Vestibular Schwannoma. *Ear Hear.* 2025 Jan-Feb 01;46(1):60-70. doi: 10.1097/AUD.0000000000001555. Epub 2024 Jul 15. PMID: 39004787. **IF 2,8**
- Zieliński J, Costa S, Cherkas M, Glibbery N, Kovács P, Mitrea-Sireteanu L, **Ciller M**, Yilmaz Topçuoğlu MS. Pediatric Septoplasty: Benefits, Challenges, and Clinical Recommendations-Comprehensive Review of Young ESPO. *J Clin Med.* 2025 Aug 6;14(15):5537. doi: 10.3390/jcm14155537. PMID: 40807158; PMCID: PMC12347891.
 - **IF 3,3**
- Koucký V., **Balatková Z**, Vlasák A, Kluh J., Fík Z.: Surgical treatment of bilateral dehiscence of superior semicircular canal. *Cesk Slov Neurol N* 2025; 88(5): 325-327, **IF 0,4**

Books and chapters in monographs

- Jurovčík M.: Cizí tělesa v jícnu. Kapitola v monografii Nabil el Lababidi a kol.: Dětská gastroenterologie, Grada Publishing, a.s., 2025, s.43-51. ISBN 978-80-271-5336-7
- Jurovčík M.: Poleptání jícnu. Kapitola v monografii Nabil el Lababidi a kol.: Dětská gastroenterologie, Grada Publishing, a.s., 2025, s.53-57. ISBN 978-80-271-5336-7
- Aksenovová Z.: Kochleární implantace a implantabilní systémy. Kapitola v knize Neubauer a kol. Kompendium klinické logopedie, nakladatelství Portál, 2025, s.736-756, ISBN978-80-262-2053-4
- Aksenovová Z.: Kochleární implantace a implantabilní systémy. Kapitola v knize Neubauer a kol. Kompendium klinické logopedie, nakladatelství Portál, 2025, s.736-756, ISBN978-80-262-2053-4
- Vymlátílová E.: Problémy sluchových vad z hlediska klinické psychologie. Kapitola v knize Neubauer a kol. Kompendium klinické logopedie, nakladatelství Portál, 2025, s.757-793, ISBN978-80-262-2053-4
- Holmanová J.: Rehabilitace vad sluchu v klinické logopedii. Kapitola v knize Neubauer a kol. Kompendium klinické logopedie, nakladatelství Portál, 2025, s.795-840, ISBN978-80-262-2053-4

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

Head of Department: *prof. MUDr. Zdeněk Šumník, Ph.D.*

Deputy Head of Department: *prof. MUDr. Štěpánka Průhová, Ph.D.*

Head Nurse: *Mgr. Jana Boháčová*

Basic description:

The Department of Paediatrics provides diagnosis, treatment and follow-up care for paediatric patients from across the Czech Republic in almost all fields of internal medicine. The department has six inpatient wards, each with its own specialised focus. The department also includes a Renal Replacement Therapy Unit and two research laboratories. **During 2025, 8,876 patients were hospitalised at the department, while outpatient services accounted for almost 45 million reimbursement points.** The teams are part of European Reference Networks (EU-ERN) (ERKNet, Endo-ERN, ERN BOND, ERN LUNG and ERN RARE LIVER).

Specialised outpatient units / clinics / centres:

- The outpatient section of the department comprises **21 specialised units**, including outpatient clinics for children following kidney, lung and liver transplantation.

New methods and procedures:

- The **nephrology working group** provides comprehensive care for children with kidney failure and other nephrological diseases, including peritoneal dialysis in the youngest children. Overall, the team cares for almost 50 children awaiting kidney transplantation, with a further three children added in 2025. Eight children are on home peritoneal dialysis and two on haemodialysis. The team provides renal replacement and other extracorporeal therapies, including plasmapheresis and immunoadsorption, for paediatric patients across all specialisations at Motol University Hospital. In 2025, the team also participated in kidney transplantation from living donors for patients from Slovakia. Biological treatment for children with complex progressive kidney disease continues to develop intensively. The team provides a 24-hour highly-specialised consultation service for the whole of the Czech Republic.
- The **pulmonology team** provides highly specialised care for patients with:
 - i) cystic fibrosis, including modulator therapy targeted according to in vitro functional studies of the CFTR channel;
 - ii) primary ciliary dyskinesia – currently the only department in the Czech Republic providing the full diagnostic spectrum;
 - iii) childhood interstitial lung diseases, as one of two national centres in the Czech Republic;
 - iv) the need for long-term ventilatory support, both invasive and non-invasive, especially in neuromuscular diseases and breathing disorders;
 - v) congenital malformations of the respiratory tract;
 - vi) pulmonary hypertension; and
 - vii) complicated pneumonias. The department provides flexible bronchoscopy examinations for children from across Motol University Hospital. It is also involved in the management of post-resection complications, such as

bronchopleural fistulas, including the introduction of closure techniques using autologous blood or tissue glue, as well as transbronchial cryobiopsy for lung tissue sampling. The pulmonary function laboratory is the only department in Central Europe to examine children of all ages. In 2025, there were 208 bronchoscopic procedures and almost 6,500 pulmonary instrumental examinations performed in children of all age groups. The department participates in the paediatric lung and heart transplantation programme.

- The **gastroenterology team** successfully continued its intensive endoscopy programme, with almost 1,000 interventional procedures performed in 2025, including the insertion of percutaneous endoscopic gastrostomies combined with jejunal feeding (PEG-J), foreign body extraction, and endoscopic balloon dilation of oesophageal and small-bowel strictures. The team also cares for nine patients receiving home parenteral nutrition. As the only department in the Czech Republic, it treats 16 paediatric patients with short bowel syndrome using Revestive. An intensive paediatric liver transplantation programme is also under way at the department. Within this programme, children are indicated for liver transplantation, with 10 children indicated in 2025, and 84 children are under long-term follow-up after transplantation. Cooperation with a foreign centre also continues, enabling patients with portal hypertension to undergo surgical treatment using Meso-Rex bypass; three children underwent this procedure in 2025.
- In 2025, the **diabetology-endocrinology team** successfully continued the exceptional Betty population screening project for type 1 diabetes (T1D). During the year, more than 15,000 blood samples from 260 departments across the Czech Republic were accepted for testing, with autoantibodies detected in 100 samples; early-stage diabetes was diagnosed in 56 of these cases. As part of the early access programme, the **first administration of teplizumab in the Czech Republic** was carried out to delay the need for insulin treatment in a child with preclinical stage type 1 diabetes. The team also continued introducing modern technologies into T1D treatment, researching the aetiology of growth disorders and the effects of growth hormone therapy, and organising regular nationwide meetings of paediatric endocrinologists, diabetologists and families living with diabetes. In terms of SWEET benchmarking of centres of excellence for paediatric diabetes care, this department is one of the three best centres in the world. Within ERN BOND, we diagnosed 25 new cases of rare skeletal disorders and administered antiresorptive treatment to 131 children.
- The **Infant Department** is a leading specialised care centre combining modern diagnostics, intensive and long-term support, multidisciplinary management and early palliative integration for the most complex paediatric patients under two years of age. Care includes non-invasive ventilatory support, diagnosis and treatment of metabolic disorders, including glycaemic monitoring, management of nutritional problems, swallowing disorders and parenteral nutrition. The department cares for newborns with congenital malformations, syndromes or multiorgan involvement. It is a reference centre for the diagnosis of neonatal cholestasis. Between 2022 and 2025, a total of 69 patients with this diagnosis were examined, with **biliary atresia the most common aetiology at 33.3%**. The department makes a major contribution to

the early detection of these conditions, which is crucial for prognosis and for the indication of surgical or transplantation treatment.

- The **Intensive Care Unit** cares for children with severe necrotising pneumonias requiring chest drainage, organ failure before and after organ transplantation, autoimmune diseases and multiorgan failure. These patients required non-invasive mechanical ventilation, renal replacement therapies, intensive monitoring of vital signs and similar advanced support. The department also treats children who have undergone extensive spinal surgery and other surgical procedures, as well as severe intoxications.
- **The Věra Vávrová Laboratory of the Department of Paediatrics, 2nd Faculty of Medicine, Charles University and Motol University Hospital** is a research laboratory focused on identifying the mechanisms underlying rare chronic diseases in children. In 2025, it focused on in vitro functional studies of the *PDX1* gene and a chondrocyte model.
- **The Molecular Genetics Laboratory of the Department of Paediatrics, 2nd Faculty of Medicine, Charles University and Motol University Hospital** is the only laboratory in the Czech Republic specialising in molecular genetic research into hereditary forms of diabetes and hyperinsulinism. It manages the national registry for these diseases. In 2025, it introduced a rapid and accurate method for determining and quantifying the most common genetic variant causing mitochondrial diabetes.

Unique equipment:

- The gastroenterology and pulmonology teams are currently equipped with state-of-the-art technology, including endoscopes for examining children in the lowest weight categories.
- The gastroenterology team acquired an ultrasound system for examining patients with inflammatory bowel disease (IBD) and a high-resolution manometry system for examining patients with intestinal motility disorders.
- The Paediatric Department is the only paediatric unit in the Czech Republic equipped with an endoscopic simulation system for gastroenterology and pulmonology procedures.

New methods and procedures:

- Endoscopic closure of bronchopleural fistulas using tissue glue or autologous blood
- Transbronchial lung cryobiopsy
- Expansion of the spectrum of immunofluorescence testing for primary ciliary dyskinesia (in cooperation with the Institute of Histology and Embryology, 2nd Faculty of Medicine, Charles University)
- CF laboratory: Ussing chamber for electrophysiological measurement of potential differences across the respiratory epithelial cell membrane
- Introduction of a rapid and accurate method for determining and quantifying the most common genetic variant causing mitochondrial diabetes

Significant events in 2025:

- Doc. MUDr. Vít Neuman, Ph.D., and doc. MUDr. Katarina Mitrová, Ph.D., successfully defended their habilitation theses in Paediatrics

- Doc. MUDr. Vít Neuman, Ph.D., MUDr. Lukáš Plachý, Ph.D., and MUDr. Shenali Amaratunga, Ph.D., obtained specialist qualifications in paediatric endocrinology and diabetology, while MUDr. Žofia Vareniová, Ph.D., obtained a specialist qualification in paediatric pulmonology
- Doc. MUDr. Vít Neuman, Ph.D., received the prestigious Ervín Adam Award for outstanding work in preventive research for population health and delivered the invited lecture “Learning from the Best Practices – the Czech Experience” at the Norwegian National Congress of Paediatric Diabetology
- MUDr. Shenali Amaratunga, Ph.D., received the award for best publication from the Czech Endocrinology Society of the Czech Medical Association of J. E. Purkyně and the award for best publication from the Czech Paediatric Society of the Czech Medical Association of J. E. Purkyně. She also delivered the lecture “The Growth of the Child Within: A Quiet Revolution” at the prestigious TEDx Charles University conference
- MUDr. Lukáš Plachý, Ph.D., as principal investigator, received AZV grant NW25-07-00164, “Short Stature in Children: Clinical, Genetic and In Vitro Functional Study of Hormonal and Molecular Regulation and Therapeutic Possibilities”
- Doc. MUDr. Václav Koucký, Ph.D., as principal investigator, received AZV grant NW25-07-00214, “Introduction of New Examination Methods for the Diagnosis and Monitoring of Early Stages of Chronic Mucopurulent Bronchitis in Children”, and became Chair of the Programme Committee of the National Conference on Paediatric Pulmonology 2025
- Successful completion of postgraduate studies in 2025: MUDr. Kateřina Gregorová, Ph.D., MUDr. Pavlína Koucká, Ph.D., MUDr. Patrik Konopásek, Ph.D.

Publications:

The clinic’s significant publications include articles in D1 and Q1 journals. In 2025, a total of 73 impact-factor publications were produced, including a collaborative publication with the Czech Academy of Sciences in ***Nature Communications*** (Nat Commun. 2025 Dec 11;16(1):11301).

Adult Inpatient Part

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

Head of Department: **prof. MUDr. Milan Kvapil, CSc., MBA** (until 31 August 2025)

Head of Department: **MUDr. Martina Nováková, Ph.D.** (from 1 September 2025)

Deputy Head of Department: **prof. MUDr. Milan Kvapil, CSc., MBA** (from 1 September 2025)

Head Nurse: **Vladimíra Kotvová**

Basic description:

The Department of Geriatric Internal Medicine provides diagnostic and therapeutic care for older patients across the full scope of geriatrics and internal medicine, both for inpatients and outpatients. In addition to standard acute internal medicine care, the department provides specialised care programmes for older people. It provides undergraduate and postgraduate teaching.

The department contributes to the teaching of geriatrics and internal medicine for Czech and international students in the 4th, 5th and 6th years at the 2nd Faculty of Medicine, Charles University, and teaches Nursing Care for Older People to 2nd-year general nursing students. The department is accredited in the internal medicine core curriculum, geriatrics, internal medicine, endocrinology and diabetology.

In 2025, the department was undergoing extensive renovation. During the renovation works, it opened a second inpatient ward for standard geriatric care. Despite operating in reduced premises, with a maximum capacity of 40 beds, the department hospitalised 513 patients, more than three quarters of whom were discharged home.

A total of 5,646 patients were examined in the specialised outpatient units in 2025, which, during the reconstruction, were operating from just two rooms.

The department works with the 3rd Department of Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital, in the care of patients after lung transplantation. Together with the Department of Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital, it provides preoperative preparation for oncology patients. It also works with the Department of Spinal Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital, in the preoperative and postoperative care of patients with the full spectrum of spinal disorders, including spinal tumours.

Specialised outpatient units:

- Geriatrics Outpatient Unit
- Diabetes Outpatient Unit
- Podiatry Outpatient Unit
- Urology Outpatient Unit
- Angiology Outpatient Unit
- Conservative Cardiology Outpatient Unit – echocardiography
- Endocrinology Outpatient Unit
- Ultrasound Outpatient Unit

Unique equipment:

- Spirometry, audiometry, SUDOSCAN, non-mydratic fundus camera
- Photoplethysmography with ABI/TBI measurement
- Duplex ultrasound
- ApneaLink sleep apnoea testing device
- BCM monitor; InBody
- ECG Holter monitor
- ABPM – 24-hour blood pressure monitoring

New methods and procedures:

- The Department of Geriatric Internal Medicine has introduced comprehensive functional tests into routine practice to assess older patients' functional capacity and performance.
- Measurement of sudomotor function has been introduced into routine practice for screening autonomic neuropathy in patients with diabetes.
- Handgrip strength measurement is used as a quality-of-care indicator in hospitalised patients. In 2025, physiotherapy and rehabilitation nursing helped significantly increase the number of patients whose muscle strength improved during hospitalisation.
- A new method for assessing peripheral perfusion by measuring pedal acceleration time using duplex ultrasound was introduced.
- A telemedicine project was prepared in cooperation with the Czech Technical University.

Significant events in 2025:

- The department continued to undergo extensive reconstruction in 2025. During the reconstruction, it successfully opened a second inpatient ward for standard geriatric care, increasing its bed capacity from 25 to 40 beds.
- The department is involved in organising the innovative Generace postgraduate educational seminars, which focus on interdisciplinary knowledge sharing.
- Physicians from the department actively present their work at European and global congresses, including ATTD (Advanced Technologies & Treatments for Diabetes), DFSG (Diabetic Foot Study Group) and EASD (European Association for the Study of Diabetes).
- The department organised major congresses under the auspices of the Czech Diabetes Society of the Czech Medical Association of J. E. Purkyně.
- The department presented its activities at the Geriatrics Congress in Reykjavík.
- MUDr. Martina Nováková, Ph.D., was appointed Head of the Department with effect from 1 September 2025.
- By decision of the Committee of the Czech Gerontological and Geriatric Society of the Czech Medical Association of J. E. Purkyně, the department was entrusted with organising the 31st National Congress of Gerontology.

Publications:

- NOVÁKOVÁ, Martina, BARTOVÁ Alžběta, ŠTEFFL Michal, HOLMEROVÁ Iva. Workload and role differentiation in medical long-term care and nursing homes: implications for professional care team well-being in dementia care. Contemp Nurse. 2025 Nov 12:1-15. doi: 10.1080/10376178.2025.2586195

- FEJFAROVÁ, Vladimíra; KOLIBA, Miroslav; PIŤHOVÁ, Pavlína; FLEKAČ, Milan; PRÝMKOVÁ, Věra; VENEROVÁ, Johana; STRYJA, Jan; KOŠKOVÁ, Martina; KŮSOVÁ, Hana; MAREŠ, Jan; JIRKOVSKÁ, Alexandra; JIRKOVSKÁ, Jarmila; SIXTA, Bedřich. Economic burden of podiatric care for diabetic foot ulcers in the Czech Republic: A prospective multicenter study. *Diabetes Research and Clinical Practice*. 2025, 223(May), 112141. ISSN: 0168-8227. DOI: 10.1016/j.diabres.2025.112141.
- JIRKOVSKÁ, Alexandra; FEJFAROVÁ, Vladimíra; PIŤHOVÁ, Pavlína; KOLIBA, Miroslav; JIRKOVSKÁ, Jarmila; KŮSOVÁ, Hana; DRIENKO, Miroslav. Doporučený postup České diabetologické společnosti ČLS JEP pro prevenci, diagnostiku a terapii onemocnění nohou související s diabetem. První část (1/2). *Diabetologie, metabolismus, endokrinologie, výživa*. 2025, 28(1), s. 19-32. ISSN: 1211-9326.
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Department of Internal Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head of Department: prof. MUDr. Radan Keil, Ph.D.

Deputy Head of Department: MUDr. Jindra Lochmannová

Head Nurse: Bc. Miriam Němec (until 31 January 2025)

Head Nurse: Mgr. Silvie Štěpánková, DiS. (from 1 February 2025)

Basic description:

The Department of Internal Medicine provides comprehensive diagnostic and therapeutic care across almost the full breadth of internal medicine, both to inpatients and outpatients from its catchment area and, through highly specialised consultation services, to patients from across the Czech Republic. It provides undergraduate teaching for Czech and international students in years 3 to 6 at the 2nd Faculty of Medicine, Charles University, as well as postgraduate teaching in the field.

The department is a training centre for doctors preparing for specialist certification in internal medicine, gastroenterology, diabetology/endocrinology, nephrology, intensive metabolic care, and parenteral and enteral nutrition. The department is also a teaching centre for physicians training in endoscopic methods and abdominal ultrasonography, with the subsequent possibility of obtaining licences guaranteed by the Czech Medical Chamber.

In 2025, the department had to make 30 beds from its inpatient capacity available to other departments; despite this, it treated 4,433 patients, almost the same number as in the previous year. A total of 39,553 outpatient procedures were performed.

The department also performed 6,141 endoscopic procedures during the year. In ERCP, the department is the highest-volume centre for both adult and paediatric patients in the Czech Republic.

Specialised outpatient units / clinics / centres:

- General Internal Medicine Outpatient Unit, including consultation services
- Gastroenterology Outpatient Unit, including endoscopy and sonography

- 24-hour urgent endoscopy service, including ERCP, gastroscopy and colonoscopy
- Diabetes Centre
- Podiatry Clinic
- Cardiology Outpatient Unit, including echocardiography
- Angiology Outpatient Unit, including duplex ultrasound examinations of arteries and veins
- Nephrology Outpatient Unit, including peritoneal dialysis
- Nutrition Outpatient Unit
- Lipidology Outpatient Unit
- Endocrinology Outpatient Unit
- Centre for Biological Treatment of Inflammatory Bowel Disease
- Centre for the Treatment of Viral Hepatitis
- Centre for the Treatment of Obesity
- Centre for the Biological Treatment of Hyperlipoproteinemia

New methods and procedures:

- Endoscopic full-thickness resection device (EFTRD) procedures in the stomach – our department was the first in the Czech Republic to perform this method in the stomach.
- Introduction of EUS-guided drainage of pancreatic pseudocysts and peripancreatic fluid collections, including walled-off necrosis (WON), using lumen-apposing metal stents. The Hot AXIOS system is used for these procedures.
- Weekly multidisciplinary seminars, or oncology boards, are held to ensure the effective management of complex patients.
- In cooperation with the Department of Pneumology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, we became involved in a programme of the comprehensive assessment of patients before their inclusion on the lung transplantation waiting list.
- In cooperation with the Department of Ophthalmology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, we continue to provide therapeutic rheopheresis for patients with age-related macular degeneration (AMD).
- In cooperation with the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, we provide inpatient facilities, preparation and post-procedural care for patients with absent or malfunctioning vascular access for haemodialysis. These are new methods, including WavelinQ and Surfacor, as well as translumbar catheters.
- In 2023, treatment using immunoadsorption was introduced. This method is provided to neurology patients with demyelinating diseases that respond poorly to pharmacological treatment. It is also expected to benefit patients with specific types of lung transplant rejection and other patients with autoimmune diseases. The number of patients requiring this treatment continues to rise. Our department is the largest centre for these procedures in the Czech Republic.
- In 2024, the minimally invasive treatment of obesity using endoscopic gastric remodelling, or endoscopic sleeve gastropasty (ESG), was introduced.

- A unique advance is the implementation of virtual reality in clinical practice. We were the first department in the Czech Republic to perform ESG using VR technology via Apple Vision Pro.
- A project using continuous glucose monitoring in patients with diabetes was launched in the inpatient wards of the Department of Internal Medicine. This will enable better and faster diabetes control and minimise the risk of hypoglycaemia.

Unique equipment:

- Canon Aplio i800 ultrasound system, which, in addition to standard two-dimensional and Doppler examinations, also enables multiparametric liver assessment
- Artificial intelligence for visualisation of colon polyps
- Canon Aplio ultrasound system with an endocrinology probe for functional assessment of the microvascularisation of thyroid nodules and precise visualisation of the biopsy needle, enabling thyroid nodule biopsies
- Bair Hugger 775-29 patient warming system
- Boston Scientific OverStitch system for endoscopic gastric remodelling
- Apple Vision Pro virtual reality technology

Significant events in 2025:

- The endoscopy unit of the Department of Internal Medicine holds the status of Digestive Endoscopy Centre, awarded by the Ministry of Health of the Czech Republic.
- On 11-12 September 2025, another edition of the “Prague Autumn Gastroenterology Days” congress took place under the auspices of the Gastroenterological Association of the Czech Republic, headed by its president prof. MUDr. Radan Keil, Ph.D.
- On 25 February 2025, a case seminar was held under the auspices of prof. MUDr. Radan Keil, Ph.D.
- MUDr. Jan Brož, Ph.D., successfully defended his habilitation thesis, “Treatment Outcomes in Patients with Diabetes Mellitus in the Czech Republic and Hypoglycaemia as One of the Influencing Factors”, and was appointed associate professor in December 2025.
- MUDr. Martin Wasserbauer successfully completed his postgraduate studies in Human Physiology and Pathophysiology at the 2nd Faculty of Medicine, Charles University, by defending his dissertation, “The Peripheral Nervous System and Its Dysfunction in Patients with Crohn’s Disease”.
- Representatives of the department actively participated in international professional and educational activities, including as faculty members of the prestigious Cleveland Clinic Advanced Endoscopy Course (CADEC) 2025.
- They also actively participated in the Bariatric Endoscopy Live Global congress, including a live demonstration of gastric remodelling in 2025.

Publications:

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

Head of Department: **prof. MUDr. Alan Stolz, Ph.D., MBA**

Deputy Head of Department: **MUDr. Filip Pazdírek, Ph.D.**

Head Nurse: **Bc. Jitka Kabrnová**

Basic description:

The Department of Surgery provides comprehensive care in the field of general surgery and oncological surgery, with a particular focus on abdominal surgery – especially pancreaticobiliary surgery and colorectal surgery, as well as endocrine surgery, breast surgery, reconstructive and plastic surgery, and now also bariatric surgery. Emphasis is placed on minimally invasive surgery, including laparoscopic and robotic procedures.

The department provides a continuous surgical emergency service for all urgent surgical conditions, including thoracic and abdominal trauma. The department also includes a plastic surgery unit providing a broad spectrum of plastic and reconstructive surgical procedures on an outpatient basis, on the inpatient wards of the Department of Surgery and, within multidisciplinary care, also in cooperation with other surgical specialties. Multidisciplinary care is utilised particularly in the management of severe conditions. The department closely cooperates with a number of other departments: the Department of Internal Medicine and the Endoscopy Centre, the Department of Oncology, the Department of Urology, the Department of Gynaecology and Obstetrics, the 1st Department of Orthopaedics, the Spinal Unit of the Department of Rehabilitation and Sports Medicine, the Department of Paediatric Surgery, the Department of Dermatology and the Department of Radiology.

In colorectal surgery, there has been a significant increase in minimally invasive procedures compared with previous years. The proportion of robotic and

laparoscopic procedures has increased substantially. In surgery for colorectal cancer, the proportion of minimally invasive procedures exceeds 80%. Since 2022, the department has served as an international training centre for robotic colorectal surgery. Since 2023, it has also been one of the first departments in the Czech Republic to perform robotic bariatric surgery. The department is part of the Highly Specialised Care Centres for rectal and hepatobiliary tumours. In terms of the number of procedures performed for rectal tumours, Motol University Hospital ranks first in the Czech Republic.

The increase in minimally invasive procedures and the introduction of multimodal perioperative care (ERAS) have contributed to improved short-term treatment outcomes, including faster recovery, a lower incidence of complications and shorter hospital stays. The department participates in the international quality assurance system for colorectal surgery within the audit programme of the European Society of Coloproctology (ESCP). It is also involved in the regional training of stoma nurses within the Czech Republic.

As the only centre in the Czech Republic and Slovakia, the Department of Surgery provides comprehensive surgical treatment, including differential diagnosis, for lymphatic drainage disorders.

The number of breast surgery procedures, including reconstructive procedures, has continued to increase. In the treatment of breast tumours, a new method of sentinel lymph node detection using iodine seed localisation was introduced.

In 2025, the number of patients treated within the day surgery programme increased. The department participates in undergraduate and postgraduate teaching and serves as a research site for scientific projects.

In 2025, a total of 22,181 patients received outpatient treatment, representing a 5% increase compared with 2024. Within the emergency outpatient service (OUPD), 5,609 patients were treated. A total of 3,715 patients were hospitalised. A total of 3,809 patients underwent surgery, representing a 6% increase compared with 2024. 560 patients were provided with consultations at Motol University Hospital.

Specialised outpatient units:

- Proctology Clinic
- Stoma Clinic – educational and training centre for stoma patients
- Pancreatic and Biliary Disease Clinic
- Malignant Melanoma Clinic
- Endocrine Surgery Clinic
- Breast Clinic
- Lymphoedema Clinic
- Endoscopy and anorectal manometry
- Plastic Surgery

New methods and procedures:

- Robotic surgery in the treatment of obesity
- Robotic colorectal resections
- Introduction of microsurgically sutured lymphovenous anastomosis techniques and preparation for lymph node autotransplantation
- ERAS in the care of patients within the colorectal programme

Unique equipment:

- Participation in the use of the da Vinci Xi robotic system for surgery of rectal and colon tumours
- Multidetector scintillation probe for sentinel lymph node identification in breast cancer and malignant melanoma surgery
- LigaSure system for use in both conventional and laparoscopic surgery
- Ultrasonic dissector
- Operating rectoscope with microsurgical instrumentation
- DG HAL system
- ICG-guided intraoperative assessment of anastomotic perfusion
- System for functional anorectal examinations

Significant events in 2025:

- Workshop for young surgeons focused on intestinal anastomosis suturing, organised in cooperation with SIMLEK and the Faculty of Medicine in Ostrava
- Training centre for robotic colorectal surgery
- Continuation of the Motol University Hospital “Modern Technologies” project focused on nanofibre technology
- Continuation of the ERAS project (multimodal perioperative care protocol in colorectal surgery). Expansion into prehospital care is planned with the aim of standardising preoperative preparation. Emphasis is placed on improving nutritional status, correcting anaemia, increasing cardiovascular fitness and educating patients prior to elective surgery. Following the modification of the ERAS protocol, a colorectal surgery training centre is planned
- Motol University Hospital project focused on the relationship between the microbiome and lymphoedema
- Motol University Hospital project focused on predicting treatment response to neoadjuvant chemoradiotherapy (NCHRT) in rectal tumours based on the microbiome
- Motol University Hospital project focused on predicting treatment response based on ctDNA in neoadjuvant treatment for breast cancer

Publications:

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- Ioannidis O, Anestiadou E, Ramirez JM, Fabbri N, Ubieto JM, Feo CV, Pesce A, Rosetzka K, Arroyo A, Kocián P, Sánchez-Guillén L, Bellosta AP, Whitley A, Enguita AB, Teresa-Fernández M, Bitsianis S, Symeonidis S. Improving Perioperative Care in Gastric Surgery: Insights from the EUropean PErioperative MEDical Networking (EUPEMEN) Project. **J Clin Med**. 2025 Mar 19;14(6):2108. doi: 10.3390/jcm14062108. PMID: 40142917; PMCID: PMC11942800.

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

Head of Department: **prof. MUDr. Robert Lischke, Ph.D.**

Deputy Head of Department: **MUDr. Jiří Tvrdoň**

Head Nurse: **Mgr. Ida Šmolíková**

Basic description:

The 3rd Department of Surgery is the largest thoracic surgery centre in the Czech Republic, providing comprehensive care across the full spectrum of thoracic surgery, including surgery of the lungs, trachea and airways, chest wall and chest wall deformities, oesophagus (the largest oesophageal surgery centre in the Czech Republic), mediastinum, myasthenia gravis and diaphragm. The department is the only centre in the Czech Republic performing lung transplants. Since 2018, it has also provided lung transplantation services for the Slovak Republic.

It is the only centre accredited for Level II thoracic surgery training.

The department also provides the full spectrum of abdominal surgery, including surgery for gastro-oesophageal reflux disease, diaphragmatic hernias, oesophageal achalasia, surgery of the stomach and small intestine, liver, biliary tract and pancreas, colorectal surgery, hernia surgery, minimally invasive laparoscopic and robotic procedures, thoracic and abdominal trauma surgery, and endocrine surgery. The department is the largest centre in the Czech Republic specialising in the treatment of patients with soft tissue sarcomas.

International relations:

- Ongoing scientific and clinical collaboration with the Department of Chronic Diseases and Metabolism, Laboratory of Respiratory Diseases and Thoracic Surgery (BREATHE), KU Leuven, Leuven, Belgium, and the Department of Thoracic Surgery, University Hospitals Leuven, Leuven, Belgium
- Ongoing clinical collaboration with AKH Wien – prof. Walter Klepetko
- Since 2025, the department has participated in a new international multicentre academic project in thoracic surgery and oncology focused on investigating the genetic background of lung cancer with KRAS G12C mutation using

single-cell technologies. The project is currently in the data collection phase and is coordinated by the University Hospital of Cologne, Cologne, Germany.

- In 2016, the collection and storage of samples obtained during acute and protocol transbronchial biopsies in patients following lung transplantation was initiated. The material is stored for subsequent analysis of gene expression profiles. The aim is to identify genetic predictors of individual phenotypes of chronic lung allograft dysfunction. To date, 1,157 TBB samples and 650 3BMB samples have been cryopreserved. Since 2024, BAL samples have also been stored (200 samples). This has enabled continued participation in an international study led by the University of Alberta, Canada, which developed a new diagnostic system known as the Molecular Microscope, enabling gene expression-based interpretation of transbronchial biopsies in lung transplant recipients. In 2020, the study was expanded to include bronchial mucosal biopsy, which is considerably safer than lung tissue biopsy. A total of 400 TBB and 230 3BMB samples have undergone MMDx analysis. In 2024, the study was further expanded to include simultaneous measurement of circulating donor-derived cell-free DNA together with molecular microscope analysis of graft tissue.

Participation of undergraduate and postgraduate students in scientific conferences:

- MUDr. René Novysedlák, Ph.D.
active participation:
 - 45th Annual Meeting & Scientific Sessions of the ISHLT, Boston, MA, USA
 - 33rd European Conference on General Thoracic Surgery (ESTS), Budapest, Hungary
- MUDr. Sylvia Jaroščiaková
active participation:
 - 5/2025 European Society of Digestive Endoscopy (ESDE) 2025
 - 5/2025 National Surgical Congress
 - 6/2025 African Initiative Against Oesophageal Cancer (AFROC) - online lecture
- MUDr. Jakub Woleský
active participation:
 - 5/2025 National Surgical Congress 2025 - poster presentation: Double tract – the correct approach for proximal gastrectomy
 - 10/2025 Prague Autumn Gastroenterology Days 2025 - lecture: Oesophageal perforation and insufficiency of the oesophagogastric anastomosis

Teaching:

- Teaching is provided for 3rd- and 6th-year medical students, 4th-year dentistry students, and 2nd-year bachelor's degree students in both full-time and combined forms of study. The department also provides surgical teaching for international students, including those studying dentistry.

New methods and procedures:

- Preparation and implementation of the Ex vivo lung perfusion and lung reconditioning programme, a method aimed at increasing the number of suitable grafts for lung transplantation

- Lung transplantation programme using DCD donors (donation after circulatory death)
- Heart-lung transplantation programme in cooperation with IKEM
- Introduction of endoscopic implantation of absorbable airway stents
- Robotic surgery of the lungs, thymus, pancreas and oesophagus – the only centre in the Czech Republic performing these procedures – as well as robotic surgery of the colon and rectum
- Introduction of minimally invasive laparoscopic diaphragmatic neurostimulation in cooperation with the Spinal Unit of Motol University Hospital

Unique equipment:

- ECMO and Ex vivo lung perfusion systems
- da Vinci robotic system
- Dissection and electrocoagulation technologies, including harmonic scalpel and LigaSure systems, used in conventional, laparoscopic and robotic surgery
- 3D instrumentation for laparoscopic and video-assisted thoracic surgery
- ICG laparoscopy tower
- Neuromonitoring during endocrine surgical procedures

Significant events in 2025:

- Scientia Foundation Fund Award – 1st prize in the postgraduate student category for 2024, presented in 2025
MUDr. René Novysedlák, Ph.D. Award for the Best Scientific Work of Students
1st Faculty of Medicine, Charles University – presented in 2025

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

*Head of Department: **prof. MUDr. Petr Ošťádal, Ph.D.***

*Deputy Head of Department: **MUDr. Jiří Vejvoda, MHA***

*Head Nurse: **Mgr. Jana Kovalčíková***

Basic description:

The Department of Cardiology is part of Motol's Comprehensive Adult Cardiovascular Centre and provides highly specialised therapeutic and preventive care to inpatients and outpatients with cardiovascular disease. In providing this comprehensive care, the Department of Cardiology works closely with the Department of Cardiovascular Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital, as well as with other departments of Motol University Hospital, particularly the Children's Heart Centre, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and the Department of Anaesthesiology, Resuscitation and Intensive Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital.

In 2025, there were 26,625 outpatient visits, 58,315 outpatient procedures were performed and 4,699 patients were hospitalised. In the Interventional Cardiology Unit, 3,398 catheterisation procedures were performed, including 683 percutaneous coronary interventions, 460 peripheral arterial catheterisation procedures, 127

transcatheter aortic valve implantations (TAVI), 23 transcatheter mitral valve repairs using MitraClip, five transcatheter tricuspid valve repairs using TriClip and 11 catheter-based interventions for pulmonary embolism. A total of 1,255 arrhythmia interventions were performed, including 584 catheter ablations for arrhythmias, 162 ICD implantations, 11 subcutaneous ICD implantations, 18 extractions of cardiac implantable electronic devices, 388 implantations of permanent pacemakers and loop recorders, and 24 implantations of leadless pacemakers. Increases were recorded in outpatient and inpatient procedures and in most catheter-based interventions, with particularly marked growth in arrhythmia procedures. At the same time, the number of patients referred from the Department of Cardiology for cardiac surgery also increased significantly. In 2025, a total of 602 heart valve interventions were performed at Motol's Comprehensive Cardiovascular Centre, one of the best results in the Czech Republic.

Specialised outpatient units:

- Adult Congenital Heart Disease Centre (new)
- Infective Endocarditis Centre (new)
- Valvular Heart Disease Centre
- Cardiomyopathy Centre
- Heart Failure Outpatient Unit
- Clinical Cardiology Outpatient Unit
- Arrhythmia Outpatient Unit
- Angiology Outpatient Unit
- Lipidology Outpatient Unit

New methods and procedures:

- Mechanical circulatory support for critical circulatory failure –synchronised pulsatile extracorporeal membrane oxygenation (i-cor) and percutaneous mechanical left ventricular support (Impella CP, Impella 5.5)
- Transcatheter tricuspid valve repair using TriClip
- Expansion of structural heart interventions
- Catheter-based treatment of pulmonary embolism
- Coronary interventions
- Assessment of coronary blood flow and coronary microcirculation
- Pulsed field ablation for atrial fibrillation (Farapulse)
- Leadless cardiac pacing
- Physiological pacing methods
- Subcutaneous cardioverter-defibrillator implantation
- Endovascular temperature management
- New 3D electroanatomical mapping methods
- Protocol for the diagnosis and treatment of cardiogenic shock

Unique equipment:

- Synchronised pulsatile extracorporeal membrane oxygenation (i-cor)
- Percutaneous mechanical left ventricular support systems (Impella CP and Impella 5.5)
- CARTO and EnSite Precision systems for 3D electroanatomical mapping
- HemoSphere and Masimo systems for advanced haemodynamic monitoring – one of the first departments in the Czech Republic to use them

Significant events in 2025:

- MUDr. Petr Kala, Ph.D., together with a team of co-authors, won 1st place for the best oral medical presentation at the 23rd Conference of the Acute Cardiology Association of the Czech Society of Cardiology 2025.
- We initiated the national CoroPhys-CZECH registry for comprehensive functional testing.
- We established international cooperation with the COVADIS group, which defines diagnostic and therapeutic standards for coronary vasomotor disorders, and actively participated in the COVADIS meeting in Madrid.
- We established cooperation with the international patient organisation INOCA International on the translation of educational materials into Czech.
- Under the leadership of Mgr. Jana Kovalčíková, Head Nurse of the Department of Cardiology and Chair of the Working Group of Cardiac Nurses and Allied Professionals of the Czech Society of Cardiology, the 18th Listopadka educational and professional conference was held on the topic of Multidisciplinary Care in Cardiology.
- We organised the first workshop on comprehensive functional testing in the Czech Republic.
- We organised another edition of the one-day conference “New Trends in Cardiovascular Medicine” attended by 280 participants.
- We organised another edition of the interactive seminar “Valvular Heart Disease: How to Approach It?” attended by 80 participants.
- Prof. P. Ošťádal contributed to the preparation of the European Society of Cardiology guidelines: 2025 Focused Update of the 2019 ESC/EAS Guidelines for the management of dyslipidaemias.
- Prof. P. Ošťádal received the Jawahar (Jay) Mehta Annual Award for Clinical Scientists from the International Academy of Cardiovascular Sciences.
- Prof. P. Ošťádal received the Lifetime Achievement Award in Cardiovascular Science, Medicine and Surgery from the International Academy of Cardiovascular Sciences.

Publications:

21 articles with an IF:

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- Hüttl M, Miklovič M, Gawrys O, Molnár M, Škaroupková P, Vaňourková Z, Kikerlová S, Malínská H, Kala P, Honetschlägerová Z, Sadowski J, Hošková L, Sandner P, Melenovský V, Táborský M, Šnorek M, Červenka L. The treatment with soluble guanylate cyclase stimulator BAY41-8543 prevents malignant hypertension and associated organ damage. *J Hypertens*. 2025 Jun 1;43(6):1030-1041. doi: 10.1097/HJH.0000000000004009. Epub 2025 Apr 8. PMID: 40197357; PMCID: PMC12052048. IF 4,2; Q1
- Maron BJ, Rowin EJ, Bonaventura J, Basso C, Corrado D, Thiene G, Churchwell AL, Basilico F, Thompson PD, Nishimura RA, Estes NAM. Commentary: Sudden death in competitive student-athletes with hypertrophic cardiomyopathy at a crossroads: Critical views on liberalizing return-to-play eligibility. *Heart Rhythm*. 2025 Jun 19:S1547-5271(25)02560-3. doi: 10.1016/j.hrthm.2025.06.014. Epub ahead of print. PMID: 40543859. IF 5,8; Q1
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- Brida M, Lebid IH, Prokselj K, Pavsic N, Antonova P, Komar M, Tomkiewicz-Pajak L, Kecskemeti D, Balint HO, Kostovska ES, Sesoska HC, Zebrasukiene D, Gumbiene L, Streng A, Paeglite-Pulke S, Valkovicova T, Simkova I, Kratunkov P, Tagen R, Panfile E, Kovačević-Preradović T, de Rosa S, Gatzoulis MA. Adult Congenital Heart Disease patients understanding of their condition in Central and South-Eastern Europe: Current status and opportunity for addressing shortfalls and for better care. Eur J Prev Cardiol. 2025 Apr 16:zwaf207. doi: 10.1093/eurjpc/zwaf207. Epub ahead of print. PMID: 40238958. IF 7,5; Q1

Department of Infectious Diseases and Travel Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head of Department: **MUDr. Milan Trojánek, Ph.D.**

Deputy Head of Department: **MUDr. Martin Tulach**

Head Nurse: **Mgr. Milena Chybová**

Basic description:

The Department of Infectious Diseases and Travel Medicine provides comprehensive therapeutic, preventive and diagnostic care in the field of infectious diseases and travel medicine. It provides acute and specialised outpatient care across the full spectrum of infectious diseases, with the exception of HIV-related care, and has 23 inpatient beds for adult patients with communicable, complicated or difficult-to-treat infections. The department has long played an important role in consultation services within Motol University Hospital, particularly for patients with severe infections, infectious complications, or febrile and inflammatory conditions of unclear aetiology. Consultation services are one of the department's core activities

and reflect the growing need for multidisciplinary cooperation in the care of patients with multiple comorbidities.

Areas of expertise and collaboration:

The department's clinical focus reflects a modern approach to infectious diseases inspired by practice at leading international centres, with an emphasis on developing outpatient care, systematic consultation services and the consistent application of rational antibiotic therapy. Care is provided in close interdisciplinary cooperation with the clinical departments of Motol University Hospital and the Institute of Medical Microbiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital. The department is actively involved in Motol University Hospital's antimicrobial stewardship programme and participates in the development and implementation of local clinical guidelines. Its main areas of expertise include rational antibiotic therapy for community-acquired and healthcare-associated infections, management of infections in high-risk patient groups, including immunocompromised and transplant patients, infective endocarditis, travel medicine and the diagnosis of imported infections, febrile and inflammatory conditions of unclear aetiology, respiratory infections including pneumonia and post-infectious complications, bone, joint and spinal infections, viral hepatitis, Lyme borreliosis and other zoonoses.

Number of hospitalised patients in 2025: **716**

Number of outpatient examinations in 2025: **17,529**

Number of unique patients in 2025: **7547**

Specialised centres:

The department includes specialised centres comprising a vaccination centre, a travel medicine centre, a centre for the treatment of infections in people who inject drugs, and a centre for the treatment of chronic hepatitis. These centres provide highly specialised, targeted care for selected patient groups.

Teaching and research activities:

The department systematically participates in undergraduate teaching for students in bachelor's and master's degree programmes at the 2nd Faculty of Medicine, Charles University, and is also an accredited teaching centre of the Institute for Postgraduate Medical Education. Teaching activities include bedside teaching as well as specialised seminars and courses focused on modern infectious diseases and travel medicine.

The department is actively involved in research in cooperation with laboratory and clinical disciplines at Motol University Hospital and other partner institutions. Research focuses mainly on travel medicine and imported infections, vaccinology, infections in people who inject drugs, infections in high-risk patients, respiratory infections, particularly those caused by *S. pyogenes* and *M. pneumoniae*, and the epidemiology of infectious diseases.

New methods and procedures:

- Multidisciplinary team for fever and inflammation of unknown origin
- Multidisciplinary team for the diagnosis and treatment of spondylodiscitis
- Participation in the lung transplantation programme through outpatient services and the vaccination centre

- Management programme for staphylococcal bacteraemia in adult patients, including mandatory infectious diseases consultations and standardised care management
- Programme to expand infectious diseases consultation services, including regular participation in major ward rounds at selected departments
- Expansion of POCT methods, including testing of innovative inflammatory biomarkers

Active participation in international conferences (lectures):

- Trojanek M., Grebenyuk V., Jegorova V., Hubacek P., Briksi A., Havlova J., Dundrova K., Kolarik L., Zicklerova I., Richterova L., Beranek O., Ernestova T., Kohout L., Meseznikov G., Nycova A., Pisova B., Sindlerova R., Tulach M., Uhrikova Z., Vidlicka M., Stefan M., Stejskal F. Travel-associated infections and diseases: a retrospective cross-sectional study. ESCMID Global, 2025, Wien, Austria
- Beranek O., Uhrikova Z., Illner J., Lehnert P., Bukovska P., Stefan M., Jegorova V., Ernestova T., Kohout L., Meseznikov G., Nycova A., Sindlerova R., Tulach M., Vidlicka M., Grebenyuk V., Prusa R., Trojanek M. Diagnostic utility of MxA and MxA/CRP ratio in differentiating viral and bacterial infections: a prospective cohort study. ESCMID Global, 2025, Wien, Austria

Significant events in 2025:

- The department joined the prestigious international travel medicine networks GeoSentinel (CDC, USA), EuroTravNet and TropNet, including active participation in the GeoSentinel International Cooperation Coordination Committee, significantly strengthening the department's international visibility.
- A representative of the department was nominated to the European working group for the development of shared travel medicine guidelines (iECTM, Basel, Switzerland) and became involved in the preparation of European consensus recommendations.
- Professional cooperation was established with the Department of Infectious Diseases at University Hospital Regensburg, focusing on clinical and research collaboration in infectious diseases.
- An AZV grant was obtained in cooperation with the Institute of Medical Microbiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and the Department of Infectious Diseases, 2nd Faculty of Medicine, Charles University and Bulovka University Hospital, focused on the surveillance of imported infections (NW26-05-00039).

Key plans for the following year:

- Further development of research collaboration in travel medicine, particularly the introduction of molecular epidemiology methods for the most important tropical and imported infections in cooperation with the Institute of Medical Microbiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, with the aim of strengthening capacity for surveillance, pathogen genotyping and participation in international research projects
- Expansion of educational activities in infectious diseases and travel medicine, including a systematic programme of professional webinars, an elective

course for young infectious diseases specialists, and further support for continuing medical education across specialties

- Further strengthening of international cooperation through the organisation of short- and long-term placements for international physicians at the department and active involvement in international professional networks and educational initiatives

Publications:

- Stefan M, Brajerova M, Prasad S, Bebrova E, Berousek J, Pozniak J, Jarosciakova S, Rennerova A, Milota T, Nyc O, Drevinek P, Krutova M, Trojanek M. Recurrence following invasive GAS infections in adults: triumph of virulence or failure of immunity? *Virulence*. 2025;16(1):2563765. doi:10.1080/21505594.2025.2563765. IF=5,4
- Stefan M, Prasad S, Vitkova I, Nycova E, Ryskova L, Kucova P, Geigerova L, Vesela D, Balejova M, Bartonikova N, Havlinova L, Czyzova E, Kubele J, Dratvova B, Antuskova M, Zikova J, Brajerova M, Nyc O, Trojanek M, Drevinek P, Krutova M. A post-COVID-19 upsurge in Group A Streptococcus in the Czech Republic was driven by emm1 and emm12 with shared virulence factors. *Journal of Infection and Public Health*. 2025;18(10):102886. doi:10.1016/j.jiph.2025.102886. IF=4,0
- Havlin J, Skotnicova A, Dvorackova E, Palavandishvili N, Smetanova J, Svorcova M, Vaculova M, Hubacek P, Fila L, Trojanek M, Lischke R, Milota T, Kalina T. Respiratory syncytial virus prefusion F3 vaccine in lung transplant recipients elicits CD4+ T cell response in all vaccinees. *American Journal of Transplantation*. 2025;25(7):1452–1460. doi:10.1016/j.ajt.2025.03.025. IF=8,2

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

Head of Department: MUDr. Štěpán Černý, CSc., MBA

Deputy Head for Vascular Surgery: MUDr. Radovan Fiala, Ph.D.

Deputy Head for Cardiac Surgery: MUDr. Aleš Klváček

Head Nurse: Mgr. Barbora Kolářová, MSc.

Basic description:

The Department of Cardiovascular Surgery provides comprehensive care in cardiac surgery and vascular surgery. It provides a continuous surgical emergency service for all urgent cardiovascular conditions, including trauma and surgery of the thoracic and abdominal aorta. The department includes an organ perfusion team, which provides extracorporeal circulation, including ECMO (extracorporeal membrane oxygenation), for the entire adult section of the hospital. The department has 52 beds in total, including 12 ICU beds for postoperative and critically ill patients, 10 intermediate care beds and 30 standard beds on two wards. The department operates four outpatient clinics.

In cardiac surgery, in addition to standard surgical treatment for ischaemic heart disease and valvular heart disease, the department has developed several highly specialised areas of expertise. In 2023, a robotic cardiac surgery programme was introduced, and we now offer a comprehensive robotic programme with a particular focus on intracardiac robotic procedures, especially mitral valve repair. In terms of the number of intracardiac robotic procedures, our department ranked third in Europe in 2025. We are also a European training centre for robotic cardiac surgery. Valve repair and valve-sparing surgery, involving both the mitral and aortic valves, are another of the department's specialisations. In cooperation with the Department of Cardiology, 2nd Faculty of Medicine, Charles University and Motol University

Hospital, and the Children's Heart Centre, 2nd Faculty of Medicine, Charles University and Motol University Hospital, we participate in the care of adult and adolescent patients with congenital heart disease. This care is organised within the **Adult Congenital Heart Disease Centre**. Our cooperation with the congenital cardiac surgery team at the Children's Heart Centre, 2nd Faculty of Medicine, Charles University and Motol University Hospital, is particularly exemplary and unique. Together, we run a programme for the treatment of aortic valve disease using the Ross procedure, performing the highest number of these operations in the Czech Republic. In cooperation with the Department of Cardiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the Department of Infectious Diseases and Travel Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and the Institute of Medical Microbiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, we are establishing a **Centre for the Care of Patients with Infective Endocarditis**, which provides comprehensive care for these very high-risk patients, with significant use of valve allograft transplantation. We are also continuing to develop the surgical treatment of thoracic aortic disease, including care for complex aortic arch findings and, in cooperation with the angiointerventional team of the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, care for patients with extensive thoracoabdominal aortic disease. Our cooperation with the 3rd Department of Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital, is also unique, particularly in the adult lung transplantation programme and in other complex intrathoracic procedures within the **Centre for Cardiovascular, Thoracoabdominal and Transplant Surgery**.

In vascular surgery, in addition to the full spectrum of vascular surgical procedures and endovascular arterial interventions, again in close cooperation with the angiointerventional team of the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the department is also developing a specialised programme for vascular graft transplantation in vascular reconstructive procedures and a hybrid revascularisation programme. It participates in the operation of the **Centre for Screening, Diagnosis, Follow-up and Surgical and Endovascular Treatment of Aortic Aneurysms**. As part of the **Stroke Centre**, the department works with the Department of Neurology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and provides surgical treatment of carotid artery disease. In cooperation with the 3rd Department of Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital, the Department of Urology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the Department of Paediatric Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the Department of Spinal Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital, and the orthopaedic departments, it provides onco-vascular care for patients with thoracic and abdominal tumours and soft tissue sarcomas. As part of its long-standing cooperation with the children's section of the hospital, including the Department of Paediatric Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the Department of Paediatric and Adult Orthopaedics and Traumatology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and the specialised paediatric vascular outpatient clinic operated under the auspices of the Children's Heart Centre, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the department guarantees consultation services, treatment and long-term follow-up for paediatric patients with congenital and acquired vascular

disorders. In cooperation with the Department of Transplantation and Tissue Bank and the Department of Paediatrics, 2nd Faculty of Medicine, Charles University and Motol University Hospital, we help provide the National Paediatric Kidney Transplantation Programme.

In 2025, a total of **1,284** cardiac and vascular surgery procedures were performed at the Department of Cardiovascular Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital, broken down as follows:

- **582 cardiac operations**, comprising:
 - o 153 isolated operations for ischaemic heart disease
 - o 356 operations for valvular heart disease, including multivalve and additional procedures
 - o 73 other cardiac operationsAs part of these procedures, the following were performed:
 - 80 operations for congenital heart disease in adult and adolescent patients
 - 17 Ross procedures in adult and adolescent patients
 - 71 left atrial appendage closures
 - 56 complex cryoablations for atrial arrhythmias
 - 83 aortic procedures, including 15 complete aortic arch replacements
 - 110 robotic cardiac operations
 - 10 surgical implantations of medium-term cardiac support using a microaxial pump
- **702 vascular operations:**
 - o 462 arterial reconstructions
 - o 172 operations for lower limb varicose veins
 - o 68 other procedures
- Surgeons and perfusionists participated in **71 lung transplantations**.
- The department's perfusion team provided a total of **652 extracorporeal support procedures:**
 - o 595 extracorporeal support procedures during operations in the operating theatre, including cardiac surgery and lung transplantation
 - o 57 extracorporeal support procedures within the ECMO programme of the adult section of Motol University Hospital

In the department's **outpatient service**, **5,311 patients** were treated.

Specialised outpatient units:

- Cardiology Outpatient Unit for Valvular Heart Disease
- Cardiology Assessment Outpatient Unit
- Vascular Outpatient Unit
- Paediatric Vascular Outpatient Unit, in cooperation with the Children's Heart Centre
- Dialysis AV Fistula Outpatient Unit
- Specialised Clinic for Thoracic and Abdominal Aortic Disease

New methods and procedures:

- Within robotic cardiac surgery:
 - We performed the first fully robotic beating-heart myocardial revascularisation in the Czech Republic. We are currently the only department in the Czech Republic, and the second in Europe, to offer and perform this operation.
 - We performed a total of 71 intracardiac robotic operations, placing us third in Europe in terms of the number of procedures.
- We joined the abdominal aortic aneurysm early detection programme.
- We resumed the programme of endoscopic vein harvesting for surgical myocardial revascularisation.
- We developed the mechanical circulatory support programme and launched a programme for preventive implantation of medium-term left ventricular support in high-risk patients.
- Together with the Children's Heart Centre, 2nd Faculty of Medicine, Charles University and Motol University Hospital, we performed 41 Ross procedures in 2025, the highest number in the Czech Republic.
- In cooperation with the angiointerventional team of the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, we are developing hybrid treatment of thoracoabdominal aortic disease.
- We are also further developing a comprehensive surgical programme for the treatment of valvular heart disease and aortic root disease.

Unique equipment:

- 3D endoscopic tower for thoracoscopic procedures
- ECMO devices – PLS and HLS systems enabling a continuous mechanical cardiac and/or pulmonary support service
- Device for medium-term left ventricular support using a microaxial pump
- Latest-generation echocardiography and vascular duplex ultrasound systems
- Equipment for ablation therapy of atrial fibrillation
- Device for measuring bypass graft blood flow and for intraoperative ultrasound examination of major arteries
- Medium-term mechanical left ventricular support

Significant events in 2025:

- We organised an accredited seminar for general practitioners entitled “Abdominal Aortic Aneurysm – Early Detection Programme”.
- We participated in the organisation and professional programme of the “New Trends in Cardiovascular Medicine” seminar.
- We organised the international “Peter's Robotic Masterclass” in robotic cardiac surgery, attended by cardiac surgeons from abroad.
- We co-organised and provided specialist input for a mitral valve repair workshop.
- We organised a seminar for young cardiologists and cardiac surgeons on congenital heart disease.
- Two physicians successfully completed their specialist training in vascular surgery.

- The Head of the Department, MUDr. Štěpán Černý, CSc., MBA, was re-elected to the committee of the Czech Society of Cardiovascular Surgery.
- We contributed to the preparation of seven specialist articles published in journals with an impact factor.

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

*Head of Department: **prof. MUDr. Petr Vlček, CSc., MHA***

*Deputy Head of Department: **MUDr. Kateřina Táborská***

*Head Nurse: **Ladislava Novotná***

Basic description:

The Department of Nuclear Medicine and Endocrinology is an interdisciplinary department of nuclear medicine and endocrinology which, in addition to standard radioisotope diagnostic methods, focuses on the diagnosis, treatment and long-term follow-up of differentiated thyroid carcinoma, severe forms of thyroid-associated orbitopathy, and ¹³¹I-MIBG therapy for patients from across the Czech Republic. The department is also a teaching centre accredited in endocrinology and diabetology and in nuclear medicine. The department is a centre for the treatment of thyroid-associated autoimmune orbitopathy using growth hormone inhibitors, for the diagnosis and treatment of advanced differentiated thyroid carcinoma using recombinant human TSH (Thyrogen), and for the treatment of neuroendocrine tumours using the radiopharmaceutical ¹³¹I-MIBG, as the only centre in the Czech Republic providing this treatment.

Specialised outpatient units:

- Endocrinology Outpatient Unit specialising in differentiated thyroid carcinoma, with more than 21,300 patients under long-term follow-up, representing one of the largest cohorts worldwide
- Thyroid Microcarcinoma Clinic (MDTC)
- Medullary Thyroid Carcinoma Clinic (MTC)
- Thyroid-Associated Orbitopathy Clinic (TAO)
- Nuclear Medicine Outpatient Unit

New methods and procedures:

- Diagnostic imaging using a hybrid method combining CT and isotope-based SPECT imaging
- Implementation of individual dosimetry in diagnostic and therapeutic protocols for paediatric and high-risk patients with advanced thyroid carcinoma
- In cooperation with the Department of Oncology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the department provides targeted therapy for radioiodine-refractory thyroid carcinoma
- Provision of genetic testing for patients with familial forms of medullary thyroid carcinoma and patients with papillary thyroid carcinoma, in cooperation with the Institute of Endocrinology in Prague
- In cooperation with the Department of Paediatric Haematology and Oncology of Motol University Hospital and Brno University Hospital, patients with

high-risk neuroblastoma are treated with combined ^{131}I -MIBG therapy according to the MATIN protocol with whole-body dosimetry

- In 2025, the 100th administration of the radiopharmaceutical Lutathera ^{177}Lu -DOTATATE (oxodotreotide) was performed for the treatment of inoperable or metastatic, progressive, well-differentiated (G1 and G2) gastroenteropancreatic neuroendocrine tumours (GEP-NETs) progressing during treatment with somatostatin analogues

Significant events in 2025:

Introduction of a new treatment method

- Introduction of the radiopharmaceutical Pluvicto (^{177}Lu -PSMA-617) as a standard component of treatment for patients with metastatic castration-resistant prostate cancer (mCRPC)
- Prof. P. Vlček is involved in the European Commission's international UNICOPS project, which focuses on a universal CBRNE protection system to support the security of public spaces at universities and to ensure preventive measures and terrorism risk mitigation at nuclear medicine departments.

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

Head of Department: **prof. MUDr. Jan Plzák, Ph.D.**

Deputy Head of Department: **MUDr. Jan Kluh**

Head Nurse: **Mgr. Jitka Hovorková**

Basic description:

The Department of Otorhinolaryngology and Head and Neck Surgery provides the full range of diagnostic and treatment services for ENT disorders. Surgery is performed across the full scope of the specialty, including the most highly specialised procedures, many of which are provided for patients from across the Czech Republic.

In 2025, a total of 2,673 surgical procedures were performed at the department.

Specialised outpatient units:

- Oncology Outpatient Unit
- Hearing Implant Surgery Outpatient Unit
- Rhinology Outpatient Unit
- Endocrine Surgery Outpatient Unit
- Otoneurology Outpatient Unit
- Hearing Correction Outpatient Unit – hearing aids
- Laryngology and Phonosurgery Outpatient Unit
- Voice Rehabilitation Outpatient Unit – voice prostheses
- Sleep Disorders and Snoring Outpatient Unit
- Ultrasound Outpatient Unit
- Salivary Gland Disease Outpatient Unit
- Swallowing Disorders Outpatient Unit

- Skull Base and Neurosurgical Outpatient Unit
- Phoniatrics Outpatient Unit

Specialised centres:

- Laser Surgery Centre
- Thyroid and Parathyroid Surgery Centre
- Cochlear Implantation Centre
- Head and Neck Oncological Surgery Centre
- Centre for Rehabilitation of Patients after Total Laryngectomy
- Electronic Hearing Implant Centre
- Salivary Gland Disease Centre
- Sleep-Related Breathing Disorders Centre
- Multidisciplinary Swallowing Disorders Centre
- Centre for Robot-Assisted Surgery in Head and Neck Oncology

New methods and procedures:

- Use of the Montgomery salivary bypass tube after resection and reconstructive procedures for head and neck cancer
- Vocal fold augmentation using Radiesse
- Treatment of patients with sleep apnoea using drug-induced sleep endoscopy (DISE)
- Endoscopic approaches to the removal of tumours of the internal auditory canal
- Intraoperative neuromonitoring
- Functional endoscopic evaluation of swallowing (FEES)
- Advanced navigated microsurgery for tumours of the paranasal sinuses and skull base
- Vestibular evoked myogenic potential (VEMP) testing in patients with balance disorders
- Endoscopic surgery for oesophageal diverticula
- Endoscopic diagnosis of tumours of the upper aerodigestive tract using NBI
- Endoscopic examination of the salivary glands and endoscopic treatment of sialolithiasis
- Use of the exoscope in posterior fossa surgery, phonosurgery and conventional otologic surgery
- Rehabilitation of patients after total laryngectomy using synthetic voice recordings, in cooperation with the Department of Cybernetics at the University of West Bohemia in Plzeň
- Introduction of robot-assisted surgery in the treatment of head and neck cancer

Unique equipment:

- CO₂ laser, Diox laser, thulium laser, argon plasma coagulation
- Harmonic scalpel, radiofrequency scalpel, shaver system
- Endoscopic equipment for minimally invasive thyroid surgery and surgery of the skull base and internal auditory canal
- Videostroboscopy, video ENG
- NBI for early tumour diagnosis

- Neuronavigation
- Salivary gland videoendoscopy
- Microdrill and laser for stapes surgery
- Interacoustics EyeSeeCam vHIT
- ICS Chartr 200 system enabling examination using both infrared goggles (VNG vestibulometry) and electrode recording of nystagmus (ENG vestibulometry)
- Surgical exoscope
- Robotic cochlear implantation surgery
- Motol University Hospital robotic technology for the treatment of head and neck tumours

Significant events in 2025:

The department organised or co-organised a number of events, with active participation by undergraduate and postgraduate students.

- **13–16 January 2025** – Temporal Bone Course
- **18–19 March 2025** – Head and Neck Ultrasound Course
- **3 April 2025** – Assessment and Rehabilitation Options for Patients with Dysphagia, including FEES (Fiberoptic Endoscopic Evaluation of Swallowing)
- **15 May 2025** – Septoplasty: Current Trends
- **30 May 2025** – Current Trends in the Diagnosis and Treatment of Obstructive Sleep Apnoea Syndrome
- **4–7 June 2025** – **UEP 2025** – 31st Congress of the Union of European Phoniaticians, jointly held with the 22nd Czech-Slovak Phoniatic Congress, the 35th Eva Sedláčková Days, the 86th Congress of the Czech Society of Otorhinolaryngology and Head and Neck Surgery, and the 71st Congress of the Slovak Society of Otorhinolaryngology and Head and Neck Surgery as the 11th Joint Czech-Slovak Congress
- **15–19 September 2025** – Balance Awareness Week
- **24–26 September 2025** – Conference of the Czech Cooperative Group for Head and Neck Cancer, Znojmo
- **2 October 2025** – Assessment and Rehabilitation Options for Patients with Dysphagia, including FEES
- **7–8 October 2025** – Head and Neck Ultrasound Course
- **23 October 2025** – Assessment and Rehabilitation Options for Patients with Dysphagia, including FEES
- **4–7 November 2025** – FESS (Functional Endoscopic Sinus Surgery) Course
- **6 November 2025** – ORL Vincentka Forum 2025
- **11–12 December 2025** – Narrow Band Imaging in the Diagnosis of Tumours of the Oral Cavity, Pharynx, and Larynx

Significant Public Outreach and Media Activities (including Social Media):

- **Prof. J. Bouček and Dr. P. Kalitová** – *Hearing Awareness Week* public awareness campaign (25 February – 3 March 2025), accompanied by numerous media appearances and outreach activities.
- **Assistant Professor Dr. Vladimír Koucký** – *Balance Awareness Week 2025* (15–19 September 2025).
- **Assistant Professor Dr. Vladimír Koucký** – Interview on **CNN Prima News**, *What About Your Health?* (*Co na to vaše zdraví?*), broadcast on 2 April 2025.

- Development and launch of the website for the **Adult Cochlear Implant Center** at the Department of Otorhinolaryngology and Head and Neck Surgery, First Faculty of Medicine, Charles University and Motol University Hospital: www.implantacnicentrum.cz.
- **Prof. J. Bouček** – Podcast introducing the **UEP 2025 Congress in Prague: Episode 7: Countdown to the UEP 2025 Congress in Prague | The UEP Voice Box**.

Active participation of undergraduate and postgraduate students in scientific conferences; student scientific publications in professional journals:

- Student Scientific Conference
- MUDr. Lenka Peterková
- Student Scientific Conference
6 May 2025, Prague – Delayed facial nerve palsy (poster presentation)

Significant Awards and Honors:

Assoc. Prof. Zdeněk Fík, MD, PhD – Appointed Associate Professor.

Completion of PhD studies:

- **Markéta Bonaventurová, MD, PhD**
- **Martin Kaňa, MD, PhD**

Pavol Jablonický, MD – Awarded Honorary Membership of the Czech Society of Otorhinolaryngology and Head and Neck Surgery of the Czech Medical Association J. E. Purkyně (ČSORLCHHK ČLS JEP).

Karolína Šebestová, MD – Czech ORL Academy 2025 Award for the presentation “*Proton Therapy for Salivary Gland Tumours*.”

Machaela Vojtová, MD – Czech ORL Academy 2025 Award for Best e-Poster: “*Surgical Treatment of Retrolingual Obstruction: RFITT vs. Hyoidopexy*.”

Viktor Semančík, MD – Best Presentation Award at the *Young Scientist Forum* during the International Conference of the Czech Cooperative Group for Head and Neck Cancer (Znojmo) for the presentation “*Polymethine Salts and Their Potential in Migrastatic Therapy of Head and Neck Squamous Cell Carcinoma*.”

Lucie Pavelková, MD – Second Prize of the Scientia Foundation Fund for the Best Scientific Work by Students of the First Faculty of Medicine, Charles University.

Jan Lazák, MD, PhD – Recipient of the Kutvirt Award of the journal *Otorhinolaryngology and Phoniatics* for the article “*Quality of Life in Patients after Vestibular Schwannoma Surgery*.” (*Acta Neurochirurgica*, 2024).

Prof. Jan Plzák, MD, PhD – Elected Honorary Member of the Romanian Rhinologic Society (2025).

Markéta Bonaventurová, MD – First Prize, e-Poster category, for “*Tracheoesophageal Voice Prosthesis Outcomes: Is There a Risk Factor for Complication and Satisfactory Phonation?*” at the **31st Congress of the Union of European Phoniaticians**, Prague, June 2025.

Publications:

- Balatkova Z., Svobodová V., Bonaventurová M., et. Al., Vestibular profile of patients with hearing loss caused by pathogenic variants of the STRC gene, accepted v Otolology and Otoneurology
- SYDING, Linn A; PLAČKOVÁ, Klára; PAVELKOVÁ, Lucie; AQUINO-PEREZ, Cecilia; SANTEGOETS, Saskia J et al. High Treg and PMN-MDSC densities are a hallmark of tertiary lymphoid structures in fatal cases of cervical cancer. Online. Journal for ImmunoTherapy of Cancer. 2025, vol. 13, no. 9, s. e012613. ISSN 2051-1426. Dostupné z: <https://doi.org/10.1136/jitc-2025-012613>. IF 10,6, Q1 – JCR 2023; Q1 – Scimago 2023
- Peterková L, Tesařová M, Sukupová A, Michalus I, Cejnar P, Fík Z, Šantrůček J, Kašička V, Hynek R. Direct In-Bone Protein Digestion With Subsequent LC Separation and Trap Ion Mobility MS Detection of Released Peptides as an Effective Tool for the Proteomic Characterization of Bone Tissues. J Sep Sci. 2025 Sep;48(9):e70277. doi:10.1002/jssc.70277. PMID:40965984.
- Bonaventurová M, Balatková Z, Červený K, Černý R, Bandúrová V, Koucký V, Peterková L, Fík Z, Komarc M, Mrázková E, Plzák J, Čada Z. The comparison between intratympanic gentamicin prehabilitation and postoperative virtual reality exposure to standard vestibular training in patients with vestibular schwannoma. Eur Arch Otorhinolaryngol. 2025 Jan;282(1):79-89. doi: 10.1007/s00405-024-08891-8. Epub 2024 Aug 10. PMID: 39127800; PMCID: PMC11735475. IF 2.2
- Linn A Syding 1 , Klára Plačková 1 2 3 , Lucie Pavelková 1 2 3 , Cecilia Aquino-Perez 1 , Saskia J Santegoets 4 , Jan Laco 5 , Marek Grega 6 , Pavel Dundr 7 , Kristýna Němejcová 7 , Miroslav Hodek 8 , Jan Bouček 2 , Michal Záborský 2 , Hana Vošmiková 5 , Michael J Halaška 9 , Lukáš Rob 9 , Petr Čelakovský 10 , Viktor Chrobok 10 , Munachiso Ndukwe Iheme 11 , Ivan Práznovec 11 , Milan Vošmik 8 , Stanislav Katina 1 12 , David Cibula 13 , Aleš Ryška 5 , Sjoerd H van der Burg 4 , Radek Špišek 1 , Anna Fialová, High Treg and PMN-MDSC densities are a hallmark of tertiary lymphoid structures in fatal cases of cervical cancer; J Immunother Cancer, . 2025 Sep 25;13(9):e012613. doi: 10.1136/jitc-2025-012613. IF - 10,6; Q1
- Peterková L, Tesařová M, Sukupová A, Michalus I, Cejnar P, Fík Z, Šantrůček J, Kašička V, Hynek R. Direct In-Bone Protein Digestion With Subsequent LC Separation and Trap Ion Mobility MS Detection of Released Peptides as an Effective Tool for the Proteomic Characterization of Bone Tissues. J Sep Sci. 2025 Sep;48(9):e70277. doi: 10.1002/jssc.70277. PMID: 40965984; PMCID: PMC12445404, IF- 2,8, Q2
- Kaňa M, Braunová A, Starenko D, et al. Overcoming P-glycoprotein-mediated multidrug resistance in cancer cells through micelle-forming PHPMA-b-PPO diblock copolymers for doxorubicin delivery. J Control Release. 2025;381:113645. (IF 11.5), Q1, D1
- Kaňa M, Plzák J, Záborský M, Bouček J. Applications of fluorescence-guided surgery in head and neck surgery. Otorhinolaryngol Foniatr, 2025. Accepted - bez IF
- Povýšil C, Kaňa R, Horák M, Kaňa M. Properties and Functions of Myochondrocytes and Myochondroblasts in Different Human Cartilage Tissues—An Overview. Cells. 2025;14(19):1504. <https://doi.org/10.3390/cells14191504> (IF 5.2)
- Koucký V, Jirkovská M, Vlasák A, Kinštová L, Lazák J, Zveřina E, Betka J, Petrák B, Tesner P, Vyhnálková E, Fík Z. Efficacy of first line of bevacizumab in patients with neurofibromatosis 2-related vestibular schwannomas. Eur Arch Otorhinolaryngol. 2025 Nov;282(11):5947-5953. doi: 10.1007/s00405-025-09734-w. Epub 2025 Oct 6. PMID: 41053457, Publikace s IF (2.2)

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

Head of Department: **prof. MUDr. Jan Štulík, CSc.**

Deputy Head of Department: **MUDr. Jan Kryl**

Head Nurse: **Bc. Lenka Šipulová**

Basic description:

The Department of Spinal Surgery is a specialised department with nationwide coverage, providing treatment for spinal injuries and disorders, including their sequelae, in children and adults. These include acute spinal fractures and their

consequences, primary and secondary tumours, degenerative conditions, inflammatory diseases, and congenital and acquired deformities. In 2025, **1,563** patients underwent surgery, **1,596** patients were hospitalised, **15,076** patients were treated in the Spinal Surgery Outpatient Unit and **1,304** patients were treated at the Centre for Conservative Therapy.

Specialised outpatient units / clinics / centres / department-specific services:

- Outpatient Unit for Spinal Injuries and Disorders
- Paediatric Scoliosis Clinic
- Centre for Conservative Therapy
- Highly Specialised Spinal Surgery Care Centre

Unique equipment / New methods and procedures:

- En bloc resection of spinal tumours
- 3D printing
- AEOS exoscope
- EOS whole-body imaging

Significant events in 2025:

- 28th National Congress of the Czech Society for Orthopaedics and Traumatology 2025
- 6th May Spinal Surgery Symposium, Prague
- 23rd Congress of the Czech Spine Surgery Society 2025
- 20th Oncology Congress in Znojmo
- 5th National Spinal Oncology Symposium, Brno: “Tumours and Metastatic Disease of the Spine”
- EUROSPINE 2025
- Two physicians from the department obtained a Ph.D. degree

Department of Long-term Treatment – Aftercare Centre

*Head of Department: **MUDr. Martina Nováková, Ph.D.** (from 1 September 2025)*

*Senior Doctor: **MUDr. Martina Nováková, Ph.D.** (until 31 August 2025)*

*Senior Doctor: **MUDr. Monika Pražmová** (from 1 September 2025)*

*Head Nurse: **Mgr. Lucie Kubová***

Basic description:

The Department of Long-term Treatment – Aftercare Centre (CNP) specialises in geriatric care and in aftercare for patients following trauma, surgery, prolonged internal medical conditions, stroke and similar conditions, without age restriction.

The department includes an admissions clinic and a geriatrics clinic.

We specialise in wound healing, nutrition, physiotherapy and occupational therapy. Two of our ward sisters are members of the Motol-wide wound healing team.

In addition to medical and nursing care, patients have access to a clinical psychologist, psychiatrist, speech and language therapist, urologist, 10 physiotherapists and four healthcare social workers. We work closely with clinical pharmacists, who regularly attend major ward rounds and provide ongoing consultation services.

Number of beds: 165, reduced due to ongoing renovation work

Total number of admitted patients in 2025: 569

Number of procedures in the geriatrics outpatient unit: 447

Physiotherapy is provided individually and in groups using modern methods such as electrotherapy, magnetotherapy, ultrasound and Biopton light therapy. We cooperate with the Volunteer Centre, which organises educational and recreational programmes for patients, including art workshops, singing, theatre performances, memory training and canine-assisted therapy. The CNP also includes a patient library and a separate room where religious services are held once a month. The department has Level I accreditation for teaching geriatrics and participates in postgraduate training for physicians in geriatrics. It also contributes to undergraduate teaching in internal medicine and to bachelor's degree programmes for nurses and physiotherapists at the 2nd Faculty of Medicine, Charles University. The CNP also provides training courses for orderlies, students of social care and massage therapists. We also cooperate with the Czech Technical University in the training of paramedics. In 2025, close cooperation continued with the palliative care consultation team for the adult section of Motol University Hospital (KTPP).

Specialised outpatient units:

- Geriatrics Outpatient Unit

Unique equipment:

- 10 hydraulic hoists for immobile patients
- 10 Calypso hydraulic reclining chairs
- 10 hydraulic baths for immobile patients
- 2 professional resistance-training machines for the prevention and treatment of sarcopenia
- Combined electrotherapy and magnetotherapy equipment
- Siemens ultrasound system with colour Doppler and probes for abdominal ultrasound and vascular duplex ultrasound
- Tablet with specialised speech and language therapy programmes (Afaslovník, GoTalk, Grid Player)

New methods and procedures:

Close cooperation with the Department of Geriatric Internal Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital, continues. We have access to all equipment at that department, including an ultrasound system used for sonographic, echocardiographic and vascular examinations, including duplex ultrasound, continuous glucose monitoring using the FreeStyle Libre system, spiroergometry, audiometry, blood pressure Holter monitoring, and the InBody device for detecting sarcopenia. The option of using acute geriatric beds in the event of deterioration in a patient's condition, the need to administer blood derivatives and similar situations has also significantly improved patient comfort.

The complete reconstruction of the Department of Long-term Treatment – Aftercare Centre continued throughout 2025, and the reduction in bed numbers therefore remained in place. This naturally led to longer waiting times for transfers of patients from acute beds, a lower number of admitted patients and a longer average hospital stay.

Two inpatient wards of the Department of Long-term Treatment – Aftercare Centre remain located in the main building of the adult section.

Despite the difficult and unsuitable conditions caused by renovation work taking place during full operation, we succeeded in maintaining a high standard of patient care, as demonstrated, among other things, by the very low number of complaints submitted about our department.

Significant events in 2025:

- Our department was selected by the evaluation committee and board of trustees of the Abakus Foundation Fund to participate in the two-year Support for Palliative Care in Aftercare and Long-term Care Settings programme. For this purpose, funding of CZK 750,000 was awarded for 2026-2027.
- As part of postgraduate training within our medical team, two physicians obtained specialist competence in geriatrics in 2025 by passing the board certification examination.

Publications and presentations:

- **ŠUBLADZE, Chatuna; KLÁN, Jan; TOPINKOVÁ, Eva; RICHTER, Tomáš a NOVÁKOVÁ, Martina.** Akutní virová myokarditida u pacientky po prodělané infekci parvovirem B-19. *Geriatric a gerontologie*, 2025, roč. 14, č. 2, s. 89-95. ISSN: 1805-4684. DOI: <https://doi.org/10.61568/geri/50-6499/20250512/140523>.
- **NOVÁKOVÁ, Martina; KVAPIL, Milan.** **Nádorová onemocnění a diabetes mellitus.** *Acta Medicinæ*. 2025, 14(1-2), 70-72. ISSN 1805-398X.
- **NOVÁKOVÁ, Martina; HOLMEROVÁ, Iva; KVAPIL, Milan.** **Kvalita života ve stáří, sebepéče.** *Medicina pro praxi*. 2025, 22(1), E10-E13. ISSN 1214-8687. DOI: 10.36290/med.2025.004.
- KVAPIL, Milan; **NOVÁKOVÁ, Martina; POLANECKÁ, Daniela.** **Geriatrická interní klinika 2. LF UK a FN v Motole v novém hávu.** *Acta Medicinæ*. 2025, 14(1-2), 94-95. ISSN 1805-398X.
- **NOVÁKOVÁ, Martina, Bartova A, Steffl M, Holmerova I.** Workload and role differentiation in medical long-term care and nursing homes: implications for professional care team well-being in dementia care. *Contemp Nurse*. 2025 Nov 12:1-15. doi: 10.1080/10376178.2025.2586195

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

Head of Department: **prof. MUDr. Petr Marusič, Ph.D.**

Deputy Head of Department: **doc. MUDr. Aleš Tomek, Ph.D., FESO**

Head Nurse: **Mgr. Tereza Koláčná**

Basic description:

The Department of Neurology provides comprehensive diagnostic and therapeutic care for patients with diseases of the nervous system. Its main programmes, developed to the highest standard in the Czech Republic, are the cognitive, epilepsy, neuro-otology, neuromuscular, neuroimmunology and neurovascular programmes. Besides caring for patients from the region, the department selectively provides highly specialised consultation care for patients from across the Czech Republic. **In 2025, more than 40,000 patients were treated on an outpatient basis at the department. A total of 2,408 patients were hospitalised.**

Highly specialised care centres accredited by the Ministry of Health of the Czech Republic:

- Highly Specialised Cerebrovascular Care Centre
- Highly Specialised Care Centre for Drug-Resistant Epilepsies
- Highly Specialised Care Centre for Patients with Multiple Sclerosis and Related Disorders of the Central Nervous System

European Reference Network Centres for Rare Diseases (ERN):

- ERN EpiCARE – European Reference Network for Rare and Complex Epilepsies
 - European Reference Network for Rare and Complex Epilepsies
- European Reference Network for Rare Neurological Diseases – ataxias
- ERN-RND – European Reference Network for Rare Neurological Diseases – frontotemporal dementia
- ERN EURO-NMD – European Reference Network for Rare Neuromuscular Diseases
 - European Reference Network for Rare Neuromuscular Diseases
- VASCERN – NEUROVASC – CADASIL and Moyamoya, developing partner

Specialised centres accredited by professional societies:

- Cognitive Centre
- Neuromuscular Centre
- Centre for Parkinson's Disease and Other Extrapyrimal Disorders
- Hereditary Ataxia Centre
- Neuro-otology Centre
- Headache Centre

Specialised outpatient units:

- Neurocutaneous Disorders Clinic
- Vertebrogenic and Musculoskeletal Clinic

Innovative and unique methods and procedures:

- In cooperation with the Czech Academy of Sciences and the Czech Technical University, advanced EEG assessment is being carried out in the fields of intracranial EEG and high-density scalp EEG, together with the implementation of a protocol for examining and mapping cognitive functions using intracranial electrodes.
- The department is collaborating on the international E-PILEPSY project, which enabled the introduction of EEG source localisation methodology, or electrical source imaging, and neuroimaging post-processing, including advanced PET image processing and co-registration using 3D Slicer.
- As part of the longitudinal Czech Brain Ageing Study (CBAS), levels of homocysteine, oxidative stress markers and pathological proteins (TDP-43, phosphorylated tau and beta-amyloid) are analysed in both serum and cerebrospinal fluid. Genetic testing has been expanded to include determination of polymorphisms in TOMM, BDNF-Met and TDP-43.
- The expansion of the sample cohort from patients with limbic encephalitis continued, along with testing for neutralising antibodies in patients with multiple sclerosis.

- In multiple sclerosis, there has been a significant increase in the number of patients treated with disease-modifying therapies (DMTs), together with scientific analyses of these patients, including through registries.
- The Cognitive Centre has updated tests for the assessment of preclinical and prodromal Alzheimer's disease, including a new spatial cognition test battery using virtual reality.
- The CSF laboratory, in cooperation with the Institute of Immunology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, introduced a new immunoanalytical method for determining intrathecal synthesis of anti-GAD antibodies. The existing diagnostic panel for autoimmune encephalitis, including testing for antibodies against well-characterised onconeural antigens Hu, Yo, Ri, Ma2 (Ta), CV2 (CRMP5) and amphiphysin by Western blot with subsequent automated semiquantitative evaluation, and testing for antibodies against membrane and synaptic antigens (NMDAR, AMPA1R, AMPA2R, GABABR, CASPR2, LGI1) by indirect immunofluorescence on cells transfected with genes for the relevant antigens, has been expanded to include Zic4, Tr (DNER), SOX1 and Ma1.
- A unique method for the electrochemical fingerprinting of body fluids has been introduced in the laboratory differential diagnosis of neurodegenerative diseases.
- Endovascular treatment of acute ischaemic stroke is used as a routine treatment method in cooperation with the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital.
- The department continues to provide an inpatient rehabilitation method for patients with chronic vertigo and balance disorders that is unique in the Czech Republic. The method uses visual biofeedback with a force platform and tablet. The department participated in the development of this system.
- Examination of the otolith system using cervical vestibular evoked myogenic potentials and the introduction of pupillometry have expanded the diagnostic capabilities of the existing video-oculography (VOG) system.
- Peripheral small-fibre testing using thermal threshold measurement with a Peltier element.
- Introduction of unique neurophysiological diagnostics for small nerve fibre disorders (A δ and C fibres) in patients with peripheral and autonomic neuropathy. Introduction of neurophysiological tests, including spectral analysis in the frequency and time domains, in diabetic cardiac autonomic neuropathy.
- A new quantitative electromyography method for the diagnosis of myopathies, based on computer processing of the EMG signal, including power spectrum analysis, peak ratio and number of small segments. This method increases sensitivity from the original 64% to 91%.
- In 2025, the CADASIL Centre within the Cerebrovascular Clinic became a developing partner of ERN VASCERN.

Unique equipment:

- Simoa analyser – automated device for detecting immunological markers in cognitive and autoimmune brain disorders
- Augmented virtual reality laboratory
- 256-channel high-density EEG system

- ICS Impulse system by Otometrics for testing the function of individual semicircular canals
- Philips IntelliVue M3150 telemetry system with central monitoring for nine patients
- RIMED Intraview ultrasound system with helmet for long-term monitoring
- Three ultrasound systems for examination of transcranial and extracranial arteries and peripheral nerves
- 128-channel NicoletOne EEG system for video EEG monitoring
- NYDIAK rotational chair for electronystagmography (ENG) testing
- FAN Study system enabling comprehensive assessment of autonomic nervous system function, including tilt-table testing
- Somedic Thermotester, Sweden – electrodiagnostic device for assessing the function of small A delta and C fibres
- Somedic digital algometer, Sweden – electrodiagnostic device for research into deep neuropathic pain
- Experimental laboratory for the assessment of spatial memory and spatial orientation (Blue Arena)

Significant events in 2025:

- More than 50 specialist publications in international impact-factor journals
- Organisation and co-organisation of a number of national congresses and seminars, including Czech and Slovak neurology, cerebrovascular and epilepsy events

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

Head of Department: **prof. MUDr. Ivan Landor, CSc.**

Deputy Head of Department: **doc. MUDr. Petr Fulín, Ph.D., MBA**

Head Nurse: **Mgr. Hana Kárníková**

Basic description:

The 1st Department of Orthopaedics provides conservative and surgical care for adult patients across the full spectrum of orthopaedic procedures. It provides trauma care for the musculoskeletal system, with the exception of spinal surgery and paediatric orthopaedics. The department has 127 beds in total, including 18 ICU beds for aseptic orthopaedic and trauma patients and septic patients, 30 trauma beds and 19 septic beds.

In 2025, a total of 4,584 patients were hospitalised and 68,711 patients were treated on an outpatient basis, including 37,078 in the orthopaedic outpatient unit, 11,031 in the trauma outpatient unit and 20,602 in the Emergency Department trauma outpatient unit. A total of 4,534 operations were performed.

Specialised outpatient units / clinics / centres:

- Joint Replacement Clinic
- Large Joint Surgery Clinic
- Hand and Foot Surgery Clinic
- Shoulder, Wrist, Knee and Ankle Arthroscopy Clinic

- Sports Traumatology Clinic
- Septic Orthopaedics Clinic
- Rheumatoid Surgery Clinic
- Oncology Clinic
- General Traumatology Clinic

New methods and procedures:

- Research and development of new joint implants in cooperation with both Czech and international partners
- New techniques in wrist surgery
- New ankle replacement – new surgical technique
- Expansion of minimally invasive surgical techniques for the treatment of hallux valgus
- Laboratory alpha-defensin testing in the diagnosis of prosthetic joint infection
- Endoscopic medulloscopy in the treatment of chronic osteomyelitis
- Masquelet technique in the treatment of infected non-unions
- Negative pressure wound therapy for the treatment of infected wound defects
- Implantation of augment components in shoulder joint replacement to address bone defects

Significant events in 2025:

- Chlumský Award of the Czech Society for Orthopaedics and Traumatology for the best monograph of 2024 – Sosna A., Fulín P., Pokorný D., Vlček M. et al.: Fundamentals of Orthopaedics and Traumatology of the Musculoskeletal System (awarded in 2025)
- Zahradníček Award of the Czech Society for Orthopaedics and Traumatology for the best publication in Acta Chirurgiae Orthopaedicae et Traumatologiae Čechoslovaca for 2024 – Pokorný D., Fulín P., Šlouf M. et al.: Comparison of the Quality of the Most Commonly Used New UHMWPE Articular Inserts for Knee Replacement (awarded in 2025)
- Honorary Membership of the Czech Society for Orthopaedics and Traumatology – prof. MUDr. Ivan Landor, CSc.
- Jesenius Award for the physician with the greatest contribution to progress in medicine – prof. MUDr. David Jahoda, CSc.
- Bochdalek Award of the Czech Anatomical Society – MUDr. Michal Beneš

Publications:

- Total publications: **28** (with IF: 25, without IF:3)
- Total Impact Factor (IF): **57**
- **Q1: 9 , Q2: 8 , Q3: 3 , Q4: 5**
- International publications: 23
- Domestic publications: 5
- Monographs: 0
- Book chapters: 1
- Bartak, V., Jahoda, D., Benes, M., Judl, T., Mazura, M., & Fulin, P. (2025). Modular megaprotheses yield high any-type failure rate but acceptable infection control rate in patients with chronic hip and knee periprosthetic joint infection and severe bone loss: a single-center experience. Journal of Bone and Joint Infection, 10(6), 479-488.
 - o IF: 2,8 Q1

- Fulin, P., Pokorny, D., Grzelecki, D., Jonas, D., Jahoda, D., & Daniel, M. (2025). Patient preoperative positioning for THA affects postoperative acetabular cup angle and leg length discrepancy: a prospective case series. *Scientific Reports*, 15(1), 37073.
 - IF: 3,9 Q1
- Fulin, P., Gajdosova, V., Sloufova, I., Hodan, J., Pokorny, D., & Slouf, M. (2025). Comparison of various UHMWPE formulations from contemporary total knee replacements before and after accelerated aging. *Materials & Design*, 252, 113795.
 - IF: 7,9 Q1
- Daniel, M., Votava J., Bodnarova J., Kratochvil A., Sika Z., Pokorny D., Fulin P. (2025) Scapulohumeral rhythm preserves glenohumeral stability: Insights from a biomechanical simulation. *Biocybernetics and Biomedical Engineering*. 46 (1),33-39.
 - IF 6,6 Q1
- Horák, Z., Mazura, M., Báča, V., Vilimek, M., Salášek, M., Blanková, A., ... & Džupa, V. (2025). Clarifying the origin of the interpubic cavity using a biomechanical model and the finite element method. *Scientific Reports*, 15(1), 38336.
 - IF: 3,9, Q1
- Suh, G.A., Scobie, A., Piuizzi, N.C., Bartak, V., Anyaehie, U.E., Arciola, C.R., Batellier, C., Benes, M., Binlaksar, R., et al. (2025) 2025 ICM: Role of unconventional medications. *J. Arthroplasty* - ahead of print.
 - IF: 3.8, Q1
- Lesensky, J., Benes, M., Havranek, M., Belzarena, A.C. (2025) Optimized prosthetic design, surgical technique, and cosmetic outcome in shoulder reconstruction with double-constrained implant following extra-articular shoulder resection: a proof-of-concept. *World J. Surg. Oncol.* 23(1):1-7.
 - IF: 2.5, Q1
- Lesensky, J., Belzarena, A.C., Benes, M. (2025) Successful limb-salvage procedure using a bioexpandable prosthesis after infected primary reconstruction of the distal femur in a skeletally immature patient: a case report. *World J. Surg. Oncol.* 23(1):1-8.
 - IF: 2.5, Q1
- Khadanovich, A., Benes, M., Kaiser, R., Reynolds, J., Mawhinney, G., Stulik, J., Kachlik, D. (2025) Anatomy of the superior hypogastric plexus and its relevance to anterior lumbar interbody fusion. *J. Neurosurg. Spine* 43(1):19-25.
 - IF: 3.1, Q1
- Fulin P, Hert J, Walder J, Kratochvil A, Kubasova K, Grzelecki D, Pokorny D. (2025). The impact of alcohol use on the outcomes of shoulder joint replacement in traumatic indications type of study: clinical study-comparison of functional outcomes of shoulder replacement in alcohol use disorder and control groups. *BMC Musculoskeletal Disorders*, 26(1), 698.
 - IF:2,4 Q2
- Khadanovich, A., Kamlerova, J., Havlikova, S., Benes, M., Fulin, P., Kachlik, D., Kunc, V. (2026) Canals and grooves for the supraclavicular nerves revisited: anatomical and radiological study outlining their topography for clinical practice. *Ann. Anat.* 263:152742.
 - IF: 1.7, Q2
- Khadanovich, A., Benes, M., Kaiser, R., Reynolds, J., Mawhinney, G., Stulik, J., Kachlik, D. (2025) Anatomy of the long thoracic nerve in relation to thoracotomy for spinal approaches: how to avoid nerve injury? *Oper. Neurosurg.* - ahead of print.
 - IF: 1.8, Q2
- Lesensky, J., Blecha, O., Belzarena, A.C., Benes, M. (2025) Custom 3-dimensional-printed oncologic endoprosthesis for reconstruction of the calcaneus: a case report. *Foot Ankle Spec.*
 - IF: 2.1, Q2
- Khadanovich, A., Benes, M., Kaiser, R., Reynolds, J., Mawhinney, G., Stulik, J., Kachlik, D. (2025) Anatomy of the diaphragmatic crura and other paraspinal structures relevant to en-bloc spondylectomy for lumbar spine tumours. *Eur. Spine J.* 34(8):3532-3539.
 - IF: 2.7, Q2
- Khadanovich, A., Benes, M., Kaiser, R., Reynolds, J., Mawhinney, G., Stulik, J., Kachlik, D. (2025) Anatomic relationship between the greater occipital nerve and the axis: Is it possible to safely insert a percutaneous C2 screw without causing occipital neuralgia? *Oper. Neurosurg.* - ahead of print.
 - IF: 1.8, Q2
- Khadanovich, A., Benes, M., Kaiser, R., Giele, H., Kachlik, D. (2025) End-to-side neurorrhaphy of the sural nerve to the superficial fibular nerve: an anatomically feasible

technique for restoring sensation following sural nerve harvest. *J. Plastic Recon. Aesth. Surg.* 109:213-219.

o **IF: 2.4, Q2**

- Kunc V., Veigl D., Dráč P. (2025) Bipartite trapezium – rare congenital accessory bone: A case report of two bilateral cases among related patients and description of new accessory bone – os scaphocapitatum anterius. *BMC Muskuloskeletal Disorders*.

o **IF: 2.4 Q2**

- Benes, M., Bartak, V., Kirsbaumova, A., Cullen, M.M., Kachlik, D., Kunc, V. (2025) Effect of capsular sparing versus capsular resection on pressure changes under the tendon of the iliopsoas muscle. An experimental cadaveric study. *Clin. Biomechanics* 127:106575.

o **IF: 1.4, Q3**

- Benes, M., Bartak, V., Uhlik, J., Novotny, T., Rybakova, A., Kachlik, D., Kunc, V. (2025) Surgical anatomy of the anterior musculocapsular complex of the hip: a macroscopic and microscopic anatomical reappraisal. *Anat. Cell Biol.* 58(2):155-165.

o **IF: 1.2, Q3**

- Khadanovich A, Benes, M., Kaiser, R., Kachlik, D. (2025) Unusual innervation of the sartorius muscle by the ilioinguinal and femoral nerves with unique arrangement of the lumbar plexus: a case report and clinical implications. *Surg. Radiol. Anat.* 47(1):90.

o **IF: 1.2, Q3**

- Benes, M., Bartak, V., Kirsbaumova, A., Kunc, V., Kachlik, D. (2025) Partial preservation of the anterior capsule in total hip arthroplasty to decrease the risk of iliopsoas impingement. *Techniques Orthop.* 10.1097.

o **IF: 0.2, Q4**

- Kunc V., Mišičko R. (2025) Acromioclavicular joint separation accompanied by coracoid fracture in adolescent – Case report of rare entity treated by headless compression screw. *Malaysian Orthopedic Journal* 2Accepted article in press

o **IF: 0.6 Q4**

- Benes, M., Humhej, I., Zitek, H., Kachlik, D., Kunc, V. (2025) Compressive and traumatic neuropathies of the deep branch of the radial nerve: a retrospective analysis of surgically treated cases. *Cesk. Slov. Neurol. Neurochir.* 88(6):349-356.

o **IF: 0.4, Q4**

- Kunc V., Mišičko R., Veigl D. (2025) Distal radius intra-articular malunion corrected with arthroscopy assisted open osteotomy: A case report. *Acta Chirurgiae Orthopaedicae et Traumatologiae Českoslovaca*, 92(5). **IF: 0.4, Q4**

- Popelka, S., Bek, J., Popelka, S. ml., Verešová, N., & Hromádka, R. (2025). Naše zkušenosti s náhradou hlezna Trabecular Metal Total Ankle. *Acta Chirurgiae Orthopaedicae et Traumatologiae Českoslovaca*, 92(6). **IF: 0.4, Q4**

- Beneš, M., Kachlík, D., Kunc, V. (2025) [Surgical anatomy for reinsertion of the distal tendon of the biceps brachii muscle]. *Rozhl. Chir.*, 104(8), 317-325.

- Kunc V. (2025) Volar approaches to the distal radius. *Rozhl. Chir.*, 104(8), 326-332.

- Kamlerová J., Zitek H., Kunc V. (2025) Clinically relevant variations in the area of the ulnar nerve sulcus and their relationship to surgical approaches to the elbow. *Rozhl. Chir.*, 104(8), 332-339.

- Popelka, S. jr. , Jahoda, D., Judl, T., Barták, V.: Laboratorní diagnostika v ortopedii. Laboratory diagnostics in orthopedics. in Zima T. a kol.: Laboratorní diagnostika. 713-721, Galén, Praha, 2025 . 1330 s. ISBN: 9788074927867

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

Head of Department: **prof. MUDr. Tomáš Büchler, Ph.D.**

Deputy Head for Clinical Oncology: **MUDr. Zdeněk Linke**

Deputy Head for Radiation Oncology: **MUDr. Michaela Jirkovská, Ph.D.**

Head Nurse: **PhDr. Mgr. Jana Anna Kopecká, MBA**

Head Radiographer: **Šárka Firýtová, DiS.**

Basic description:

The Department of Oncology provides comprehensive, highly specialised care in systemic anticancer therapy and radiation oncology.

- **National Oncology Centre (NOC):** Since the end of 2019, the department has been one of two National Oncology Centres in the Czech Republic.
- **Accreditation:** The department is accredited for specialist training in clinical oncology and radiation oncology.
- **International status:** The department is a full member of the **OECI** (Organisation of European Cancer Institutes), which enables participation in cutting-edge research and access to innovative treatment programmes.

Operational indicators for 2025:

Despite construction-related restrictions in 2025, including the closure of radiotherapy treatment rooms from March to November 2025, the department maintained a high level of activity.

- **Total number of procedures:** 266,806, including 221,551 outpatient follow-up visits
- **New patients:** 2,827 new patients admitted
- **Hospitalisations:** 1,111 patients hospitalised
- **Multidisciplinary teams:** 3,516 expert consultations held
- **Systemic treatment:** 13,243 courses, comprising 21,891 administrations, of chemotherapy, biological therapy, immunotherapy and hormone therapy

Radiation oncology:

Activity in 2025 was affected by the construction of the new centre, with radiotherapy treatment rooms closed from March to November 2025. Full operation resumed in November 2025.

- **External beam radiotherapy:** 325 patients treated, including 284 new patients; 1,226 courses delivered.
- **Modern techniques:** 66.7% of patients were treated using VMAT.
- **Paediatric radiotherapy:** 16 paediatric patients treated, with 912 fields delivered.
- **Brachytherapy:** 611 applications in 87 patients.

Specialised outpatient units and care:

The department operates a network of specialist outpatient units ensuring continuity of comprehensive care:

- Follow-up Outpatient Unit for Patients after Completion of Anticancer Treatment
- Outpatient Unit for Monitoring Patients during Chemotherapy
- Outpatient Unit for Monitoring Patients during Teletherapy
- Outpatient Unit for the Administration of Chemotherapy, Hormone Therapy, Biological Therapy and Immunotherapy
- Outpatient Unit for Monitoring Patients during Brachytherapy
- Palliative and Symptomatic Care Outpatient Unit
- Lymphatic Drainage Outpatient Unit
- Follow-up Outpatient Unit for Carriers of Genetic Mutations Associated with an Increased Risk of Cancer

New methods and therapeutic procedures:

The department actively introduces the latest standards of oncology care.

- **Personalised medicine:** Implementation of new biological therapy and immunotherapy agents; significant contribution to national drug registries.
- **Venous access:** Routine insertion of ports, PICC lines and midline catheters for the safe administration of chemotherapy.
- **Radiotherapy:** Standard use of **IMRT/VMAT** and **IGRT** techniques (image-guided radiotherapy).
 - Stereotactic radiotherapy (**SRT/SBRT**) for primary tumours and metastases.
 - Use of **FFF beams** to shorten irradiation time and reduce motion artefacts.
 - Adaptive head and neck radiotherapy using Velocity software.
- **Brachytherapy:** MRI-guided adaptive brachytherapy for cervical cancer (**IGABT**) and use of **3D printing** for customised moulds in skin cancer treatment.

Unique equipment:

The department has state-of-the-art technology integrated in the **ARIA system, version 15.6**.

- **TrueBeam linear accelerators (three units):** Equipped with respiratory motion management and advanced imaging (CBCT).
 - One unit has an **HD MLC** collimator with 2.5 mm leaves for extremely precise stereotactic treatment.
- **Planning:** Eclipse system with **RapidPlan** module (knowledge-based planning) and Velocity software for deformable image registration.
- **Diagnostics:** A new **Siemens SOMATOM go.Open Pro** CT simulator was installed in November 2025.
- **Brachytherapy:** GammaMed Plus iX afterloading system.

Significant events and international cooperation:

In November 2019, the Department of Oncology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, became a **full member of the OECl** (Organisation of European Cancer Institutes), which brings together a select group of leading cancer centres in Europe. In the Czech Republic, apart from our department, only the Masaryk Memorial Cancer Institute in Brno and the Institute of Biostatistics and Analyses in Brno are members. This membership was reaffirmed in subsequent years, including 2025. It has enabled the Department of Oncology team to participate preferentially in research into innovative new medicines, gain access to these medicines through academic clinical trials, and access priority funded educational programmes for our physicians.

In 2025, the department was an active member of the **EORTC**, specifically the Soft Tissue and Bone Sarcoma Group and the Gastrointestinal Tract Cancer Group, and of the Euro Ewing Consortium. It is also a member of the European Reference Network for Rare Adult Solid Cancers (EURACAN) for sarcomas, rare gynaecological malignancies and endocrine tumours. The department participates in academic clinical trials, such as Survival Outcomes in Adolescent and Young Adults with Colorectal and Pancreatic Cancer.

- In 2025, physicians from the department again actively participated in international **ASCO**, **ESMO** and **ESTRO** events through oral presentations, abstracts and posters.
- The department contributed both organisationally and through lectures to the **16th PragueONCO Colloquium**, held on 29-31 January 2025, the **5th Best of Oncology Prague**, held on 4 December 2025, the **Uro-Oncology Symposium**, the **SROBF Conference (Society for Radiation Oncology, Biology and Physics)**, and other major Czech scientific symposia.

Publications:

- **Kopečková, Kateřina a kolektiv.** *Vzácná onemocnění*. Praha: Grada Publishing, 2025. ISBN 978-80-271-5469-2.
- **Büchler T a kolektiv.** *Repetitorium onkologie*. Praha: Maxdorf, 2025. ISBN 978-80-7345-831-7.
- **Benesova I, et al.:** Spatial immunoprofiling of retroperitoneal leiomyosarcomas reveals intratumoral heterogeneity in immune cell infiltration, checkpoint molecule expression, and tertiary lymphoid structures. *Ann Med.* (IF 4,3)
- **Payakachat N, et al.:** Assessing side-effect bother, burden, and tolerability: A qualitative study exploring the content validity of the Functional Assessment of Cancer Therapy - Item GP5. *J Geriatr Oncol.* (IF 2,7)
- **Buchler T, et al.:** Risk of second primary malignancies after adjuvant chemotherapy for colon cancer. *Cancer.* (IF 5,1)
- **Buchler T, et al.:** Second Primary Cancer After Bladder Cancer: A Comprehensive Analysis of a National Cancer Registry. *Cancer Med.* (IF 3,1)
- **Fiala O, et al.:** Baseline and early changes in eosinophil count and neutrophil-to-eosinophil ratio predict outcomes in metastatic renal cell carcinoma treated with nivolumab. *Sci Rep.* (IF 3,9)
- **Kopp RM, et al.:** Real-world evidences on adjuvant Pembrolizumab for renal cell carcinoma: results from the multicenter real-world ARON-1 study. *Cancer Immunol Immunother.* (IF 5,4)
- **Fiala O, et al.:** Impact of concomitant use of proton pump inhibitors or cardiovascular medication on survival outcomes of patients with metastatic renal cell carcinoma treated with nivolumab. *Clin Exp Metastasis.* (IF 3,2)
- **Díaz-Gay M, et al.:** The mutagenic forces shaping the genomes of lung cancer in never smokers. *Nature.* (IF 48,5)

- **Díaz-Gay M, et al.:** Geographic and age variations in mutational processes in colorectal cancer. *Nature*. (IF 48,5)
- **Buchler T, et al.:** Relugolix in Combination with Androgen Receptor Pathway Inhibitors in the Treatment of Metastatic Prostate Cancer: A Clinical Perspective. *Target Oncol*. (IF 4,4)
- **Kucharz J, et al.:** Cabozantinib in the First-Line Treatment of Patients With Metastatic Renal Cell Carcinoma, Real-World Data From the Czech Republic and Poland: ICARO-RC Project. *Clin Genitourin Cancer*. (IF 2,3)
- **Simonik O, et al.:** Bioenergetics of human spermatozoa in patients with testicular germ cell tumours. *Mol Hum Reprod*. (IF 3,6)
- **Mocikova H, et al.:** Outcome of patients with diffuse large B-cell lymphoma and testicular involvement - real-world data. *Ann Hematol*. (IF 2,4)
- **Boušková V, et al.:** Integrative genome profiling reveals the miR-195-5p-CHEK1 axis and its impact on luminal breast cancer outcomes. *Mol Oncol*. (IF 4,5)
- **Strečkova E, et al.:** Skeletal Muscle Loss During Treatment With Abiraterone in Patients With Metastatic Prostate Cancer. *Prostate Cancer*. (IF 2,3)
- **Elisei R, et al.:** Patient-Reported Tolerability of Selpercatinib Compared to Cabozantinib/Vandetanib: A Secondary Analysis of the LIBRETTO-531 Randomized-Controlled Trial in RET-Mutant Medullary Thyroid Cancer. *Thyroid*. (IF 6,7)
- **Santoni M, et al.:** Pembrolizumab-axitinib versus nivolumab-cabozantinib as first-line therapy in patients with metastatic renal cell carcinoma: a retrospective real-world comparison (ARON-1). *Cancer Immunol Immunother*. (IF 5,4)
- **Porta C, et al.:** Pembrolizumab plus Lenvatinib in patients with metastatic Renal Cell Carcinoma: real-world evidences from the international ARON-1 study. *Cancer Immunol Immunother*. (IF 5,4)
- **Fiala O, et al.:** Concomitant medications in patients with metastatic urothelial carcinoma receiving enfortumab vedotin: real-world data from the ARON-2EV study. *Clin Exp Metastasis*. (IF 3,2)
- **Novysedlak R, et al.:** The Immune Microenvironment in Prostate Cancer: A Comprehensive Review. *Oncology*. (IF 1,8)

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

Head of Department: **doc. MUDr. Libor Fila, Ph.D.**

Deputy Head of Department: **MUDr. Dmitry Rakita, CSc., MBA**

Head Nurse: **Mgr. Jana Zelenková**

Basic description:

The Department of Pulmonology focuses on the diagnosis, treatment and research of diseases of the lower respiratory tract and lungs. The department currently has three inpatient wards with a total of 63 standard beds and an ICU with 9 beds. Its main programmes focus on lung transplantation, thoracic oncology, adult cystic fibrosis and interventional bronchoscopy. The department is part of the National Lung Transplantation Programme for the Czech Republic and the Slovak Republic, the Highly Specialised Thoracic Oncosurgery Care Centre of Motol University Hospital, and the Motol University Hospital Cystic Fibrosis Centre, within ERN-LUNG and the ECFS Clinical Trials Network (ECFS-CTN). The department holds Level III accreditation for postgraduate training in pulmonology and phthysiology and organises Institute for Postgraduate Medical Education courses in bronchoscopy and adult cystic fibrosis. The Subdepartment of Pulmonology and Phthysiology of the Institute for Postgraduate Medical Education is based at the department and is headed by prof. MUDr. Miloslav Marel, CSc.

In 2025, a total of 1,730 patients were hospitalised, including 349 in the ICU. A total of 18,107 patients were treated on an outpatient basis, 1,478

bronchoscopies were performed and 2,476 chemotherapy treatments were administered. A total of 1,573 cases were discussed by the department's multidisciplinary team.

Specialised outpatient units:

- Thoracic Oncology Outpatient Unit
- Transplant Outpatient Unit
- Cystic Fibrosis Outpatient Unit
- Interstitial Lung Disease Outpatient Unit
- Difficult-to-Treat Asthma Outpatient Unit
- Sleep-Disordered Breathing Outpatient Unit
- Smoking Cessation Outpatient Unit

New methods and procedures:

- Electromagnetic navigation bronchoscopy for the diagnosis of solitary pulmonary nodules, remote lesions and subsolid lesions that, due to their nature and location, cannot be diagnosed using previously available methods
- Real-time EBUS-guided cryobiopsy of mediastinal and hilar lymph nodes. This method enables lymph node tissue sampling for the diagnosis of lymphomas, lung tumours and metastases, with samples large enough for testing predictive markers required for modern oncological treatment
- Neoadjuvant chemoimmunotherapy with nivolumab for lung cancer
- Use of next-generation sequencing (NGS) to detect driver mutations for targeted treatment of lung cancer, including sotorasib and other therapies
- New approaches in the treatment of resistant CMV infection in lung transplant recipients, including letermovir and maribavir, and in biologic therapy for difficult-to-treat asthma, including tezepelumab
- Induced sputum collection was introduced in patients with cystic fibrosis who are unable to expectorate

Unique equipment:

- ERBECRYO cryotherapy unit with thin flexible cryoprobes
- ILLUMISITE electromagnetic navigation bronchoscopy system
- Olympus ESG-300 argon plasma coagulation system
- ID NOW molecular diagnostic system for respiratory pathogens, including SARS-CoV-2 and influenza, using unique nucleic acid amplification technology

Significant events in 2025:

- MUDr. Nela Šťastná and MUDr. Andrea Zajacová successfully completed their postgraduate studies. MUDr. Nela Šťastná received the Masaryk University Vice-Rector's Award for excellent results in doctoral studies, and MUDr. Andrea Zajacová received the Extraordinary Dean's Award of the 2nd Faculty of Medicine, Charles University, for outstanding results in doctoral studies.
- Newly renovated department facilities, including the intensive care unit and bronchoscopy suite, were put into operation.

Publications:

- **Fila L, Zajacova A.** Navigating the pitfalls of pulmonary function testing in chronic lung allograft dysfunction and chronic pulmonary graft-versus-host disease. *Eur J Intern Med.* 2025; 141: 106500. **Q1; IF 6.1**
- **Sterclova M,** Doubkova M, Doubek M, Macek M. The necessity of geneticist and pulmonologist collaboration in the treatment of monogenic interstitial lung diseases in adults. *Breathe (Sheff).* 2025; 21(3): 240255. **Q2; IF 3.4**
- Havlin J, Skotnicova A, Dvorackova E, Palavandishvili N, Smetanova J, Svorcova M, Vaculova M, Hubacek P, **Fila L**, Trojanek M, Lischke R, Milota T, Kalina T. Respiratory syncytial virus prefusion F3 vaccine in lung transplant recipients elicits CD4+ T cell response in all vaccinees. *Am J Transplant.* 2025; 25(7): 1452-1460. **Q1; IF 8.2**
- Koziar Vasakova M, **Sterclova M.** Serum Specific Immunoglobulins G. Do They Belong to the Standard Diagnostic Workup in Interstitial Lung Diseases? *Arch Bronconeumol.* 2025; 61(4): 193-195. **Q1; IF 9.2**
- Pócsi M, **Fila L**, Péterfia C, Halász A, Szanto TG, Mészáros B, Major J, Laki I, Szabó H, Panyi G, Balogh I, Amaral MD, Macek M Jr, Nagy B Jr. Comparison of the Effect of CFTR Modulators *elxacaftor/tezacaftor/ivacaftor* and *lumacaftor/ivacaftor* via Serum Human Epididymis Protein 4 Concentration in *p.Phe508del-CFTR* Homozygous Cystic Fibrosis Patients. *J Clin Med.* 2025; 14(17): 6188. **Q1; IF 2.9**

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

Head of Department: **prof. MUDr. Marek Babjuk, CSc.**

Deputy Head of Department: **MUDr. Marek Schmidt, FEBU**

Head Nurse: **František Kubíček** (until 31 January 2025)

Head Nurse: **Mgr. Sandra Dvořáková** (from 1 February 2025)

Basic description:

The Department of Urology provides preventive and therapeutic care across the full spectrum of adult urology, with nationwide and international reach. The department specialises in the surgical treatment of urogenital malignancies, including subsequent oncological treatment. It is one of the top centres for the treatment of urolithiasis and for laparoscopic and robot-assisted procedures. It is the leading centre in the Czech Republic for gender-affirming surgery and comprehensive treatment of bladder cancer. Since 2018, the department has used the da Vinci robotic surgical system. In 2025, a total of 440 robot-assisted urological procedures were performed. **In 2025, the department recorded 29,517 outpatient examinations, 2,794 hospitalisations and 2,532 operations.**

Specialised outpatient units:

- Oncology Outpatient Unit
- Outpatient Unit for the Treatment and Metaphylaxis of Urolithiasis and Chronic Infection
- Andrology Outpatient Unit
- Lower Urinary Tract Dysfunction Outpatient Unit
- Centre for the Treatment and Research of Prostate Cancer, in cooperation with the Department of Radiation Oncology and the Institute of Immunology
- Centre for Gender-Affirming Surgery
- Motol University Hospital Robotic Surgery Centre

New methods and procedures:

- Advanced laparoscopic procedures, including cystectomy, radical prostatectomy, reconstructive surgery, retroperitoneal lymphadenectomy, partial nephrectomy, treatment of vesicovaginal fistulas and Boari flap reconstruction
- Advanced and comprehensive endoscopic treatment of urolithiasis, including mini-percutaneous nephrolithotomy, percutaneous nephrolithotomy, flexible ureteroscopy and laser lithotripsy
- Percutaneous neurostimulation in the treatment of urinary urgency symptoms
- Introduction of surgical implantation of a sacral neuromodulator for the treatment of idiopathic underactive bladder
- Intradetrusor administration of neurotransmitter blockers in the treatment of overactive bladder
- Transurethral bipolar enucleation of the prostate using a morcellator
- MRI/ultrasound fusion-guided prostate biopsy
- Implantation of an artificial urinary sphincter for severe urinary incontinence
- Laser ablation of bladder tumours under local anaesthesia
- Robot-assisted procedures, including radical prostatectomy, partial nephrectomy with intraoperative ultrasound tumour detection, pyeloplasty, radical cystectomy, nephroureterectomy, closure of vesicovaginal fistulas, ureteric reimplantation, fully robot-assisted radical cystectomy with intracorporeal urinary diversion, robot-assisted retroperitoneal lymphadenectomy for testicular tumours, and robot-assisted radical nephrectomy with inferior vena cava thrombectomy
- Transurethral holmium laser resection of the prostate with morcellation

Unique equipment:

- Ho:YAG laser
- Instrumentation for NBI (narrow-band imaging) and fluorescence cystoscopy
- Instrumentation for mini-PCNL
- Einstein Vision 3D laparoscopic system
- Piranha endoscopic morcellator
- Toshiba Aplio 500 ultrasound system for MRI/ultrasound fusion-guided prostate biopsy
- COMBAT BRS (COMBined Antineoplastic ThermoTherapy Bladder Recirculation System) for hyperthermic intravesical chemotherapy of bladder tumours
- da Vinci Xi robotic surgical system

Significant events in 2025:

- Organisation of the conference Comprehensive Updates in Oncological Urology, Prague, 16-17 May 2025
- Organisation of the EAU/ESOU Masterclass on Non-Muscle-Invasive Bladder Cancer, Prague, 27-28 February 2025
- Organisation of the 13th EAU Central European Meeting, Prague, 25-26 April 2025

Common Inpatient Sites of Paediatric and Adult Sections

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

Head of Department: **prof. MUDr. Roman Chmel, Ph.D., MHA**

Deputy Head of Department: **MUDr. Marek Pluta, Ph.D.**

Head Nurse: **Mgr. Iveta Oravcová**

Basic description:

The Department of Gynaecology and Obstetrics provides care nationwide across the full scope of gynaecology and obstetrics, including specialised oncogynaecological and urogynaecological diagnostic examinations and surgical procedures, treatment of sexual dysfunction, and infertility treatment using assisted reproduction methods. The department is a highest-category Perinatology Centre and provides comprehensive perinatological care for pregnant women carrying foetuses with congenital developmental defects and for women at risk of delivering extremely premature newborns. In 2025, a total of 5,294 patients were hospitalised at the department, 2,913 operations were performed, and 41,647 outpatient treatments were provided. A total of 1,469 deliveries took place at the department, including 18 of twins.

Specialised outpatient units:

- Oncogynaecology Outpatient Unit
- Urogynaecology Outpatient Unit
- Sexology Outpatient Unit
- Paediatric and Adolescent Gynaecology Outpatient Unit
- Endocrinology Outpatient Unit
- Reproductive Medicine Centre
- Centre for Ultrasound Diagnostics and Fetal Medicine

New methods and procedures:

- Research into various aspects of the treatment of absolute uterine factor infertility using uterus transplantation
- To date, more than 160 robotic surgeries for malignant gynaecological tumours have been performed at the department

Unique equipment:

- Robotic surgical micromanipulator
- Surgical CO2 laser for the treatment of pathological findings on the vulva and in the vagina
- Free-hand laparoscopic manipulator

Significant events in 2025:

- Doctors from the department authored publications in Q1 and Q2 journals:
- Chmel R. Jr., Chubanovova N., Balko J., Chmel R., Pastor Z. Transgender men as uterus donors for transplantation: A theoretical perspective. Acta Obstet Gynecol Scand 2025;104(12):2010-2014. (Q1)
- Moravcova J., Chmel R., Maluskova J., Sticova E. Vaginal endometriosis following uterine transplantation in a patient with Mayer-Rokitansky-Küster-Hauser syndrome: A unique case report. Int J Gynaecol Obstet 2025 Sep 10. doi: 10.1002/ijgo.7053 (Q2)

The following department forms part of the Department of Gynaecology and Obstetrics, 2nd Faculty of Medicine, Charles University and Motol University Hospital:

Department of Neonatology

Deputy Head of Department: **prof. MUDr. Jan Janota, Ph.D.**

Head Nurse: **Bc. Renata Jungmannová**

Basic description:

The Department of Neonatology with the Intensive and Resuscitation Care Unit is an integral part of the Level III Perinatology Centre – the Perinatology Intensive Care Centre – with supraregional coverage. The facility provides standard, intermediate and intensive resuscitation care to the full extent, including controlled whole-body hypothermia, nitric oxide administration and all modules of conventional and non-conventional artificial pulmonary ventilation. In collaboration with other paediatric specialties, the department provides comprehensive care for newborns with congenital developmental defects and metabolic disorders. The department provides specialised intensive and resuscitation care for premature infants, particularly extremely premature infants, and for all critically ill newborns regardless of gestational age. Care for healthy newborns, primarily in a rooming-in system, is standard practice.

In 2025, 1,485 live-born children were delivered at the centre. A total of 51 newborns with a birth weight below 1,500 g and 197 premature newborns (<37 weeks of gestation) were treated at the department. Intensive, resuscitation or intermediate care was provided to a total of 430 newborns, 39% of whom were born outside Motol University Hospital and transported after birth.

Specialised outpatient units:

The department includes a specialised outpatient unit for perinatally at-risk children. In 2025, 400 examinations were carried out there in cooperation with a paediatric neurologist, physiotherapist, audiologist, ophthalmologist and clinical psychologist.

New methods and procedures:

- International multicentre study of neonatal PDA treatment using paracetamol
- Multicentre study of ventilatory stabilisation of newborns in the delivery room
- A series of studies focused on optimising ventilatory support in patients using automatic oxygen therapy adjustment by the PRICO method

- In cooperation with the Department of ENT, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the programme of early correction of cleft lip defects in newborns continued

Unique equipment:

- Comprehensive mechanical ventilation equipment with automatic FiO₂ regulation based on HbSat values (PRICO)
- Special comprehensive transport system (2× Giraffe Omnibed Carestation system and Shuttle GE Healthcare module) with life-support capability and comprehensive vital-sign monitoring, introduced for postnatal transport and for all transport within multidisciplinary cooperation at Motol University Hospital

Significant events in 2025:

- Monograph Pediatrics: Šumník, Jabandžiev, Janota et al. (co-author Jan Janota), departmental participation – 18 chapters
- Organisation and delivery of European certified neonatal resuscitation courses (European Resuscitation Council Neonatal Life Support Courses)

Publications:

- Treatment guided by cerebral oximetry in mechanically ventilated newborns: a statistical analysis plan for step one of the SafeBoosC-IIIv randomised clinical trial. Petersen JJ., Kamp CB., Olsen MH., Hansen ML., Thorlund K., Pellicer A., Naulaers G., Dempsey E., Hahn GH., Andersen PB., Rasmussen MIS., Pichler G., Dimitriou G., Szczapa T., Ognean ML., Nesargi S., Musante G., Chalak L., Di Maio M., Lakhwani J., Procionoy RS., Tkaczyk J., et al. JC Trials. 2025 Dec 18. doi: 10.1186/s13063-025-09387-4.
- Priorities for research in perinatal palliative care: an international Delphi study. Loučka M., Zindulková M., Dvořáková HM., Staničková Z. BMC Palliat Care. 2025 Jul 16;24(1):202. doi: 10.1186/s12904-025-01845-9.

Department of Anaesthesiology, Resuscitation and Intensive Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head of Department: **prof. MUDr. Tomáš Vymazal, Ph.D., MHA**

Deputy Head for the Adult Section: **MUDr. Radka Křozová**

Deputy Head for the Paediatric Section: **MUDr. Jana Pavlíčková**

Deputy Head for Cardiac Anaesthesia: **MUDr. František Mošna, MHA**

Head Nurse for the Adult Section: **Mgr. Taťána Maňasová**

Head Nurse for the Paediatric Section: **Ing. Bc. Lenka Malíková, MBA**

Head Nurse for Cardiac Anaesthesia: **Mgr. Petr Šťastný, DiS.**

Basic description:

The Department of Anaesthesiology, Resuscitation and Intensive Medicine (KARIM) provides anaesthesiology and resuscitation care in both the paediatric and adult sections in accordance with the needs and requirements of Motol University Hospital. In terms of the number of doctors and other healthcare professionals, as well as the scope of its healthcare activities, it is the largest department of its kind in the Czech Republic. The department provides specialised care on request for lower-tier healthcare facilities throughout the Czech Republic. It is the managing and coordinating department for the postgraduate education of doctors and nurses, and

provides training for anaesthesiologists and doctors in other specialties. The department has repeatedly been awarded Type II accreditation. The Head of the department serves as Chair of the Accreditation Commission at the Ministry of Health of the Czech Republic, Head of the Department of Anaesthesiology and Intensive Medicine at the Institute for Postgraduate Medical Education, and Chair of the Specialist Board for Anaesthesiology and Intensive Medicine at the Czech Medical Chamber.

KARIM provides teaching for medical students and bachelor's degree students at the 2nd Faculty of Medicine, Charles University, totalling more than 1,800 hours per year, including as part of the international educational and research projects IFMSA and ERASMUS. At the very end of 2025, the Intensive Medicine Simulation Centre was opened – the largest and most modern simulation centre of its kind in the Czech Republic, financed from a National Recovery Plan project.

In 2025, a total of 1,193 patients requiring resuscitation care were hospitalised in the department's acute beds, including 718 adults and 475 children. In 2025, 76 patients were hospitalised in the NIP/DIOP department. The number of anaesthetics administered in 2025 was 39,393, including 12,576 in children. ECMO support was provided to 106 critically ill adult patients and 12 paediatric patients. Anaesthesiology and intensive care were provided to 71 patients as part of the international lung transplantation programme. More than 230 children received one type of long-term peripheral vascular access, confirming the department's leading role in this area in both the Czech Republic and Slovakia.

New methods and procedures:

- In 2025, an ERAS programme was launched in cooperation with the Department of Paediatric and Adult Orthopaedics and Traumatology, 2nd Faculty of Medicine, Charles University, for selected groups of adult patients.
- In 2025, the Motol University Hospital ECMO Centre for adult and paediatric patients was significantly strengthened. The centre holds ECLS Centre status and is registered in the European database.
- KARIM is one of three centres in the Czech Republic involved in the e-CPR project, including registration in the European database.
- A mobile ECMO team was successfully established, providing urgent care in the Czech Republic and Slovakia.
- Emergency thoracotomy procedures were introduced as part of the primary treatment of severe chest trauma, including the organisation of educational courses.
- Thanks to a unique PFA device for functional platelet analysis – part of a robust research programme embedded in the department – we provide this service to all departments of Motol University Hospital.
- Simulation Medicine Laboratory – we train doctors and nurses from Motol University Hospital and organise elective courses for undergraduate students; in 2025, the laboratory was expanded to include additional high-fidelity models.
- In 2025, more than 230 long-term peripheral venous catheters were inserted in children, placing the department among the leaders in this field not only in the Czech Republic, but also in Slovakia.
- In cooperation with the Department of Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the consistent application of ERAS procedures for major abdominal surgery was introduced, with a clear

impact on the quality of hospitalisation, including publication of the results in articles and at workshops.

- In 2025, a record 71 lung transplant patients were hospitalised at KARIM, practically all of them with ECMO organ support and with zero 30-day mortality.
- Expanded use of regional anaesthesia with routine ultrasound guidance.
- Routine use of Target Temperature Management – targeted cooling in patients after cardiac arrest.
- Routine bedside haemocoagulation testing – ROTEM Platelet for the early diagnosis of coagulopathy; changes in the management of bleeding conditions have significantly reduced the use of blood derivatives, with annual savings in the hundreds of thousands of CZK. These procedures have also been implemented in an internal Motol University Hospital guideline.
- Modernisation of equipment in anaesthesiology theatres is under way, including the use of the most advanced anaesthetics.
- Use of ultrasonography for the early diagnosis of bleeding into body cavities in trauma patients.
- Use of the most advanced videolaryngoscopy techniques in difficult intubation, including disposable intubation aids and devices.
- Use of combined neuraxial blocks in major joint replacements, including hip and knee replacements, together with staff training at specialised departments.
- Use of ultrasound-guided peripheral blocks in paediatric and adult patients.
- Routine use of reliable reversal of neuromuscular blockade after anaesthesia.
- Use of non-invasive ventilation techniques to treat respiratory failure in children and adults.
- Routine monitoring of cerebral oximetry and cerebral perfusion during surgery in children and adults, not only during extracorporeal circulation using deep hypothermia.
- Comprehensive treatment protocol for the management of diastolic heart failure.

Significant events in 2025:

- ERAS was launched in cooperation with the Department of Paediatric and Adult Orthopaedics and Traumatology, 2nd Faculty of Medicine, Charles University, for selected groups of adult patients.
- At the end of 2025, the Intensive Medicine Simulation Centre was opened – the largest and most modern simulation centre of its kind in the Czech Republic, financed from a National Recovery Plan project.
- In 2025, the Motol University Hospital ECMO Centre for adult and paediatric patients was significantly strengthened. The centre holds ECLS Centre status and is registered in the European database.
- At KARIM, one grant, three local academic studies, and three multicentre international studies organised by the ESA (European Society of Anaesthesiology) are under way. The local academic studies were approved by the Motol University Hospital Ethics Committee.
- Two doctors successfully defended their dissertations.
- One appointment as professor was made.
- A pre-certification and core training course was organised, including the relevant examinations.

- One monograph was published, and KARIM doctors were principal authors in two further monographs and co-authors in three.
- Fourteen original papers were published in peer-reviewed journals, including two in reviewed journals and 12 in impact-factor journals, along with numerous articles in other specialist periodicals.
- Updated versions of teaching scripts for medical students were published, including an English-language version.

The following forms part of KARIM:

Department of Follow-up Intensive Care (NIP) and Long-term Intensive Nursing Care (DIOP)

*Deputy Head of Department: **MUDr. Kateřina Čadová***

*Head Nurse: **Mgr. Soňa Hájková***

The department is one of the most modern in the Czech Republic and provides medical and nursing services of the highest possible quality. Demand for hospitalisation significantly exceeds the department's capabilities and capacity. In 2025, 76 patients were hospitalised here.

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

*Head of Department: **prof. PaedDr. Pavel Kolář, Ph.D.***

*Head Physiotherapist: **Mgr. Kateřina Míková***

The department includes:

1. Department of Rehabilitation – Adult and Paediatric Sections
2. Spinal Unit
3. Department of Pain Research and Treatment
4. Department of Sports Medicine

1. Department of Rehabilitation – Adult and Paediatric Sections

*Deputy Head of Department: **MUDr. Martina Kővári, Ph.D., MHA** (Adult Section)*

*Deputy Head of Department: **MUDr. Olga Dyrhonová** (Paediatric Section)*

*Head Nurse: **Bc. Martina Polanecká***

Basic description:

The Department of Rehabilitation and Sports Medicine (RHB) provides comprehensive medical rehabilitation for adult and paediatric patients across all clinical specialties. We treat both outpatients and inpatients, either in the department's own rehabilitation beds or in other wards in the adult and paediatric sections of the hospital. The Department of Rehabilitation includes two acute inpatient rehabilitation wards. The adult ward has 30 beds and the paediatric ward has 16 beds. **During 2025, a total of 829 patients were hospitalised in the inpatient section of the department and 4,840 patients were treated in the**

outpatient section. We provided rehabilitation care to 20,908 patients at other departments.

Specifics of the department:

The adult section of the Department of Rehabilitation forms part of the Comprehensive Cerebrovascular Care Centre, where we focus primarily on patients in the acute phases of disease. We also provide a range of specialised programmes, including respiratory physiotherapy for patients following lung transplantation, the comprehensive treatment of spastic paresis for adults and, newly, paediatric patients as well (including botulinum toxin treatment), care for patients with neuromuscular disorders, pelvic floor therapy, therapy for vestibular disorders, visceral rehabilitation, diagnosis and treatment of swallowing disorders, neurovisual rehabilitation, a lymphology programme, and care for amputee patients. Our doctors also examine the musculoskeletal system using musculoskeletal ultrasound, including interventional procedures. Last year, the range of services provided was further expanded to include oesophageal and anorectal manometry examinations for the diagnosis of pelvic floor, oesophageal and diaphragmatic disorders.

The paediatric section of the Department of Rehabilitation provides comprehensive rehabilitation care for children with delayed psychomotor development, patients diagnosed with cerebral palsy, obstetric brachial plexus palsy, oncology patients, patients with cardiac disease, and patients following cardiac surgery.

In cooperation with spinal surgery departments, it provides care for patients with scoliosis of various aetiologies.

Doctors and therapists are members of multidisciplinary teams, including the Cystic Fibrosis Centre, Bone Team, Neuromuscular Centre, High-Risk Clinic and Supportive Care Centre.

Further specialised programmes are also provided at our department, for example rehabilitation programmes for adult and paediatric patients following surgery for congenital heart defects.

One example of long-term multidisciplinary cooperation is the regular organisation of multidisciplinary highly specialised consultation seminars, primarily intended for patients under 18 years of age from across the Czech Republic. Separate multidisciplinary seminars are also organised as needed for adult neurological patients.

The Department of Rehabilitation also provides bachelor's and master's degree programmes in physiotherapy, including applied physiotherapy, undergraduate and postgraduate teaching for doctors, mandatory and optional pre-certification courses in the field of Rehabilitation and Physical Medicine, as well as habilitation and professorial appointment procedures in Kinesiology and Rehabilitation.

New methods and procedures:

- The diagnostic and therapeutic concept of Dynamic Neuromuscular Stabilisation (DNS), based on the principles of developmental kinesiology, was developed at the department and introduced into clinical practice. The founder of this concept is the Head of the department, prof. PaedDr. Pavel

Kolář, Ph.D. The department participates in teaching this concept in the Czech Republic and abroad, in approximately 55 countries.

- Outpatient project in cooperation with the Department of ENT, 1st Faculty of Medicine, Charles University and Motol University Hospital, involving care for patients after total laryngectomy and oncology patients after radiotherapy to the neck area, as well as rehabilitation care for patients with facial nerve paresis following surgery for facial nerve tumours.
- Cooperation with the Department of Neurology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, involving the testing of patients with SMA during Spinraza therapy and the provision of comprehensive care for patients with ALS within the Neuromuscular Clinic.
- Outpatient project in cooperation with the Department of Pneumology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and the 3rd Department of Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital, involving care for patients before and after lung transplantation.
- Expansion of speech and language therapy at Motol University Hospital – provision of speech and language therapy, including auditory rehabilitation, for adult patients after cochlear implantation, and the establishment of a speech and language therapy group for people diagnosed with Parkinson's disease. A speech and language therapy counselling service for parents is also available at the Department of Neonatology, focusing on feeding, along with a specialised outpatient unit for children with cleft defects. Speech and language therapists now also cooperate with the Department of Neurology as part of the ERN-RND project, the European Reference Network for rare neurological diseases, and with a specialised group for frontotemporal dementia.
- Quantitative and qualitative expansion of the Neurovisual Rehabilitation project, which focuses on the diagnosis and treatment of neurovisual functions in adult and paediatric patients.
- Cooperation in obtaining induced sputum from patients who are unable to expectorate spontaneously, such as patients with cystic fibrosis.
- Since the beginning of 2024, we have been using ultrasound to examine the musculoskeletal system and, newly, have also been performing interventional ultrasound, focused mainly on the treatment of musculoskeletal pain.
- In autumn 2025, a team began examining functional disorders of the oesophagus, diaphragm and pelvic floor using high-resolution oesophageal and anorectal manometry.
- 2025 – establishment of a Physiotherapy Counselling Service providing education for patients before radical prostatectomy, in cooperation with the Department of Urology, 2nd Faculty of Medicine, Charles University and Motol University Hospital.
- 2025 – start of cooperation with the Faculty of Social Sciences, Charles University, with the aim of establishing a registry of patients with cerebral palsy.
- Cooperation continued on the original “Rehasít” project, which aims to map and subsequently build a registry of physiotherapists and rehabilitation physicians in the Czech Republic to provide outpatient care for paediatric oncology patients.

Unique equipment:

- BTL 6000 FSWT device – high-energy shock wave therapy, the use of which supports the healing of acute and chronic musculoskeletal disorders and has a significant analgesic effect
- Dynamic walkway with virtual reality
- DST 8000 Triple Pro smart parallel bars – a system with three-metre handrails for gait training on level ground, an inclined plane and stairs
- Devices for functional electrical stimulation in paresis of the lower or upper limbs
- Poelite 100 BTL-6000 super inductive magnetic therapy device for the treatment of acute and chronic movement disorders
- New device: Alpinion x Cube 70, including high-frequency, high-resolution probes
- USONO probe fix – a device for fixing an ultrasound probe for dynamic examination
- In cooperation with the faculty section of the department, four immersive virtual reality sets are available with a wide range of rehabilitation programmes, used both in academic and scientific activities and with clinical applications, for example in patients after stroke or craniocerebral trauma, or in patients with vestibular disorders.
- 2025 – a new ManoScan high-resolution manometry system was put into operation for oesophageal and anorectal manometry

Significant events in 2025:

At the request of Charles University Rectorate, self-evaluation reports were prepared for the fields of Kinesiology and Rehabilitation and Applied Physiotherapy. Both study programmes received highly positive evaluations from the Internal Evaluation Board of Charles University.

In 2025, the clinic's staff actively participated in major international and national professional events in the United States, Germany, Serbia, and the Czech Republic, where they delivered more than five scientific presentations and poster contributions focused on rehabilitation, sports medicine, pediatric neurology, fascia research, and vestibular rehabilitation. At the same time, the clinic organized several educational activities and specialized courses, including an international congress in the United States, a postgraduate course in vestibular rehabilitation, and an educational musculoskeletal ultrasound program for Ukrainian physicians within the framework of the Czech Ministry of the Interior's Medevac Program.

Publications:

In 2025, publication activities were primarily focused on research in the fields of musculoskeletal medicine, rehabilitation, sports physiology, vestibular function, and diagnostic methods. The results were published in a number of prestigious international journals with high impact factors, including Q1 and D1-ranked journals. The book *Kolář et al., Rehabilitation in Clinical Practice* was also published in the Chinese language.

2. Spinal Unit

Deputy Head of Department: **doc. MUDr. Jiří Kříž, Ph.D.**

Head Nurse: **Mgr. Hana Jirků** (until 30 April 2025)

Head Nurse: **Bc. Martina Polanecká** (from 1 June 2025)

Basic description:

The Spinal Unit provides medical and rehabilitation care for patients in the post-acute stage after spinal cord injury and, subject to capacity, also for patients in the chronic stage after spinal cord injury who have developed serious medical complications.

In 2025, 80 patients with acute spinal cord injury and 24 spinal cord injury patients in the chronic phase with acute complications were hospitalised. Approximately 550 patients were treated on an outpatient basis as part of follow-up care or due to newly-developed medical problems.

New methods and procedures:

- Implantation of baclofen pumps in patients with severe spasticity after spinal cord injuries, in cooperation with the Department of Neurosurgery for Children and Adults, 2nd Faculty of Medicine, Charles University and Motol University Hospital
- Treatment of chronic neuropathic pain with medical cannabis
- Completion, in cooperation with Centrum Paraple, of the project “Addressing Sleep Apnoea in People with Spinal Cord Injury: Treatment Options Using Oral Appliances”, supported by the Charles University Grant Agency
- Continuation, in cooperation with the Faculty of Biomedical Engineering of the Czech Technical University, of the project “Design and Development of a Method for the Prevention of Autonomic Dysreflexia in Individuals after Spinal Cord Injury”
- Faecal bacteriotherapy for decolonisation of multidrug-resistant pathogens
- Continued participation in the European project “European Multicenter Study about Spinal Cord Injury (EMSCI)”. IFP 2001/P 66
- Preparation of the clinical study Pregabalin or Baclofen in Spastic Motor Behaviour Treatment After SCI (PoBSCI), Prospective, Double-Blind, Randomised Drug Study. EU CT No.: 2024-518824-56-00. Principal investigator: Assoc. prof. Jiri Kriz, MD, PhD. Approved by the State Institute for Drug Control on 20 October 2025

Unique equipment:

- Voice assistant for communication with surroundings and device control for patients with upper limb paralysis, supplemented with a module for controlling various types of medical beds
- Tablet and communicator for programming the baclofen pump
- NeuRx clinical station for setting diaphragm stimulation parameters in patients with high cervical spinal cord injury
- CoughAssist device to support coughing in patients with cervical spinal cord injury
- Pony FX device for spirometry testing
- Misonic SonicOne device for removing necrotic material and devitalised tissue from skin defects

- Finapres NOVA device for assessing autonomic nervous system disorders
- ABPM device – ambulatory blood pressure monitor
- Conformat device for seated pressure mapping in individuals with spinal cord injury

Significant events in 2025:

- Publication activities focused on spinal cord injury research resulted in **10 manuscripts**, including clinical studies published in prestigious international journals such as The Lancet Neurology and Brain. The findings were also actively presented at national and international scientific conferences and educational courses dedicated to the diagnosis, treatment, and comprehensive management of patients with spinal cord injuries.

3. Department of Pain Research and Treatment

Deputy Head of Department: **doc. MUDr. Jiří Kozák, Ph.D.**

Head Nurse: **Soňa Bašová**

Basic description:

The Department of Pain Research and Treatment (DPRT) has a multidisciplinary approach to the management of chronic pain conditions. It is one of 11 neuromodulation centres in the Czech Republic and serves as both an undergraduate and postgraduate teaching department in algesiology and neuromodulation techniques.

Statistics for 2025:

- **Number of outpatient examinations: 6,223**
- **Number of hospitalised patients: 115**
- **Number of consultation examinations: 570**
- **Number of neuromodulation procedures: 25**
- **Number of radiofrequency procedures: 52**
- **Number of neuraxial procedures (epidural procedures, caudal blocks): 512**
- **Number of procedures performed under ultrasound guidance: 667 (peripheral nerve blocks, soft tissue procedures, etc.)**

New methods and procedures:

- Expansion of radiofrequency methods and indications for radiofrequency treatment in nociceptive and peripheral neuropathic pain
- Single-shot and continuous nerve blocks with catheter placement under ultrasound and neurostimulator guidance during hospitalisation
- Testing of pain conditions using the Dolosys PainTracker
- Continuation of the programme of spinal cord stimulation implantation, peripheral nerve stimulation and peripheral field stimulation
- Use of medical cannabis and introduction of methadone into pain pharmacotherapy
- Development of a new telemetric procedure (including creation of a reimbursement code within the Czech reimbursement system) for remote monitoring and programming of neuromodulation devices
- Non-invasive brain stimulation – transcranial direct current stimulation (tDCS)

Unique equipment:

- PainTracker – Dolosys device for evaluation of the RIII reflex, pain testing and analgesia indication
- Radiofrequency generator for invasive pain treatment (thermolesioning, pulsed RF)
- Neurostimulator for the detection of nerve structures and guidance during invasive procedures
- VERSANA ACTIVE ultrasound system for guidance of targeted nerve and soft tissue blocks
- Neurostimulation systems for implantation of SCS and PNS systems and monitoring of neuromodulation methods, including programming devices
- tDCS neuromodulation device for non-invasive transcranial stimulation

Significant events in 2025:

- **Among the notable achievements and activities of 2025** were the publication of **one professional book and one book chapter**, the co-organization of several postgraduate interventional courses and workshops, active participation in **six scientific conferences and symposia**, and the organization of an **International Neuromodulation Day** focused on pain management, neuromodulation, and rehabilitation.

4. Department of Sports Medicine

Deputy Head of Department: **doc. MUDr. Jiří Radvanský, CSc.**

Head Nurse: **Bc. Martina Polanecká**

Basic description:

The Department of Sports Medicine is one of the department's outpatient units. Its activities focus primarily on functional diagnostics and exercise therapy for part of Prague and the Central Bohemian Region, in cooperation with other centres of Motol University Hospital, as well as for other regions and, in the case of congenital heart defects, with nationwide coverage. The department performs exercise functional diagnostics also in wheelchair users. It is the largest training centre for functional exercise diagnostics in the Czech Republic for the purposes of sports medicine and paediatric cardiology. It provides functional diagnostics and cooperates with the only paediatric sports cardiology centre in the Czech Republic.

In 2025, approximately 1,900 athletes underwent preventive sports medical examinations and 2,550 patients indicated for exercise testing as part of differential diagnosis, long-term follow-up or preoperative assessment were examined. Within the exercise therapy programme, including individually tailored exercise therapy and consultations on nutrition and lifestyle, we provided 4,193 interventions for 518 clients.

A cardiovascular rehabilitation programme and preoperative exercise therapy with rehabilitation for patients with abdominal hernia are under way.

Probíhá program kardiovaskulární rehabilitace a předoperační pohybová terapie s rehabilitací u pacientů s abdominální hernií.

New methods and procedures:

- Expansion of the cardiovascular rehabilitation programme to include ECG monitoring in high-risk patients
- Exercise laryngoscopy introduced for the diagnosis of exercise-induced laryngeal obstruction (EILO), in cooperation with the Department of Otorhinolaryngology and Head and Neck Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital
- Exercise therapy for oncology patients
- Specialised clinics for diseases associated with physical activity
- Ongoing multicentre studies (e.g. in patients with significant aortic regurgitation or coarctation of the aorta)
- Introduction into clinical practice of strength training using the blood flow restriction method

Significant events in 2025:

- Ongoing multicentre studies (e.g. in patients with significant aortic regurgitation or coarctation of the aorta)
- Lecturing and organisational activities at conferences in the Czech Republic with international and domestic participation
- Active participation in the provision of medical cover for international sporting events
- Participation of representatives of the Czech Society of Sports Medicine in the UEMS Sports Medicine Section meeting, Riga, May 2025 (Slabý, Illinger)

Lecturing and organisational activities:

- **Prague Prevention 2025**, 23–24 January 2025
Clinical Practice in Sports Cardiology: Case Reports from Czech Departments (Slabý)
- **Webinar Webinar on assessing medical fitness for physical education in schools**, 26 March 2025
Health Assessment in Relation to Physical Education and Sport (Slabý)
- **Symposium of Sports Medicine and Other Sciences in Elite Sport**
Dřítěč, 27 –29 March 2025 Concussion in Sport – SCAT6 (Slabý)
Exercise-Induced Laryngeal Obstruction (Kalendová)
- **Exercise Therapy 2025**, Faculty of Physical Education and Sport, Prague, 10 April 2025
The Child Who Avoids Movement (Radvanský)
Ambulatory Monitoring during Physical Activity (Slabý)
Family Guide to a Healthy Lifestyle, or Cheerfully with the Veselýs (Vitujeová)
Principles of Developmental Kinesiology in the Context of Locomotion (Růžek)
- **UNIFY ČR Congress, Brno**, 19–20 September 2025
Blood Pressure and Physical Activity (Slabý)
Setting the Load on a Bicycle Ergometer in Model Patients (Rampová)
- **STOB Seminar: Childhood Obesity – Specifics of Working with Child Clients and Their Families**, Prague, 20–21 September 2025
- Physical Activity in Children with Overweight and Obesity (Vitujeová)

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

Head of Department: **MUDr. Martin Hložánek, Ph.D., FEBO**

Deputy Head of Department: **MUDr. Milan Odehnal, MBA**

Head Nurse: **Mgr. Jana Králíčková**

Basic description:

The Department of Ophthalmology for Children and Adults provides comprehensive preventive diagnostics and therapeutic care to patients from birth to advanced age. In paediatric ophthalmology, the department serves as a highly specialised consultation centre for the Czech Republic and provides consultation care for hospitalised children and adults at Motol University Hospital. The inpatient section has 25 beds. The department's supporting facilities include operating theatres, which have been under the organisational management of the Department of Ophthalmology since the end of 2024. The department operates an adult outpatient unit and a paediatric outpatient unit, both of which include minor procedure rooms for minor surgical procedures and the administration of intravitreal injections. The department also provides a consultation service for both sections of the hospital. In 2025, 1,580 operations were performed at the department, a year-on-year increase of 20.6%, along with 386 minor procedures in the procedure room, a year-on-year decrease of 26%. The most common surgical procedures were cataract surgery (552), strabismus surgery (150) and examinations under general anaesthesia (137). During 2025, 738 patients were hospitalised, a year-on-year decrease of 11%. A total of 15,347 examinations were performed in the paediatric outpatient unit, a year-on-year increase of 8%; 16,301 examinations in the adult outpatient unit, a year-on-year increase of 12%; and 4,095 emergency examinations, a year-on-year decrease of 9%. A total of 2,009 examinations were performed in the orthoptic outpatient units. The department performed a total of 2,614 consultation examinations within Motol University Hospital, a year-on-year decrease of 3%.

Specialised outpatient units and clinics:

- Orthoptic Outpatient Unit
- Centre for the Care of Children with Retinopathy of Prematurity
- Clinics for children and adults: Strabismus, Glaucoma, Cataract, Oncology, Vitreoretinal, Diabetology, Uveology and Neuro-Ophthalmology Clinics
- Centre for Optometry and Contact Lens Fitting, including special fittings

New methods and procedures:

- New surgical techniques in the treatment of blepharophimosis in children
- New surgical method of brachytherapy for ciliary body melanoma with preparation of a corneal lamella to protect limbal stem cells
- Development of retinal assessment in non-cooperative children using handheld optical coherence tomography, particularly in patients with retinoblastoma, retinopathy of prematurity and congenital glaucoma
- Intravitreal treatment of paediatric patients with retinoblastoma in cooperation with the Department of Radiology and the Department of Paediatric

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

- Intra-arterial treatment of adult patients with melanoma in cooperation with the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital
- Treatment of lens subluxation and dislocation via the pars plana with retropupillary implantation of an iris-claw intraocular lens, along with other new methods of intrascleral fixation using the flange technique, and implantation of an artificial iris in children with aniridia
- Further development of new techniques within the spectrum of glaucoma surgery (360° trabeculotomy)

Unique equipment:

- OCT Envisu (Leica) – handheld OCT (optical coherence tomography) for detailed examination of individual retinal layers in non-cooperative children and patients under general anaesthesia; standard examinations are performed in a sitting position and therefore cannot be used for patients under general anaesthesia. This is the only device of its kind in the Czech Republic and is used mainly in young children with retinoblastoma. The Národ dětem Foundation contributed 70% of the purchase of the device.
- Nd:YAG laser for use in the supine position (Meridian MRQ).
- RetCam – camera for the diagnosis of vitreoretinal pathologies, including an angiography module. It is used mainly in paediatric patients with retinoblastoma, retinopathy of prematurity and other retinal diseases.

Significant events in 2025:

- MUDr. Hložánek was President of the 33rd Annual Congress of the Czech Ophthalmological Society in Prague (September 2025). This is the largest specialist ophthalmology event in the Czech Republic, and a number of innovations were presented. Attendance was the highest in the congress's history, with more than 1,600 participants, and the congress was rated as the highest-quality event in its history.
- Doc. MUDr. Pochop et al. are successfully continuing intravitreal chemotherapy in children with retinoblastoma, working on the development of a hydrogel implant for a local depot chemotherapy effect, and introducing a new method of intra-arterial therapy for uveal melanoma in adults.
- MUDr. Ferrová participated in a multidisciplinary team for the treatment of peripheral facial nerve palsy.

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

*Head of Department: **prof. MUDr. Vojtěch Havlas, Ph.D.***

*Deputy Head of Department: **MUDr. Daniel Rybka** (until 31 May 2025)*

*Deputy Head of Department: **doc. MUDr. Jakub Kautzner, Ph.D.** (from 1 June 2025)*

*Head Nurse: **Bc. Lucie Plocová, DiS.***

Basic description:

The Department of Paediatric and Adult Orthopaedics and Traumatology provides orthopaedic and trauma care for both paediatric and adult patients, not only in its catchment area, but also as a highly specialised consultation department for the Czech Republic as a whole. Thanks to its focus, it is one of the few orthopaedic departments in the Czech Republic to cover the full spectrum of orthopaedic and trauma care.

The department participates in the preparation and organisation of congresses, in particular the organisation of the Smetana Evenings within the Czech Medical Association of J. E. Purkyně and the annual Spring Orthopaedic Symposium. Members of the department regularly give active lectures at symposia and congresses in the Czech Republic and abroad.

As active members, doctors from the department are repeatedly elected to the presidia of Czech specialist societies for orthopaedics and arthroscopy – ČSOT and SSTA. As part of international cooperation, senior staff are members of foreign specialist societies, including SICOT, ESSKA and ISAKOS, where they also hold positions on extended boards and advisory committees. Prof. Havlas has been the SICOT national delegate since 2019. Members of the department work closely with specialist periodicals as reviewers (ACHOT, KSSTA, AJSM).

In the long term, the department has been involved in implementing new surgical procedures and techniques in routine practice, thereby supporting the development of orthopaedics and its subspecialties. As part of its research activities and grant projects, it currently works with other leading orthopaedic departments across the Czech Republic, institutes of the Czech Technical University and the Czech Academy of Sciences in Prague, Brno University of Technology, and VSB – Technical University of Ostrava.

In recent years, medical procedures at the department have been enhanced by a number of innovations and successful treatment methods that help improve our patients' quality of life, particularly in minimally invasive shoulder and hip surgery, osteotomies around the knee joint, endoprosthetics, paediatric and adult traumatology, and the treatment of congenital defects and post-traumatic deformities.

In 2025, there were 1,649 hospitalisations of paediatric patients and 2,229 hospitalisations of adult patients. A total of 3,654 operations were performed, including 1,399 procedures in paediatric patients and 2,255 procedures in adult patients, of which 914 were joint replacements.

The total number of outpatient treatments in 2025 was 53,199, including 32,139 patients in the paediatric section and 21,060 patients in the adult section.

Specialised outpatient units / clinics / centres:

- Onco-Orthopaedics Outpatient Unit
- Scoliosis Outpatient Unit
- Sports Traumatology Outpatient Unit for Paediatric and Adult Patients
- Specialised Outpatient Unit for Arthroscopic Procedures
- Specialised Hip Arthroscopy Outpatient Unit
- Outpatient Unit for Neurogenic Disorders
- Outpatient Unit for Congenital Skeletal Defects
- Outpatient Unit for Primary and Revision Large Joint Replacement Surgery
- Outpatient Unit for Complex Shoulder Surgery
- Adult Musculoskeletal Ultrasonography
- Neonatal Hip Ultrasonography

New methods and procedures:

- In the field of paediatric onco-orthopaedics, the first custom-made scapula and shoulder joint replacement was performed.
- “Growing endoprosthesis” surgery was further developed.
- In cooperation with the Czech implant manufacturer Prospan, the first implantations of custom-made partial resurfacing replacements of the femoral head were performed in young patients with segmental necrosis. These were the first implantations of this type in the Czech Republic.
- Since 2007, the department has used a computer navigation system for joint replacement implantation. In 2024, a robot-assisted surgery programme using the ROSA and CORI systems was launched. In 2025, testing of the VELYS system was initiated as part of a pilot data collection project for the Institute of Health Information and Statistics of the Czech Republic. Our department is one of five reference centres in the Czech Republic.
- Our department was the first in a university hospital in the Czech Republic to introduce the VELYS robotic assistant into clinical practice to assist orthopaedic surgeons during total knee replacement surgery. The system makes it possible to plan and perform procedures tailored to each patient and provides the surgeon with precise real-time information during surgery regarding implant positioning and soft tissue balancing in the knee joint.
- “Robotic assistance allows us to perform operations with much greater precision than if we relied solely on a conventional knee replacement system. Every knee is anatomically slightly different – the robot helps us identify the ideal alignment so that the joint functions as naturally as possible after replacement,” explains Professor Havlas.
- The robotic system does not operate independently – the surgeon remains fully in control of the procedure. The robot only provides data, guides the surgeon towards the most suitable positioning of the components, and assists with precise bone resections. This improves surgical precision and minimises soft tissue trauma, resulting in less postoperative pain, faster recovery and shorter hospital stays for patients.
- Introduction of the ERAS system in elective joint replacement surgery. Introduction of an accelerated modern pathway for patients scheduled for knee or hip replacement surgery. This is a comprehensive set of measures ensuring faster patient flow through the system, a safer surgical approach, minimisation of the risk of complications, and a model that is more

advantageous both economically and from the patient's perspective by reducing the length of hospitalisation following joint replacement surgery.

Unique equipment:

- Two Canon Xario 100 Platinum and Xario 200 Platinum ultrasound systems used both for routine neonatal hip screening and for specialised ultrasound examination and treatment of the musculoskeletal system
- SIMBIONIX ARTHRO surgical simulator for arthroscopic procedures
- 2× ultra-modern 4K arthroscopy towers used in both the paediatric and adult sections of the department
- Optical PC navigation system used for knee replacement surgery
- Robotic knee navigation system (on loan)
- Full implementation of the MediCAD software planning system at all access points in outpatient units, wards and operating theatres for precise osteotomy calculations and planning of total knee and hip replacement surgery

Significant events in 2025:

- Prof. V. Havlas was elected Chair of the Czech Society for Orthopaedics and Traumatology with effect from 1 January 2026.
- Doc. J. Kautzner was elected Chair of the Arthroscopy Academy, z.s. - an educational platform in orthopaedics and sports traumatology that organises specialist internships and courses.
- Organisation of the Spring Orthopaedic Symposium conference, April 2025 – theme: “Current Trends and Treatment Options in Hip Joint Pathology”.
- In cooperation with the Institute for Postgraduate Medical Education, prof. V. Havlas helped launch a project of postgraduate cadaveric arthroscopy skills courses.

Publications:

A) *Zahraniční publikace:*

- JURČA, Jiří (K); VLACH, Martin; HAVLAS, Vojtěch. Total joint arthroplasty of the thumb CMC joint. Archives of Orthopaedic and Trauma Surgery. 2025, 145(1), 127. ISSN: 0936-8051. DOI:10.1007/s00402-024-05663-1. IF2024 = 2,1; (Q2; Q2); AIS2024 = 0,731; (prefinal JCR2024 - říjen 2025)
- AL-REDOUAN, Azzat (K); HUDÁK, Radovan; OLSON, Carl Vaclav Lim; D'SOUZA, Ayrton; HAVLAS, Vojtěch; KACHLÍK, David. Analysis and optimization of plate fixation fitness in acromion fracture reduction by calculating dry scapulae and x-rays acromion curvature. Annals of Anatomy. 2025, 260(June), 152665. ISSN: 0940-9602. DOI: 10.1016/j.aanat.2025.152665. IF2024 = 1,7; (Q2); AIS2024 = 0,479; (prefinal JCR2024 - říjen 2025)
- NIEMEYER, P; HANUS, Martin; BELICKAS, J; LÁSZLÓ, T; GUDAS, R; FIODOROVAS, M; CEBATORIUS, A; PASTUCHA, M; IZADPANAH, K; PROKEŠ, J; SISÁK, K; MOHYLA, M; FARKAS, C; KESSLER, O; KYBAL, S; SPIRO, R; TRATTNIG, S; KÖHLER, A; KIRNER, A; GAISSMAIER, C (K). Treatment of Large Cartilage Defects in the Knee by Hydrogel-Based Autologous Chondrocyte Implantation: A 5-Year Follow-Up of a Prospective, Multicenter, Single-Arm Phase III Trial. Cartilage. 2025, E-PUB(), 19476035251334737. ISSN: 1947-6035. DOI: 10.1177/19476035251334737. IF2024 = 2,7; (Q2); AIS2024 = 0,845; (prefinal JCR2024 - říjen 2025)

B) *Domácí publikace:*

- SALÁŠEK, Martin (K); STANČÁK, Andrej; ČEPELÍK, Martin; PEŠL, Tomáš; HAVLAS, Vojtěch; PAVELKA, Tomáš; HAVRÁNEK, Petr; DŽUPA, Valér. Pelvic avulsion fractures in children: a retrospective study from four trauma centers. Acta Chirurgiae Orthopaedicae et

Traumatologiae Českoslovaca. 2025, 92(1), s. 7-14. ISSN: 0001-5415. DOI: 10.55095/achot2024/045.

IF2024 = 0,4; (Q4); AIS2024 = 0,106; (prefinal JCR2024 - říjen 2025)

- VLACH, Martin (K); MÁŠKA, David; SCHMORANZOVÁ, Alena; KŠÍROVÁ, Eliška; HAVLAS, Vojtěch. Funkční výsledky léčby dětských lupavých prstů – výsledky dvou center. Acta Chirurgiae Orthopaedicae et Traumatologiae Českoslovaca. 2025, 92(3), s. 147-152. ISSN: 0001-5415. DOI: 10.55095/achot2024/058.

IF2024 = 0,4; (Q4); AIS2024 = 0,106; (prefinal JCR2024 - říjen 2025)

- VLACH, Martin (K); KREJČÍ, Dominik; HAVLAS, Vojtěch. Funkční výsledky léčby kladívkového prstu ruky s kostním fragmentem metodou extenčního bloku Ishiguro - střednědobé výsledky. Acta Chirurgiae Orthopaedicae et Traumatologiae Českoslovaca. 2025, 92(2), s. 77-82. ISSN: 0001-5415. DOI: 10.55095/achot2024/059.

IF2024 = 0,4; (Q4); AIS2024 = 0,106; (prefinal JCR2024 - říjen 2025)

- HANÁK, Filip (K); KOUKOLSKÁ, Veronika; KRSKOVÁ, Barbora; KYNČL, Martin; HAVLAS, Vojtěch. Fixation of Osteochondral Lesions of the Knee Using MAGNEZIX Implants in Pediatric Patients: Midterm Clinical and MRI Results. Acta Chirurgiae Orthopaedicae et Traumatologiae Českoslovaca. 2025, 92(3), s. 137-146. ISSN: 0001-5415. DOI: 10.55095/achot2024/071.

IF2024 = 0,4; (Q4); AIS2024 = 0,106; (prefinal JCR2024 - říjen 2025)

- NOVYSEDLÁK, René (K); TAVANDŽIS, Janis; VALÁŠEK, Peter; HUDÁK, Radovan; VACHTENHEIM JR., Jiří; LISCHKE, Robert; SCHÜTZNER, Jan. Hrudní drenáž – indikace, technika a management komplikací. Rozhledy v chirurgii. 2025, 104(4), s. 139-145. ISSN: 0035-9351. DOI: 10.48095/ccrvch2025139.

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

Head of Department: **doc. MUDr. Vladimír Beneš, Ph.D.**

Deputy Head of Department: **prof. MUDr. RNDr. Ondřej Bradáč, Ph.D.**

Head Nurse: **Bc. Tereza Drbohlavová**

Basic description:

The Department of Neurosurgery for Children and Adults focuses on specialised acute and elective neurosurgical care for paediatric and adult patients and provides consultation care across the full scope of the specialty. Particularly in paediatric neurosurgery, it is the highest-volume department of its kind in the Czech Republic. The department provides undergraduate and postgraduate teaching and engages in scientific and research activities. In addition to patients from its clearly defined catchment area of Prague and the surrounding region, the department accepts patients from across the Czech Republic and, for certain specialised procedures, also from abroad. **In 2025, the department maintained the trend of increased surgical activity in both sections, particularly in neuro-oncology. The number of hospitalised patients and outpatients continued to rise.**

Together with the Department of Paediatric Neurology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and the Department of Neurology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, the department forms part of the Highly Specialised Care Centre for Drug-Resistant Epilepsies and the Epilepsy Research Centre Prague (EpiReC), a consortium of the 2nd Faculty of Medicine, Charles University, Motol University Hospital, the Czech Academy of Sciences and the Czech Technical University. In cooperation with the Department of Neurology, 2nd Faculty of Medicine, Charles University and Motol

University Hospital, the department is also part of the Highly Specialised Cerebrovascular Care Centre. In cooperation with the Department of Paediatric Haematology and Oncology, the Department of Paediatric Neurology and other departments and institutes, primarily within the paediatric section of the hospital, the unique national Centre for Paediatric Neuro-Oncology continues its activities and has been successfully presented at professional forums and in the media, including Czech Radio and Na plovárně.

Specialised outpatient units / clinics / centres:

- Paediatric Neurosurgery Outpatient Unit
- Adult Neurosurgery Outpatient Unit focused on cranial and spinal conditions

New methods and procedures:

- Monitoring of neurophysiological functions during brain and spinal cord surgery using a multimodal device, including intraoperative stimulation of brain centres in young children
- Continuation of baclofen pump implantation for the treatment of generalised spasticity in children and adults
- Surgical treatment of craniosynostosis, where the most complex deformities are treated in cooperation with a maxillofacial surgeon. In recent years, emphasis has been placed on minimally invasive endoscopic procedures dependent on early diagnosis
- Focus on minimally invasive approaches in the treatment of degenerative spinal disorders, including endoscopic spinal surgery
- Vertebroplasty and stentoplasty in the treatment of osteoporotic spinal fractures, in cooperation with the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, and the Department of Rehabilitation and Sports Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital
- Radiofrequency neuromodulation for pain conditions, including vertebrogenic pain and peripheral nerve pain
- In multidisciplinary cooperation with maxillofacial surgeons, ENT specialists and plastic surgeons, the department treats extensive lesions of the skull base and face, where resection is often followed by reconstructive surgery with coverage of defects using microvascular free flap transfer
- Use of highly specialised multimodal monitoring in patients with craniocerebral trauma as part of neurotraumatology
- Within the neurovascular programme, both surgical and endovascular techniques are being further developed in cooperation with the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital
- Further refinement and routine use of frame-based and frameless stereotactic techniques, particularly for implantation of deep brain electrodes and brain biopsies
- Continuation of the programme for the treatment of refractory epilepsy within the Motol University Hospital Epilepsy Centre. Stereotactic implantation of deep brain electrodes for subsequent long-term video EEG monitoring in drug-resistant epilepsy and for resective epilepsy surgery procedures
- Radiofrequency thermoablation

- Further development of endoscopic surgery of the ventricular system, including third ventriculostomy and endoscopic biopsy procedures

Unique equipment:

- Zeiss Kinevo microscopes
- Endoscopic CUSA system by Sörling for tumour extirpation during endoscopic procedures
- Exoscope – digital microscope by Aesculap enabling 3D surgery
- Medtronic electromagnetic neuronavigation without the need for head fixation, including frameless stereotaxy, in the paediatric central operating theatres
- Brainlab neuronavigation integrated with the Zeiss Pentero microscope
- Intraoperative ultrasound system
- M-Turbo ultrasound system by Sonosite
- InVent endoscope (Aesculap), including instruments and endoscopic instrumentation with a wide working channel

Significant events in 2025:

- Continuation of the international Cerebellar Mutism Study (CMS Study), including its expansion by a specialised MRI protocol within the FASTIGIAL study
- New international study in the field of medulloblastoma, the ISOP Study
- Continuation of two grants from the Czech Health Research Council: Comprehensive Multidomain Diagnostic Battery for NPH and PediTuMRI
- Newly awarded Czech Health Research Council grant with the department participating as co-investigator: Use of Modern Technologies in an Individualised Approach to the Surgical Treatment of Craniosynostosis in Paediatric Patients
- Awarding of the organisation of the Czech Neurosurgical Society Working Days to the department for 2028

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

*Head of Department: **MUDr. Petra Hlíňáková, Ph.D., MBA***

*Deputy Head of Department: **MUDr. Milan Hubáček***

*Head Nurse: **Mgr. Václava Kolomazníková***

Basic description:

The Department of Stomatology for Children and Adults (SKDaD) specialises in paediatric and adolescent dentistry for both healthy patients and patients with disabilities, with multidisciplinary cooperation involving general dental practitioners, paediatric dentists, periodontists, prosthodontists, orthodontists, dentoalveolar surgeons and cranio-maxillofacial surgeons in the treatment of congenital and acquired developmental defects, injuries and tumours. The department includes a paediatric centre for distraction osteogenesis of the facial skeleton, a centre for congenital developmental defects and a temporomandibular joint centre for temporomandibular joint replacements. In cooperation with other departments and institutes, including neurosurgery, ENT, ophthalmology, oncology, plastic surgery, biology and genetics, the department provides the diagnosis and treatment of congenital and acquired defects of the splanchnocranium and neurocranium, and further develops microscopic cranio-maxillofacial surgery as well as dental and dentoalveolar microscopy.

In 2025, a total of 16,832 outpatient treatments and 653 day surgery procedures were performed, including 361 dental treatments under general anaesthesia and 292 surgical procedures. A total of 190 procedures were performed under analgosedation. A total of 801 patients (+322 accompanying persons) were hospitalised in the inpatient department and 830 operations were performed, including 260 dental treatments of patients with disabilities under general anaesthesia. The number of requested consultation examinations for Motol University Hospital patients hospitalised outside SKDaD was 2,027.

X-ray examinations: 2364 OPG, 563 TL, 574 CBCT, 1250 IO, 281 BTW.

Specialised outpatient units:

- Maxillofacial Surgery (including congenital developmental defects)
- Dentoalveolar Surgery
- Temporomandibular Joint Disorders in Children and Adolescents
- Oncology Outpatient Unit
- Salivary Gland Disorders in Children
- Prosthodontics Outpatient Unit
- Implantology Outpatient Unit
- Periodontology Outpatient Unit
- Orthodontics Outpatient Unit
- Orthodontic-Surgical Outpatient Unit Focused on the Treatment of Jaw Anomalies
- Orthodontic-Surgical Outpatient Unit Focused on the Treatment of Impacted Teeth
- Outpatient Unit for Children with Special Needs
- Outpatient Unit for Children with Rare Diseases

New methods and procedures:

- Augmentation of jaw bone defects using 3D-modelled titanium mesh
- Care for patients with clefts, including comprehensive dental care
- Orthognathic surgical procedures, including a specialised clinic and 3D modelling, planning and reconstruction
- Dental implantology and guided bone regeneration
- Dental treatment of paediatric patients with disabilities under general anaesthesia and analgo-sedation
- Temporomandibular joint surgery, including subtotal joint replacement
- Distraction of the facial skeleton in children with congenital developmental defects
- Digital stomatology using intraoral and facial scanners

In research and development, we work with the following departments and institutions:

- with the Department of Computing and Control Engineering of the Faculty of Chemical Engineering, we analyse the merging of 2D and 3D images, X-rays and working models in the development of virtual treatment planning, including the printing of individual components
- with the Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University, we evaluate laser- and ultrasound-based micro-preparation techniques
- in cooperation with the Department of ENT, we prepare special obturator plates and monitor their effect on the functional reconstruction of patients with orofacial defects by monitoring swallowing and phonation
- with the Institute of Biology and Medical Genetics, 2nd Faculty of Medicine, Charles University and Motol University Hospital, we provide long-term follow-up for children and adolescents with rare diseases and perform dental treatment according to a long-term treatment plan. Using intraoral and facial scanners, we monitor treatment during growth, with a focus on comparison with young healthy individuals. 3D analyses and model reconstructions allow us to use CAD/CAM technology to work with virtual impressions, 3D-printed

models, and computer-manufactured crowns, bridges and implants. We incorporate these procedures into the department's clinical stomatology practice

- in clinical practice, we generate 3D models of the dental arch and jaw relationships for orthodontic, surgical and prosthodontic treatment

Unique equipment:

- CBCT I-CAT 3D imaging system
- KAVO 2D and 3D imaging system
- OP 3D Pro orthopantomograph
- 3SHAPE TRIOS intraoral scanner
- Stereolithographic 3D printer
- Flexion TWIN Lite/White dental microscope

Significant events in 2025:

- As part of European cooperation, the department became involved in the following studies:
 - a) **Rare congenital and developmental diseases of the orofacial system** – ERN CRANIO
 - b) **Congenital and developmental defects of the orofacial system** (Centre for the Czech Republic within the EU)
- Completed postgraduate specialist training
 - Oral and Maxillofacial Surgery: MDDr. Eliška Šedivá
- Completed Ph.D. doctoral study: MUDr. Pavel Hyšpler
- On 21 September 2025, prof. MUDr. Tatjana Dostálová, DrSc., MBA received the **honorary title “Personality of Czech Stomatology”** from the Czech Dental Chamber.
- On 30 September 2025, prof. MUDr. Tatjana Dostálová, DrSc., MBA received a letter of thanks from the Dean of the 2nd Faculty of Medicine, Charles University, for her long-standing and exceptional contribution to the faculty.

Publications:

- Articles in impact-factor journals: 8
- Articles in peer-reviewed journals: 3
- Book co-authorship: 1

Common Examination and Therapeutic Units

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

*Head of Department: **prof. MUDr. Ing. Lukáš Lambert, Ph.D., MBA***

*Deputy Head - adult section: **MUDr. Vojtěch Suchánek***

*Deputy Head - paediatric section: **Irena Buksakowska, M.D., Ph.D.***

*Chief Radiographer - adult section: **Mgr. Tomáš Schilla***

*Chief Radiographer - paediatric section: **Alice Jará***

Basic description:

The Department of Radiology is a major university department providing highly specialised healthcare and has long held a leading position among radiology departments not only in the Czech Republic, but also within the wider European context. The department is a modern centre of comprehensive diagnostic imaging and interventional radiology, systematically integrating top-level clinical practice, research, innovation, and undergraduate and postgraduate teaching within the country's largest tertiary university hospital.

The department provides the full spectrum of preventive, diagnostic and therapeutic care in the field of medical imaging and serves as a national reference centre, particularly in paediatric radiology, interventional radiology, and imaging of congenital heart disease. In these areas, the department provides highly specialised consultation services for patients from across the Czech Republic and, in indicated cases, from abroad. The department provides continuous 24/7 operation of X-ray, CT and MRI diagnostic imaging services, while also ensuring round-the-clock interventional radiology care. Its long-established specialist expertise and high concentration of experienced specialists make the department one of the leading diagnostic imaging centres in Central Europe. The department operates continuously and represents a key diagnostic and therapeutic hub of Motol University Hospital.

Equipment and infrastructure:

The Department of Radiology has extensive equipment infrastructure that enables even the most demanding diagnostic and therapeutic procedures to be performed while maintaining the highest standards of patient safety and high-quality image documentation.

Magnetic resonance imaging:

A cornerstone of the department's diagnostic activities is its four magnetic resonance imaging (MRI) systems, which enable a broad spectrum of clinical and research examinations to be performed.

The MRI system installed in the paediatric section of the department is used primarily during normal working hours for examinations of paediatric patients under general anaesthesia. This service enables safe, high-quality imaging even in the youngest and most clinically complex patients and is an essential part of care for paediatric patients at Motol University Hospital as well as at other healthcare institutions throughout the Czech Republic.

The MRI systems in the adult section of the department provide examinations for both adult and paediatric patients and also constitute key infrastructure for national

and international clinical and experimental research projects. The systems are used not only for patients of Motol University Hospital, but also for patients referred from other healthcare institutions and outpatient specialists wishing to make use of the exceptional expertise possessed by the department's radiologists and radiographers. The department is part of the network of accredited centres for prostate cancer screening.

During 2025, MRI operations in the adult section of the department underwent major optimisation, including the extension of routine operating hours into the evening and to weekends and public holidays. These measures led to a substantial increase in the number of patients examined, a significant reduction in waiting times, and the more efficient use of imaging capacity. Thanks to this reorganisation, the vast majority of patients at Motol University Hospital no longer need to undergo MRI examinations at external facilities and can instead benefit from direct integration with hospital information systems and the clinical care provided by a number of specialised centres at Motol University Hospital. Clinicians therefore have access to complete image documentation within a unified hospital system, expert radiology reports prepared by specialists from one of Europe's leading radiology departments, and the possibility of direct multidisciplinary consultation.

Computed tomography:

The department operates three computed tomography (CT) scanners in the adult section, enabling a broad spectrum of diagnostic examinations, including complex cardiovascular imaging studies and CT-guided interventions. An additional CT scanner installed in the paediatric section of the department is used primarily for paediatric imaging, while also being efficiently utilised for patients from the adult section of the hospital. The department is part of the network of accredited centres for lung cancer screening.

Interventional radiology:

The department provides the full spectrum of endovascular procedures in both the arterial and venous systems, including the portal venous system, with the exception of intracardiac interventions. Care is systematically provided for both adult and paediatric patients. Thanks to the outstanding expertise of its medical team, extensive experience and state-of-the-art technical infrastructure, the department is one of the most comprehensive interventional radiology centres in the Czech Republic and serves as a major referral centre for highly specialised procedures.

The department has extensive experience in the treatment of acute vascular occlusions and performs both mechanical and aspiration thrombectomy in patients with pulmonary embolism and embolic stroke, as well as catheter-directed thrombolysis in both the arterial and venous systems.

An important component of care is the comprehensive management of vascular access for haemodialysis and emergency embolisation procedures for life-threatening bleeding, particularly gastrointestinal, pulmonary, post-traumatic and iatrogenic bleeding.

In addition to vascular interventions, the department also performs the full spectrum of image-guided non-vascular interventional procedures, including biopsies, drainage procedures, ablation techniques and other minimally invasive therapeutic procedures. More recently, the interventional radiology team has also systematically focused on the diagnosis and interventional treatment of the lymphatic vessels. Thanks to its continuous 24/7 service, the department is able to provide emergency

interventional procedures at any time and serves as a key referral centre for a large catchment area as well as for highly specialised care.

Densitometry:

The department operates a modern densitometry unit dedicated to the accurate assessment of bone mineral density (BMD). Densitometry examinations are used to diagnose osteoporosis and other metabolic bone diseases, as well as for the long-term monitoring of treatment efficacy. Both paediatric and adult patients are examined, including outpatients and hospitalised patients, across a broad spectrum of clinical indications. The modern densitometry system enables highly accurate and reproducible measurement of bone mineral density, including comprehensive assessment of osteoporotic fracture risk and monitoring of changes in bone mass over time. The department is also actively involved in the Population-Based Osteoporosis Early Detection Programme, thereby making a significant contribution to preventive care for patients at risk of osteoporotic fractures.

Mammography and breast ultrasound:

The department's breast imaging unit provides comprehensive diagnostic and interventional care at a high professional level and is a major centre for specialised breast diagnostics.

The unit performs mammographic examinations using standard and supplementary views, ductography, and stereotactically guided preoperative localisation of non-palpable lesions using localisation wires.

The diagnostic spectrum also includes stereotactically guided biopsies, including conventional 14G core needle biopsies and 10G vacuum-assisted biopsies, enabling precise histopathological diagnosis even in very small or difficult-to-access lesions.

The ultrasound section of the breast imaging unit provides both primary and supplementary examinations in conjunction with mammography and also serves as a platform for a broad spectrum of interventional procedures. Ultrasound-guided procedures include preoperative localisation of lesions using localisation wires or radiopharmaceuticals, core needle biopsies of lesions, and cyst aspiration.

Ultrasound imaging:

The department's ultrasound unit provides the full spectrum of ultrasound examinations for patients from all clinical departments of Motol University Hospital as well as for external patients. The unit is part of the network of accredited centres participating in the Abdominal Aortic Aneurysm Early Detection Programme.

In addition to standard ultrasound examinations, including imaging of the abdomen and pelvis, neck examinations including the thyroid gland and lymph nodes, and examinations of joints and soft tissues, the department also provides a range of highly specialised examinations:

- Doppler ultrasound examinations of arteries and veins, including the portal venous system and renal arteries,
- contrast-enhanced ultrasound (CEUS) examinations with intravenous contrast administration,
- ultrasound elastography,
- fusion ultrasound imaging using available CT or MRI image documentation.

These advanced imaging examinations enable a more accurate diagnosis of vascular, oncological and inflammatory diseases and represent an important component of the comprehensive diagnostic care provided by the department.

In addition to standard ultrasound examinations, the paediatric section of the department performs several specialised diagnostic programmes:

- comprehensive Doppler vascular imaging, including the diagnosis of vascular malformations,
- functional imaging of the urinary tract using contrast-enhanced voiding urosonography (ceVUS),
- ultrasound elastography enabling a quantitative assessment of tissue stiffness,
- ultrasound imaging of joints and the musculoskeletal system,
- fusion ultrasound imaging enabling a direct comparison with previous MRI, CT, PET/MRI or PET/CT examinations.

Our procedures include ultrasound examination through the large fontanelle, comprehensive diagnosis of diseases of the neck and lymph nodes, evaluation of structural changes of the thyroid gland and examination of the upper mediastinum including the thymus and large vessels. Paediatric oncological diseases account for a significant proportion of diagnostic activity. Another important area is the ultrasound diagnosis of trauma and diseases affecting muscles, tendons, joints and other musculoskeletal structures.

Operating theatres:

The Department of Radiology provides imaging technology support in the operating theatres of Motol University Hospital.

Bedside imaging:

The Department of Radiology provides continuous bedside imaging services for patients whose clinical condition does not allow safe transport to the department. This care is provided in both the adult and paediatric sections of the hospital and is an integral part of the comprehensive acute and intensive care system. Mobile ultrasound and X-ray examinations are performed directly at the patient's bedside, particularly in intensive care units and resuscitation departments, as well as on standard inpatient wards. This model of care enables rapid diagnosis, immediate treatment decision-making, and minimises the risks associated with transporting haemodynamically unstable, polymorbid or critically ill patients. The continuous availability of this service 24 hours a day, 7 days a week further underlines the department's role as a key diagnostic partner for all acute and specialised departments of Motol University Hospital.

Clinical activity:

In 2025, the Department of Radiology performed a total of 410,489 imaging examinations in 262,625 patients. These figures represent an approximately 5% year-on-year increase in the number of patients and an approximately 10% increase in the total number of examinations, demonstrating the department's steadily growing importance within the Czech healthcare system. Of the total number of patients, 188,923 were outpatients and 73,702 were hospitalised patients.

A similar proportion was also seen in the number of examinations performed, reflecting the balanced structure of care provided, which includes both outpatient diagnostics and care for hospitalised patients, including patients in highly specialised programmes.

The number of MRI examinations showed exceptionally dynamic growth. In the adult section of the department, the number increased by approximately 60%, while the

paediatric section saw a slight decrease of approximately 5%. As a result, a large number of patients can once again benefit from the diagnostic services of a nationally important department with extensive expertise, including in the most complex diagnostic cases.

The number of CT examinations increased by approximately 5% in the adult section, while the paediatric section saw a significant increase of approximately 40%, primarily due to the efficient use of scanner capacity for patients from the adult section of the hospital.

There was also a significant increase in the number of examinations performed using the low-dose EOS imaging system. Compared with 2024, the number of patients increased by 8%, while the number of examinations increased by 9%.

The number of interventional procedures also increased by approximately 5% year on year, confirming the growing importance of interventional radiology as an integral part of modern medicine.

Quality of care:

During the year, an internal clinical audit was carried out, the results of which confirmed the high professional and organisational standard of the care provided. Quality indicators are systematically monitored, regularly evaluated and used for the continuous improvement of diagnostic and therapeutic processes. The department has long applied the principles of modern healthcare quality management in line with the standards of leading European healthcare institutions.

Teaching activities and professional education:

The Radiography study programme currently has a total of 84 students across three years of study. The Department of Radiology serves as a key teaching base for this study programme and has long provided a substantial part of both its theoretical and practical teaching. Teaching takes place in direct contact with modern clinical practice. The department therefore makes a major contribution to the training of a new generation of qualified healthcare professionals, who go on to work in leading healthcare institutions throughout the Czech Republic.

In undergraduate education, the Department of Radiology, in cooperation with the Department of Nuclear Medicine and Endocrinology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital, provides systematic four-week teaching for students of General Medicine, completed with course credit and a final examination. The teaching is designed as a comprehensive introduction to medical imaging and includes not only systematic lectures, but also case-based teaching, interactive seminars and practical demonstrations. Students have the opportunity to gain direct experience with the operation of individual imaging modalities. The quality of teaching has long been consistently rated very highly by students, reflecting both the high professional and teaching standards of the department's staff and the emphasis placed on modern teaching methods and active student involvement in the educational process. The department also provides seminar-based teaching within compulsory elective courses for students of both the Czech and English parallel programmes in General Medicine and participates in clinical placements within the undergraduate curriculum.

In postgraduate education, the department has long served as one of the main accredited centres in the field of Radiology and Imaging Methods and is a major centre for specialist radiology training in the Czech Republic.

In 2025, the department organised a total of eight pre-certification training courses, which attracted exceptional interest from participants and received very positive professional feedback. The courses covered a broad range of topics in medical imaging and provided an important platform for the systematic transfer of professional experience and practical knowledge to the next generation of radiologists.

At the same time, a significant number of physicians in specialist training from radiology departments throughout the Czech Republic complete professional placements at the department. These physicians gain practical experience in advanced diagnostic and interventional procedures, which they subsequently take back to their home institutions, thereby enabling the department to make a substantial contribution to the development of radiology nationwide.

In autumn 2025, the department organised board certification examinations in Radiology and Imaging Methods and in the subspecialty of Interventional Radiology. The department also participated in the organisation of core training examinations.

Professional and scientific activities:

In 2025, the Department of Radiology organised the Motol Paediatric Radiology Day (Masterclass), which became a highly significant professional event with a strong international dimension. The event was attended by leading specialists from the Department of Pediatric Radiology at Stanford University Hospital in California, USA, and created a unique platform for the exchange of experience between Czech and international specialists. The Masterclass further strengthened the department's international reputation in paediatric radiology.

In 2025, the department also organised a national professional event held by the Society of Radiographers of the Czech Republic (SRLA, z.s.), entitled the Autumn Symposium of Radiographers. The conference attracted an exceptionally high number of specialists from across the Czech Republic and confirmed the department's leading role in the education of non-medical healthcare professionals in medical imaging.

The Department of Radiology has also long demonstrated an exceptional level of professional excellence in the field of artificial intelligence methods. In cooperation with the Ministry of Health of the Czech Republic and VSB - Technical University of Ostrava, the department initiated and implemented a number of research and innovation projects focused on improving diagnostic quality, optimising workflows and improving the availability of medical imaging for patients of Motol University Hospital.

Throughout the year, physicians from the department delivered dozens of invited lectures at national and international professional forums. These presentations focused primarily on magnetic resonance imaging, paediatric radiology, modern imaging techniques, the optimisation of imaging protocols and the use of artificial intelligence methods in medicine. The department was also strongly represented at the European Congress of Radiology, where its staff presented the results of their clinical and scientific work.

In 2025, the team of physicians holding European certification in paediatric neuroradiology expanded to three specialists. The department therefore has the largest team of certified specialists in the Czech Republic for the specialised assessment of brain MRI examinations in paediatric patients.

Scientific collaboration:

The Department of Radiology systematically develops scientific collaboration with major academic and research institutions in the Czech Republic and abroad. Its domestic partners include, in particular, VSB - Technical University of Ostrava, the Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University, the Czech University of Life Sciences Prague, and the 1st Faculty of Medicine, Charles University.

International partner institutions include Amsterdam UMC in the Netherlands, Helmholtz-Zentrum Dresden-Rossendorf and the Deutsches Diabetes-Zentrum in Germany. The department is also actively involved in Europe-wide activities of the European Society of Radiology, thereby contributing to the development of international cooperation in medical imaging.

In cooperation with the Department of Neurology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, a specialised centre is being established for the diagnosis and treatment of Alzheimer's disease using modern immunotherapeutic approaches. This centre represents an important step towards the introduction of personalised medicine in neurodegenerative diseases in the Czech Republic.

Specialised diagnostic and therapeutic procedures:

The Department of Radiology has long developed and implemented state-of-the-art diagnostic and therapeutic procedures reflecting the current state of medical knowledge. In magnetic resonance imaging, advanced imaging techniques have been further developed, including modern vascular imaging methods, comprehensive functional cardiac assessments, tractography, functional MRI and a broad range of research sequences enabling detailed assessments of the structure, function and tissue characteristics of organ systems.

- The department routinely performs specialised quantitative MRI examinations, particularly T2 and T1 relaxometry, MR spectroscopy and other techniques.
- The implementation of artificial intelligence-based image reconstruction algorithms has led to a significant shortening of examination protocols, increased scanner throughput and improved image quality.
- Advanced research methods include, in particular, arterial spin labelling, a modern non-contrast method for the quantitative assessment of cerebral perfusion that is used in research and is gradually being introduced into clinical practice.
- In computed tomography, the department performs comprehensive CT angiography examinations, advanced three-dimensional visualisations using volume rendering, cardiac and coronary CT examinations, and other specialised diagnostic procedures within the paediatric and adult cardiac centres of Motol and Homolka University Hospital.
- CT examinations are routinely used to create precise volumetric data models for procedure planning in neuronavigation, ENT navigation and oral and maxillofacial surgery.
- Prenatal ultrasound and MRI diagnostics are an important area of the department's work, enabling detailed assessments of foetal developmental abnormalities and providing essential information for further clinical decision-making.

- The department's mammography unit provides the full spectrum of specialised procedures, including ductography, cyst aspiration, ultrasound-guided core needle biopsies and vacuum-assisted biopsies using the Vacora system.
- In interventional radiology, the department performs advanced ablation techniques, including radiofrequency ablation and chemoembolisation of metastatic lesions in the liver and lungs.
- The department implants aortic stent grafts, including technically-demanding fenestrated aortic reconstructions.
- Endovascular treatment of acute ischaemic stroke using mechanical thrombectomy makes a significant contribution to favourable functional outcomes, enables earlier initiation of rehabilitation and reduces patient mortality.
- The department also focuses on advanced vascular interventions, including the subintimal recanalisation of peripheral arteries, interventional treatment of acute and chronic deep vein thrombosis, and reconstructive procedures involving vascular access for haemodialysis.
- A specific area of expertise is lymphography combined with interventional radiology and magnetic resonance imaging, enabling the diagnosis and minimally invasive treatment of lymphatic fistulas and pathological lymphatic shunts.
- The department performs a broad spectrum of other interventional procedures, including biliary interventions and spinal stabilisation procedures.
- Contrast-enhanced ultrasound is routinely used in particular for the dynamic assessment of focal liver and kidney lesions and is an important component of modern non-invasive diagnostics.
- Ultrasound elastography using both software- and hardware-based technologies enables advanced tissue characterisation and expands the diagnostic possibilities of ultrasound examination.
- Super Microvascular Imaging enables the highly sensitive and precise assessment of tissue microvascular architecture without the need to administer a contrast agent.
- The department serves as a referral centre for complex diagnostic cases and provides consultation services for healthcare institutions in the Czech Republic and abroad.

Significant events in 2025:

The year 2025 was a period of exceptional professional and organisational achievement for the Department of Radiology, further strengthening its position among the leading departments in the field in both the Czech Republic and the wider European context.

- Prof. MUDr. Miloslav Roček, CSc., continued to serve as Chair of the Czech Society of Radiology of the Czech Medical Association of J. E. Purkyně, Chair of the Paediatric Radiology Section of the Czech Society of Radiology, and Vice-Chair and Scientific Secretary of the Czech Society of Interventional Radiology of the Czech Medical Association of J. E. Purkyně. These positions represent significant recognition of the department's long-standing professional and organisational work.
- MRI-based prostate cancer screening was introduced at the department. At the same time, examination protocols were significantly refined and

accelerated, diagnostic accuracy was improved, a second-reading system was introduced, and biopsy findings were systematically correlated with radiological reports. These developments represent an important step towards improving diagnostic quality and provide a clear benefit for patients examined at the Department of Radiology.

- Members of the department actively contributed to the professional programme of the 46th Czech Congress of Radiology through a number of invited lectures and scientific presentations.
- At the 46th Czech Congress of Radiology, MUDr. Bruno Jurášek received a professional award, representing a significant achievement for the younger generation of the department's staff.
- In 2025, a total of 18 scientific articles were published in journals with an impact factor, while the number of impact-factor publications with a first or corresponding author from the Department of Radiology increased approximately fourfold. This development reflects the dynamic growth of the department's scientific activities.
- Six new students entered the doctoral study programme, some of whom have already achieved significant publication results in first-quartile journals, demonstrating the high standard of scientific training provided at the department.

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

*Head of Department: **prof. MUDr. Milan Macek, DrSc., MHA***

*Deputy Head for Healthcare: **MUDr. Markéta Havlovicová***

*Institute Manager: **Ing. Ivana Funková, MBA.***

*Head Nurse: **Mgr. Hana Strouhalová***

Basic description:

The Institute of Biology and Medical Genetics provides highly specialised preventive and diagnostic care in medical and molecular genetics for the whole Czech Republic. It diagnoses congenital anomalies, hereditary cancer syndromes, neurodegenerative diseases, hereditary epilepsies, rare diseases and intellectual developmental disorders in the prenatal and postnatal periods. It cooperates with a number of departments of Motol and Homolka University Hospital, including the Department of Gynaecology and Obstetrics, the Department of Paediatrics, the Department of Paediatric Neurology, the Department of Child and Adolescent Psychiatry, the Children's Heart Centre, the Department of Cardiology, the Department of Internal Medicine, the Department of Stomatology, the Department of Neurology, and the Institute of Pathology and Molecular Medicine. It also cooperates with IKEM, specifically the Department of Cardiology, and with the General University Hospital in Prague in ophthalmogenetics and inherited metabolic disorders. The institute participates in undergraduate, postgraduate and specialist education at the 2nd Faculty of Medicine, Charles University and the Institute for Postgraduate Medical Education (IPVZ), cooperates with international institutions and EU consortia, and

works on European Commission projects including SYPOVO, JARDIN and ERDERA. It coordinates 16 European Reference Networks for rare diseases at Motol, including ERN VASCERN since 2025, and is actively involved in ERN ITHACA and ERN GENTURIS.

The National Coordination Centre for Rare Diseases (NKCVO), established in 2012 and confirmed in 2015, is based at the institute, as is the Centre for the Diagnosis and Treatment of Cystic Fibrosis, operated jointly with the Department of Paediatrics. Since 2011, the institute has been part of the infrastructure of the National Centre for Medical Genomics (www.ncmg.cz).

In 2025, the outpatient units provided consultations to almost 7,000 families, and around 13,000 patients were examined. Sixteen pregnancies were terminated for genetic reasons. The institute successfully participated in international external quality assessment schemes, including CEQAS, EMQN and the CF Diagnostic Network, and holds certification for next-generation sequencing (NGS) and *BRCA1/2* gene testing.

The laboratories are accredited by the Czech Accreditation Institute under ČSN EN ISO 15189:2013 for molecular genetic and cytogenetic testing.

In 2025, the laboratories performed 8,345 molecular genetic tests, ranging from targeted variant testing to whole-exome sequencing. A total of 2,928 tests, or 35%, were performed using NGS. A pathogenic or abnormal finding was detected in 2,156 tests (25.8%); for NGS, the diagnostic yield was 30%. The most common tests were: WES, thrombophilia mutation testing, newborn screening for cystic fibrosis, cystic fibrosis testing, fragile X syndrome testing, SMA testing and hereditary cancer syndrome testing.

Prenatal cytogenetics and FISH: 92 tests were performed, with pathological or abnormal findings detected in 12 karyotypes (13%). Array CGH in 60 fetuses revealed a pathological finding in five cases (8%), and a finding of uncertain significance in three cases (5%). Of the karyotypes from miscarried fetuses, five of 14 (25%) showed pathological or abnormal findings.

Postnatal blood cultures: 1,298 tests were performed for karyotyping and/or ZCA (1,203) or FISH (95). For karyotyping/ZCA, 31 positive findings were detected (4.8%), while FISH detected 17 pathological or abnormal findings (12.5%). Postnatal array CGH, comprising 473 tests, detected 77 pathogenic or likely pathogenic variants and variants of uncertain significance (VUS) (16.27%). Of 11 SNP arrays, three showed abnormalities (27.3%). QF-PCR detected seven pathological findings in 119 tests (5.88%).

At the Centre for Reproductive Genetics, 382 semen analyses were performed, together with 186 sperm cryopreservations, including 158 in oncology patients, 50 preparations for IUI, 106 preparations for IVF and 10 TESE procedures. In the embryology laboratory, 115 oocyte retrievals were performed, together with 25 fresh embryo transfers and 143 frozen embryo transfers; ICSI was performed in 98 patients, IVF/ICSI in one patient and conventional IVF in two patients.

Preimplantation genetic testing was performed in 32 couples, including 13 PGT-M, 19 PGT-A and three PGT-SR cases, with a total of 185 trophectoderm biopsies. Ovarian tissue cryopreservation was performed in four oncology patients.

Specialised outpatient units:

- prenatal counselling, neurogenetics including epileptology and neurovascular diseases, oncogenetics, sensory disorders and deafness, cardiogenetics, syndromology, reproductive disorders, intellectual disability and autism spectrum disorders, thrombophilic conditions, gastroenterology and hereditary pancreatitis, cystic fibrosis including newborn screening, and hereditary nephropathies.

New methods and procedures developed over the last three years:

- Expansion of diagnostics for microdeletion syndromes using FISH and CGH, including methods not requiring direct cell culture.
- Introduction of a custom array CGH platform, 4x180K CGH+SNP, for isolated/severe heart defects and epilepsies, with exonic coverage of DEE and MCD genes, mapped to hg38.
- Introduction of SNP array testing on the Illumina platform.
- Addition of new functions to the cytogenetic database.
- Improvement of variant classification using database tools and software updates, together with active submission of CGH results to the DECIPHER database.
- Czech Accreditation Institute 15189 accreditations for cytogenetic methods and regular EQA.
- Expert representation in the national Czech Array group.
- In molecular genetics, routine WES testing using Sophia Genetics on the NovaSeq 6000Dx platform. Discontinuation of CES, now replaced by WES-based virtual panels according to HPO terms; increased capacity for trio testing.
- Replacement of the Cardio and CID panels with WES-based virtual panels; introduction of the CZECAHCA hereditary cancer panel.
- Design and introduction of in-house virtual panels.
- In complex cases, WES data are filtered according to HPO terms, mode of inheritance and trio analysis.
- NGS panel on MiSeq for HBOC, Lynch syndrome and cystic fibrosis.
- Sanger DNA sequencing and fragment analysis in more than 120 genes for syndromes involving intellectual disability/autism spectrum disorders, ataxias, dystonia, muscular dystrophies, growth disorders, osteochondrodysplasias, craniosynostoses, disorders of sex development, tumour predisposition syndromes, sensory defects and thrombophilias; MLPA for deletions/duplications, with an increasing proportion of IVDR kits; and Sanger sequencing for verification of NGS variants and segregation analysis.
- Successful completion of EMQN and RfB external quality assessment for 14 diagnoses, Sanger sequencing and NGS.
- Improved filtering, prioritisation and interpretation of variants using Sophia DDM, VarSome Clinical and Franklin (Genoox).
- Newborn screening for cystic fibrosis in Bohemia, covering approximately 50,000 newborns, in cooperation with University Hospital Královské Vinohrady and the General University Hospital in Prague, and early detection of SMA

with the Department of Paediatric Neurology and the General University Hospital in Prague.

Unique equipment acquired over the last three years:

Infinium starter kit for SNP array, VeritiPro thermal cycler, Rotofix centrifuge, Labogene Scanlaf Mars and Safe Fast Light laminar flow cabinets, PHCbi incubator, NovaSeq 6000Dx with Hamilton Microlab STAR pipetting unit, PromethION P2 Integrated analyser (Oxford Nanopore, from December 2025), and centrifuge for the andrology laboratory.

Significant events in 2025 and exceptional clinical results:

- *Clinical use of NGS* - extensive diagnostics using exome sequencing in neurogenetics, cardiogenetics, nephrogenetics, dysmorphology and hearing disorders, with improved data filtering for rare diseases.
- *3D facial scanning* - digital phenotyping and objective morphometry. In 2025, 616 individuals were scanned, including 399 for the first time and 217 repeatedly. The database contains 7,932 individuals. Cooperation continued with the Departments of Stomatology, Neurosurgery and Paediatrics at Motol University Hospital and with University Hospital Královské Vinohrady. GA UK Grant No. 44120 assessed the phenotype in ADPKD associated with the PKD1/PKD2 genes.
- *BabyFox project* - cooperation with the Centre for Precision Medicine at University Hospital Brno on ultra-rapid whole-genome sequencing in critically ill newborns and children, with the aim of improving the diagnosis and prognosis of genetic disorders.

Research and scientific achievements:

From 9 to 11 October 2025, the 15th Balkan Congress and 3rd Alpe Adria Meeting were held in Bled, Slovenia, co-coordinated by the institute and the ERDERA project. Prof. Macek and prim. Havlovicová delivered an invited lecture on the use of AI and facial recognition in variant interpretation. At the end of June and beginning of July 2025, the institute organised an international ERDERA meeting focused on advanced diagnostic methods, including long-read sequencing, optical genome mapping and RNA sequencing, in underrepresented European regions.

Public engagement and media activities:

Ongoing cooperation with the Czech Association for Rare Diseases; joint articles and press releases at www.vzacna-onemocneni.cz. The institute participates in the Rare Disease Support and Education Centre project under the Health programme. In 2025, educational stays were organised for families affected by rare and ultra-rare diseases.

Three monographs were published with significant involvement of the institute: Kateřina Kopečková et al., *Rare Diseases* (Grada, 2025); Alena Šebková et al.,

Paediatric Propedeutics in Primary Care (Grada, 2025); and Eduard Kočárek, *Biology for Students of Medical Faculties and Healthcare Disciplines* (Grada, 2025).

Publications:

- Martinková, K., Kožejová Jaklová, L., Kočandrlová, K., Borský, J., Dupej, J., Morávek, A., & Velemínská, J. (2025). From infancy to toddlerhood: A 3D analysis of facial asymmetry in children with and without orofacial clefts. *Clinical Oral Investigations*, 29(8), 394.
- Dostalova, T., Hana, E., Havlovicová, M., Kočandrlová, K., Macek, M., Nocar, A., & Hlíňáková, P. (2025). Rare Diseases Affecting the Orofacial Area in Children and Adolescents: Utilisation of Noninvasive AI-Based Planning of Therapeutic Approaches. *The Journal of Craniofacial Surgery*, 36(8), 3064–3070.

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

Head of Department: **prof. MUDr. Richard Průša, CSc., EuSpLM**

Deputy Head of Department: **MUDr. Jana Čepová, Ph.D., MBA**

Chief Laboratory Technician: **Mgr. Martina Bunešová, MBA**

Basic description:

The Laboratory of Medical Chemistry and Clinical Biochemistry performs 202 different laboratory tests. Over the year, the laboratory processed biological material from 105,545 unique patients. On average, 3,000 biological samples are tested in the laboratory each day, including Saturdays, Sundays and public holidays, corresponding to 810,000 tests per month in continuous three-shift operation. Medical laboratory technicians, laboratory assistants, analysts and physicians all participate in the analytical work. Analysts and physicians on duty also provide consultations for clinical departments. A number of tests, including MTX, cyclosporin A, tacrolimus, sirolimus, lead, platinum, antifungal agents, busulfan, IGF-1, gentamicin, α -defensin, ganciclovir, isavuconazole and vitamin K, are also provided for external healthcare facilities, self-paying patients and veterinary medicine. In 2025, 10,193,095 laboratory tests were performed, 5% more than in 2024, of which 61% were processed as statim tests. The results of statim analyses are available online to physicians on average within 60 minutes of the biological sample being received by the laboratory. Specialist outpatient units are also operated by the laboratory; in 2025, 4,747 patients were treated there.

Specialised outpatient units / clinics / centres / department-specific services:

- Outpatient Unit for the Treatment of Hyperlipoproteinaemias
- Outpatient Unit for Bone Metabolism Disorders
- Outpatient Unit for Nutritional Disorders
- Carotid screening using a wireless ultrasound probe
- Administration of biologic and hormonal therapy

New methods and procedures:

- 2022 - Transfer of PSA and free PSA testing from Roche electrochemiluminescence to Siemens chemiluminescence

- 2022 - Introduction of biobanking in the AQUA system - monitoring the archiving and processing of biological material
- 2022 - Isavuconazole
- 2023 - Transfer of PSA and free PSA testing from Siemens chemiluminescence to Beckman Coulter chemiluminescence. Introduction of the PHI index on the Dxl800
- 2023 - Transfer of insulin, C-peptide, folic acid/folate and vitamin B12 assays from Roche electrochemiluminescence to Beckman Coulter chemiluminescence
- 2023 - Transfer of AMH testing from ELISA to the Dxl800 analyser
- 2024 - Determination of catecholamine metabolites, VMA and HVA in urine, and 5-HIAA by LC-MS
- 2024 - Development of a new LC-MS method for determining 3-methoxytyramine in urine
- 2024 - MxA and faecal calprotectin; renin, aldosterone and ACTH on the IDS analyser
- 2024 - Free beta-hCG replaced by beta-hCG
- 2024 - Introduction of FIB-4 calculation for assessing the risk of liver fibrosis
- 2024 - Development of a new LC-MS method for determining fluconazole and free 3-methoxytyramine
- 2024 - Introduction of measurement of hyaluronic acid, N-terminal propeptide of type III procollagen and tissue inhibitor of metalloproteinase-1 markers for subsequent calculation of the ELF score
- 2025 - Serum antibiotics, meropenem and linezolid, by LC-MS/MS
- 2025 - Urinary free metanephrines, metanephrine and normetanephrine, by LC-MS/MS

Unique equipment:

- 2022 - installation of two new Rapidlab 1245 blood gas analysers (Siemens)
- New installation of an ABL90 FLEX PLUS blood gas analyser in the Adult Emergency Department
- Replacement of the blood gas analyser at the Department of Surgery of the 2nd Faculty of Medicine, Charles University and Motol University Hospital with an ABL800 FLEX PLUS
- Replacement of two carousel glucometers at the Department of Paediatrics of the 2nd Faculty of Medicine, Charles University and Motol University Hospital with SensoStar GL30 Touch devices
- Replacement of a total of 42 networked strip glucometers across departments of Motol University Hospital with new StatStrip devices of the same type
- 2022 - Installation of new immunochemistry analysers - Architect 4000 in i2000SR+i2000SR configuration (Abbott)
- 2022 - Installation of the AQUA system - automation of the preanalytical phase of laboratory testing
- 2022 - Two new high-capacity refrigerated Beckman Coulter centrifuges
- 2022 - Expansion of the number of osmometers with a new OsmoPRO osmometer
- 2022 - Expansion of LC-MS capacity

- 2022 - Agilent Technologies Agilent 1260 HPLC system
- 2022 - SUNRISE RC ELISA reader
- 2022 - Ceiling-mounted air conditioning
- 2022 - Installation of an AU480 analyser (Beckman Coulter), replacing the Cobas Integra 400 from Roche s.r.o.
- 2023 - Replacement of two ABR analysers in the Adult Emergency Department with the newer StatProfile Prime Plus model
- 2023 - Installation of a StatProfile Prime Plus blood gas analyser at the Department of Internal Medicine of the 2nd Faculty of Medicine, Charles University and Motol University Hospital
- 2023 - Installation of a Dxl800 analyser
- 2023 - Installation of two ceiling-mounted air conditioning units
- 2023 - Installation of an ultra-low-temperature freezer
- 2023 - Purchase of two Tecan ELISA readers
- 2023 - Purchase of a HydroFlex Plus8/4 microplate washer
- 2023 - Multiwave 5000 modular sample preparation system
- 2024 - Replacement of two blood gas analysers in the Adult Emergency Department with ABL825 FLEX PLUS analysers
- 2024 - New installation of a StatSensor analyser for creatinine measurement in the Adult Emergency Department
- 2024 - New installation of a Stat Profile pHox Ultra blood gas analyser at the Department of Pulmonology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital
- 2024 - New installation of an AFIAS-3 analyser for measuring infection markers MxA and CRP in the Paediatric Emergency Department
- 2024 - New installation of two networked StatStrip glucometers at the Department of Anaesthesiology, Resuscitation and Intensive Medicine of the 2nd Faculty of Medicine, Charles University and Motol University Hospital
- 2024 - AFIAS
- 2024 - New OC Sensor Ceres analyser
- 2024 - StakPure ultrapure water production system
- 2025 - Analytical balances
- 2025 - Transfer of hGH and IGF-1 assays to the IDS analyser, discontinuation of the third-generation PSA assay and decommissioning of the Immulite 1000 analyser
- 2025 - Installation of a new urine strip reader
- 2025 - Discontinuation of orosomucoid and lipoprotein electrophoresis testing
- 2025 - GEM5000 blood gas analyser and AFIAS-3 analyser for measuring infection markers MxA and CRP installed at the Department of Infectious Diseases and Travel Medicine of the 2nd Faculty of Medicine, Charles University and Motol University Hospital and at the Department of Geriatric Internal Medicine of the 2nd Faculty of Medicine, Charles University and Motol University Hospital
- 2025 - AFIAS-1 analyser for measuring infection markers MxA and CRP installed at the Department of Primary Care
- 2025 - Immu F6 analyser for perioperative PTH determination installed in the central operating theatres

Significant events in 2025:

- January 2025 - Menhir of prof. Masopust, a congress of national importance
- May 2025 - Mgr. M. Bunešová, MBA, received the Florence Nightingale Award for development of the field
- September 2025 - national congress of the Czech Society of Clinical Biochemistry in Mikulov
- The Head of the Department, prof. R. Průša, received the Hořejší Award, the highest honour of the professional society
- Ing. M. Mellová received the Arnold Beckman Award for her contribution to laboratory medicine
- September 2025 - active participation of physicians from the Department of Medical Chemistry and Clinical Biochemistry in the World Congress of Therapeutic Drug Monitoring in Singapore

Publications:

Total number of publications: **35**

Outputs in national periodicals: **10**

Outputs in international periodicals: **8**

Of these, articles in journals with an impact factor (Jimp): **7**

Of these, review articles in journals with an impact factor: **1**

Of these, articles in peer-reviewed journals (Jrec): **3**

Of these, professional reports in journals: **7**

Of these, contributions in peer-reviewed conference proceedings (D): **1**

Of these, book chapters and books: **1**

Of these, contributions to international and national conferences: **17**

DEPARTMENT OF IMMUNOLOGY, 2ND FACULTY OF MEDICINE, CHARLES UNIVERSITY AND MOTOL UNIVERSITY HOSPITAL

Head of Department: **prof. MUDr. Jiřina Bartůňková, DrSc., MBA** (until 31 August 2025)

Head of Department: **doc. MUDr. Tomáš Milota, Ph.D.** (from 1 September 2025)

Deputy Head of Department: **prof. MUDr. Anna Šedivá, DSc.** (until 31 August 2025)

Deputy Head of Department: **doc. MUDr. Markéta Bloomfield, Ph.D.** (from 1 September 2025)

Chief Laboratory Technician: **Mgr. Jarmila Grecová**

Basic description:

The Department of Immunology provides comprehensive interdisciplinary care for paediatric and adult patients with immunopathological diseases. Care includes the full range of clinical and laboratory examinations, consultation services, long-term patient follow-up and specialised follow-up care.

The department focuses on the highly specialised diagnosis and treatment of immune system disorders, particularly allergic diseases, primary and secondary immunodeficiencies, autoimmune and autoinflammatory diseases, including neuroimmunology.

In addition to outpatient care covering the full scope of allergology and clinical immunology, the department provides the specialised outpatient units listed below. The department includes day care units for children and adults, where regular

replacement, immunomodulatory and biologic therapy is provided, including infusion administration of indicated medicinal products in patients with severe immune disorders, as well as investigational medicinal products within clinical trials.

Clinical studies are conducted in both the outpatient units and laboratories, focusing on inborn errors of immunity, hereditary angioedema, allergic diseases and cancer immunotherapy, in cooperation with domestic and international partners. In these areas, the department has nationwide scope and, in several segments, international reach. The department's research activities have significant overlap with other medical specialties, particularly rheumatology, neurology, oncology, ENT, dermatology and other specialised fields.

The Department of Immunology is an important educational base for undergraduate and postgraduate teaching in immunology and allergology, including specialist training for physicians and laboratory specialists, and is actively involved in the development of the field at both the national and international level. The department's staff are also highly active in public engagement in allergology and immunology and participate in public awareness events, such as the Science Fair at EXPO Letňany and Researchers' Night.

Number of examinations in 2025:

In 2025, a total of 17,268 examinations were performed in the outpatient units.

A total of 268,667 tests were performed in the routine laboratories on 41,019 patients.

A further 33,893 tests were performed in the CSF laboratory on 5,410 patients.

Specialised outpatient units:

- Outpatient Unit for Primary and Secondary Immunodeficiencies
- Outpatient Unit for Allergies, Autoinflammatory and Autoimmune Diseases
- Outpatient Unit for Patients with Positive Newborn Screening for Inborn Errors of Immunity
- Day Care Units for the Treatment of Immunopathological Conditions in Children and Adults
- Outpatient Unit for the Administration of Investigational Medicinal Products within Clinical Trials
- Outpatient Unit for the Diagnosis of Drug Allergies
- Outpatient Unit for Vaccination of Children in Special Situations

Multidisciplinary care:

- FUO/IUO multidisciplinary team of Motol University Hospital
- Centre for Thymic Defects

Centres:

- Centre for the Treatment of Difficult-to-treat Asthma
- Centre for the Treatment of Hereditary Angioedema
- Centre for the Diagnosis and Treatment of Chronic Spontaneous Urticaria (CSU)
- Centre for the Diagnosis and Treatment of Immunopathological Conditions - part of the Federation of Clinical Immunology Societies (FOCIS) Centres of Excellence

- ERN RITA Centre - European Reference Network for Rare Immunological Diseases
- European Academy of Allergy and Clinical Immunology (EAACI) Centre of Excellence
- Centre for Congenital Thymic Defects

New methods and procedures:

- Optimisation of diagnostic algorithms for immune disorders in connection with the introduction of nationwide newborn screening for inborn errors of immunity in the Czech Republic
- Introduction of methods for assessing type I interferon signalling - currently for research use only (RUO), with IVDR certification of the Siglec-1 method in progress
- Expansion of autoantibody detection methods to include Western blot and broader autoantibody panels, including ANA blot and liver blot
- Introduction of anti- β 2-glycoprotein I antibody testing for the diagnosis of antiphospholipid syndrome
- Upgrade of the ALEX multiplex method (ALEX III) for allergy diagnostics, enabling the simultaneous measurement of total IgE and specific IgE
- Introduction of the Basotest, a basophil activation test, for the diagnosis of drug allergies
- Expansion of the range of biologics monitored for drug levels and anti-drug antibodies, including ustekinumab and vedolizumab

Clinical trials:

- Clinical trial CMAS825D12201 - efficacy and safety of the bispecific monoclonal antibody MAS825 in the treatment of XIAP deficiency
- Takeda: IgGNITE TAK-881-3001/2 - 20% fSCIG in patients with agammaglobulinaemia
- CEREN2 - itepekimab, an anti-IL-33 monoclonal antibody, in patients with inadequately controlled chronic rhinosinusitis with nasal polyps
- ALPHA-ORBIT - navenibart in patients with hereditary angioedema (HAE)
- STOP-HAE - ADX-324, an siRNA molecule targeting prekallikrein, in patients with hereditary angioedema (HAE)

Specific treatment programmes and other activities:

- Leniolisib Extended Access Program - post-trial targeted therapy with a PI3K δ inhibitor in patients with APDS
- Specific treatment programme with garadacimab for patients with hereditary angioedema (HAE)
- Continued individual administration of the unregistered medicinal product DCVAC under the hospital exemption for advanced therapy medicinal products pursuant to Sections 49b and 49c of the Act on Pharmaceuticals

Unique equipment:

- Comprehensively equipped flow cytometry laboratory, including a cytometer and cell sorter acquired in 2022

- Microscopy facility including a confocal microscope and scanning cytometer
- Automated equipment for ELISA testing
- Automated chemiluminescence analyser for antibody detection
- Fully automated IFA microscope combined with an intelligent digital imaging and interpretation system
- Beckman Coulter AU480 turbidimeter for quantitative immunochemical analysis using optical methods
- Automated AFIAS 10 immunofluorescence analyser for therapeutic drug monitoring of biologic therapy and TB IGRA testing

Significant events in 2025:

- 30th anniversary of the Department of Immunology and changes in department leadership, including the positions of Head and Senior Doctor
- Awarding of EAACI Advanced Research Center status
- President of the Republic's Award presented to prof. Bartůňková
- Leadership of the Immunodeficiency Centre within the global network of Jeffrey Modell Foundation centres, USA
- Leadership of a Federation of Clinical Immunology Societies Centre of Excellence (FOCIS Centre of Excellence)
- Implementation of the international EP PerMed grant (European Partnership for Personalised Medicine)
- Implementation of the international IPOPI grant (International Patient Organisation for Primary Immunodeficiencies)
- Implementation of Motol University Hospital institutional support projects and national grants from GA UK, the Czech Health Research Council and the Technology Agency of the Czech Republic
- Implementation of projects focused on the diagnosis of immunopathological conditions within the Motol University Hospital internal Modern Therapies project

Publications:

- Twenty international impact-factor publications, including publications recognised by national professional societies
- Cooperation on the development of standards for comprehensive shared care for patients with rare diseases within ERN RITA, particularly hereditary angioedema and inborn errors of immunity

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

*Head of Department: **prof. MUDr. Pavel Dřevínek, Ph.D.***

*Deputy Head of Department: **MUDr. Otakar Nyč, Ph.D.***

*Chief Laboratory Technician: **Vladimír Kryll***

Basic description:

The Department of Medical Microbiology provides laboratory diagnostics of bacterial, viral, fungal and parasitic infections. It provides consultation services in the diagnosis of infectious diseases and antimicrobial therapy. The department collaborates in the

surveillance of healthcare-associated infections and monitors the occurrence of unusual antimicrobial resistance profiles. It is connected to the European antimicrobial resistance surveillance system and participates in European studies monitoring the incidence of infections caused by *Clostridioides difficile*. Through representatives in the Central Coordination Group of the National Antibiotic Programme (CKS NAP), the Antibiotic Policy Subcommittee of the Czech Medical Association of J. E. Purkyně (SKAP ČLS JEP), and the Committee of the Czech Society for Medical Microbiology of the Czech Medical Association of J. E. Purkyně (SLM ČLS JEP), the department actively contributes to the implementation of antibiotic stewardship in the Czech Republic. Particular emphasis is placed on the evaluation of the latest diagnostic methods and their implementation into clinical practice with the aim of further improving microbiological diagnostics.

New methods and procedures:

- Diagnostics based on analysis of non-human genomes: broad-range bacterial and targeted PCR; recently introduced tests target *H. pylori*, hepatitis E virus, hepatitis B virus, HIV, HPV, HHV-8, pathogens causing travel-associated febrile illnesses including malaria, pathogens causing sepsis, and point-of-care testing (POCT) for respiratory infections
- Whole-genome sequencing of bacterial strains with unusual resistance or virulence profiles, including long-read sequencing enabling analysis of plasmid transmission
- Whole-genome sequencing of *Plasmodium falciparum* from whole blood samples of patients with malaria for monitoring antimalarial resistance
- MALDI-TOF identification of bacterial pathogens and filamentous fungi using the international MSI database
- Detection of virulence factors and resistance genes: MRSA, PVL and TSST in *S. aureus*; *mcr* genes in *Enterobacteriaceae* isolates; carbapenemases
- Molecular typing of *C. difficile*, *S. aureus*, vancomycin-resistant *Enterococcus* spp. (including national surveillance for the Czech Republic), *P. aeruginosa* and the *B. cepacia* complex in chronic infections in patients with cystic fibrosis (CF)
- Cooperation with the Department of Internal Medicine of the 2nd Faculty of Medicine, Charles University and Motol University Hospital in operating a donor stool bank for faecal microbiota transplantation in patients with recurrent *Clostridioides difficile* colitis
- Determination of 1,3-beta-D-glucan for the diagnosis of invasive fungal infections
- Selective cultivation of *Scedosporium* species and filamentous fungi of the order Onygenales in patients with cystic fibrosis or primary ciliary dyskinesia

Unique equipment:

- Next-generation sequencer NextSeq 2000 (Illumina)
- 3500 Dx sequencer (Applied Biosystems)
- BENTLEY anaerobic chamber

Significant events in 2025:

- Through its Head, prof. MUDr. Pavel Dřevínek, Ph.D., the department is represented in the National Institute for Pandemic Management at the Ministry of Health of the Czech Republic.
- Four department staff members serve on the Committee of the Society for Medical Microbiology of the Czech Medical Association of J. E. Purkyně; prof. MUDr. Pavel Dřevínek, Ph.D., serves as Chair of the Society.
- Participation in the preparation of professional seminars organised by the Society for Medical Microbiology.
- Prof. MUDr. Pavel Dřevínek, Ph.D., received the Motol University Hospital Creative Achievement Award 2025 for establishing and leading the international ECFS Twinning project.
- Mgr. Marcela Krůtová, Ph.D., was appointed Local Champion of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) and representative for clinical microbiology in the Czech Republic.
- MUDr. Anežka Gryndlerová received the award for the best poster at KMINE 2025 for a member of the Society for Medical Microbiology of the Czech Medical Association of J. E. Purkyně; MUDr. Jakub Kantor received the Society's award for the best publication in medical microbiology in the Ph.D. student category for 2024.

Publications:

Twenty-two international impact-factor publications and three articles in peer-reviewed journals.

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

*Head of Department: **prof. MUDr. Josef Zámečník, Ph.D.***

*Deputy Head of Department: **MUDr. Petr Škapa, Ph.D.***

*Chief Laboratory Technician: **Vladimíra Kratinová***

Basic description:

The Department of Pathology and Molecular Medicine provides comprehensive tissue- and cell-based diagnostics of disease at the microscopic, immunohistochemical and molecular levels. Diagnostic activities are based on biopsy and cytological examinations, supplemented by specialised laboratory techniques including immunohistochemistry, fluorescence in situ hybridisation, enzyme histochemistry, the molecular analysis of nucleic acids, including next-generation sequencing, electron microscopy and flow cytometry.

A key component of the department's activities is intraoperative frozen section diagnosis, in which a histopathological diagnosis is established during surgery and directly influences the further course of the procedure.

An important area is predictive pathology, including immunohistochemical and molecular genetic testing used to indicate targeted anticancer biologic and immunotherapy. These tests enable individualised therapy within the framework of personalised medicine and form an integral part of multidisciplinary oncology care.

The department is organised into specialised working groups focused on the diagnosis of individual organ systems, enabling a high degree of subspecialisation and specialist expertise. It also provides consultation services to other pathology departments in the Czech Republic, particularly for the review, supplementation or verification of biopsy findings in patients referred for treatment at Motol University Hospital.

Autopsy services no longer constitute the dominant component of the department's activities; nevertheless, they continue to fulfil an important quality-control, audit and educational role within the hospital.

The department is an accredited undergraduate and postgraduate teaching centre. It provides pathology teaching for medical and non-medical students of the 2nd Faculty of Medicine, Charles University, participates in the doctoral study programme in biomedicine, and contributes to the specialist training of physicians in pathology.

In 2025, the department carried out 20,517 biopsy examinations, 1,952 intraoperative examinations, 2,643 non-gynaecological cytology examinations, 2,416 molecular and hybridisation tests, and 975 flow cytometry tests.

Specialised laboratories:

- Biopsy Laboratory
- Cytology Laboratory
- Immunohistochemistry and In Situ Hybridisation Laboratory
- Molecular Pathology Laboratory
- Flow Cytometry Laboratory
- Electron Microscopy Laboratory
- Neuropathology and Muscle Biopsy Laboratory
- Pulmonary Cytology Laboratory

New methods and procedures:

- The year 2025 marked a further phase in the deepening and integration of digitalisation processes initiated in previous years. Emphasis was placed on stabilising the digital infrastructure, developing bioinformatics capacity and strengthening the department's role within the Comprehensive Cancer Centre.

Digital infrastructure and workflow:

- Further integration of the core Perseus system and the laboratory information system (LIS) across the individual laboratories continued. A key project involved the preparation and testing of an internal digital ordering system for immunohistochemical tests, enabling the structured entry of indications, transparent tracking of requests and optimisation of protein diagnostics. At the same time, preparations began for integrating the Molecular Pathology Laboratory into this unified digital framework, with the aim of creating a comprehensive ordering and process management system for immunohistochemical, hybridisation and molecular genetic testing.
- Further development of digital pathology was of fundamental importance. Integration of VENTANA DP600 histology slide scanners (Roche Diagnostics) into the LIS is currently under way. Digital slide scanning enables secure data sharing, remote consultations and efficient subspecialty collaboration, while also creating the technological basis for the implementation of artificial intelligence algorithms.

- In 2025, close professional collaboration was established with the Department of Pathology of the Regional Hospital Liberec in the field of routine digital diagnostics. The collaboration is fully digital and includes the sharing of virtual slides, interinstitutional consultations and support for subspecialty diagnostics. This model represents an important step towards regionally interconnected digital pathology and more efficient use of expert capacity.
- At the same time, work continued on the systematic optimisation of the LIS, focusing on stability, functionality and workflow efficiency.

Molecular diagnostics and bioinformatics:

- A major development in 2025 was the establishment of an internal bioinformatics research group, which has begun developing new algorithms for genomic data analysis and interpretation and contributes to the design of a digital interpretation workflow.
- In 2025, work began on building a dedicated computational infrastructure for bioinformatics and artificial intelligence in the form of a specialised HPC/AI workstation with multiple GPU acceleration. This platform represents a major strengthening of the department's autonomous analytical capacity and enables in-house processing of large genomic datasets, validation of machine-learning models and integration of morphological and molecular data within a unified digital workflow. The development of this infrastructure significantly increases the department's technological self-sufficiency and creates a foundation for the further advancement of precision medicine.

Innovative technologies:

- Further development continued on the NIO Laser Imaging System (Invenio) for stimulated Raman histology. Experience and reference samples were systematically collected, and potential clinical applications of this innovative imaging method were evaluated.

Unique equipment:

- The department has a highly specialised technological infrastructure covering the entire diagnostic process, from tissue processing and molecular analysis to digital image interpretation and advanced computational data processing.

Immunohistochemistry and in situ hybridisation:

- Dako Omnis, Dako Autostainer Link 48 and Dako PT Link Pre-Treatment Module automated systems (Agilent Technologies) for fully automated immunohistochemical testing and in situ hybridisation.

Molecular diagnostics and NGS:

- NextSeq and MiSeq sequencers (Illumina) for next-generation sequencing (NGS)
- EZ2 Connect MDx nucleic acid extraction system (Qiagen)
- Digital LightCycler (Roche Diagnostics) for digital PCR (dPCR)
- Avenio Millisect System (Roche Diagnostics) for high-precision tumour tissue dissection
- Covaris M220 ultrasonicator for NGS library preparation

- Cobas Z480 (Roche Diagnostics) and Idylla (Biocartis) analysers for the detection of specific gene alterations and microsatellite instability (MSI)
- Applied Biosystems 3500 Genetic Analyzer for Sanger sequencing
- Qubit fluorometer for quantification of NGS libraries and technologies for cfDNA extraction from plasma or cerebrospinal fluid

Morphological diagnostics:

- Fully automated Sakura Tissue-Tek AutoTEC a120 embedding system
- Sakura Tissue-Tek automated staining and coverslipping system for histological slide preparation
- Fully automated Myr M-250 robotic rotary microtomes
- TMA Grand Master automated tissue microarray (3DHistech)
- JEOL JEM-1400plus electron microscope
- DxFLEX flow cytometer (Beckman Coulter)

Digital pathology and advanced imaging technologies:

- VENTANA DP600 whole-slide scanners (Roche Diagnostics) with the Navify Digital Pathology software platform, enabling the interpretation of predictive immunohistochemical tests, including the use of diagnostic algorithms incorporating artificial intelligence.
- NIO Laser Imaging System (Invenio) for stimulated Raman histology, enabling rapid tissue visualisation using advanced laser spectroscopy.

Bioinformatics and computational infrastructure:

- Specialised HPC/AI workstation with multiple GPU acceleration, designed for parallel analysis of NGS data, development and validation of machine-learning algorithms, and integration of morphological and molecular data within the digital diagnostic workflow.

Diagnostic support:

- NovaVoice dictation software for speech-to-text conversion and efficient preparation of diagnostic reports.

Significant events in 2025:

- In 2025, the department published a total of 26 articles in international impact-factor journals, including three first-author papers, with eight publications in D1, seven in Q1, nine in Q2 and two in Q3 journals. The department also contributed to the preparation of three professional books/textbooks. Major outputs of the year included, among others, an international paper on CNS tumours with NTRK fusions (D1) and two first-author publications addressing the pathogenesis of HUS in EHEC infection (Q1) and the use of molecular diagnostics in rare soft-tissue tumours of the knee region (Q2).

Department of Clinical Haematology

Senior Doctor: **MUDr. Jitka Segethová**

Chief Laboratory Technician: **Blanka Hájková**

Basic description:

The Department of Clinical Haematology (DCH) provides extended haemato-oncology care in accordance with the criteria of the Czech Society of Haematology of the Czech Medical Association of J. E. Purkyně.

The department is divided into two sections: laboratory and clinical. The laboratory performs routine and specialised haematological tests for Motol University Hospital and also has a supraregional role. In 2025, a total of 1,134,021 laboratory tests were performed. The laboratory is a reference laboratory for the diagnosis of acute leukaemias and myeloproliferative disorders in children. In adult haematology, particular attention is focused on the precise morphological diagnosis of myelodysplastic syndrome.

The clinical section includes outpatient units for both paediatric and adult patients. A total of 42,180 procedures were performed in the outpatient units in 2025. In the adult outpatient unit, treatment provided within the centre for extended haemato-oncology care also focuses on multiple myeloma and indolent lymphoproliferative disorders. The adult outpatient unit also includes treatment rooms used for the administration of blood products and chemotherapy.

New methods and procedures:

- Platelet function testing
- Introduction of a method for measuring levels of new antithrombotic drugs
- Introduction of fibrin monomer testing
- Introduction of factor XIII assay methodology
- Introduction of a method for the microscopic detection of *Plasmodium malariae*, including determination of parasitaemia and performance of a malaria POCT antigen test. This test is available at the Department of Clinical Haematology on a 24/7 basis
- Introduction of modified erythrocyte sedimentation rate (ESR) testing. This method replaced ESR testing previously performed at clinical departments and enabled the examination to be standardised in accordance with international guideline criteria
- In 2025, APTT testing was introduced on the main coagulation analyser in compliance with the IVDR and with valid external quality assessment (EQA), ensuring full legislative compliance and improving the quality of routine diagnostics
- In 2025, a new laboratory method was introduced for monitoring treatment in patients with haemophilia A treated with Altuvect, including method setup, controls and interpretation of results
- In 2025, the Nijmegen method was introduced for the determination of factor VIII inhibitors, providing greater accuracy and reproducibility than the conventional Bethesda assay
- During the year, professional and technical preparations were completed for the introduction of HIT testing, which, following approval by management, will expand the laboratory's range of specialised coagulation methods

- The morphology laboratory participates in international studies on the treatment of paediatric acute leukaemia
- The department is actively involved in the Czech MDS Group
- Physicians from the department actively participate in the work of the Czech Myeloma Group, including data entry into the CMG Registry of Monoclonal Gammopathies
- Practical teaching for students in the fields of Medical Laboratory Technician and Laboratory Diagnostics in Healthcare takes place in the laboratory
- The department is involved in the INSIGHT-NEO study in cooperation with the Department of Neonatology
- New interdisciplinary cooperation was established with the Department of Anaesthesiology, Resuscitation and Intensive Medicine of the 2nd Faculty of Medicine, Charles University and Motol University Hospital as part of a clinical study in patients after lung transplantation, focusing on a comparison of anticoagulant therapy with LMWH versus UFH

Unique equipment:

- SYSMEX XN 3000 - automated blood count line including digital morphology
- SYSMEX XN 1000 for blood count testing
- Coagulation analysers (ACL TOP 750 CTS with preanalytical phase control) for routine and specialised coagulation testing
- Coagulation analyser (ACL TOP 700) for specialised coagulation testing
- STA-R Evolution - analyser for fibrin monomer testing and mechanical clot-based coagulation assays
- Instruments for modified erythrocyte sedimentation rate (ESR) testing (Alifax TEST1 2.0)
- Instrument for platelet function analysis (INNOVANCE PFA-200)
- Bactec satellite incubator for receiving blood cultures
- The Department of Clinical Haematology manages the Radiometer AQT90 FLEX POCT analyser in the Adult Emergency Department, where D-dimer testing is performed for acute patients
- In 2025, the new Vision Pro digital morphology system was introduced into routine and specialised morphology laboratory operations. The new digital morphology system enables microscopic assessment for the presence of malaria parasites, including parasitaemia, remote access by a laboratory morphologist in the event of atypical cells being detected in a peripheral blood smear or malaria parasites being present, and the gradual digitalisation of blood smear and bone marrow aspirate examinations through the creation of digital smear scans. This enables the archiving of rare findings, accelerates the adaptation process in teaching bone marrow assessment, and improves opportunities for scientific publication
- In 2025, a new centrifuge was acquired, accelerating sample centrifugation and shortening processing times

Significant events in 2025:

- At the initiative of our department, it became possible to share code 84023 - Microscopic Examination for Malaria with haematology laboratories, and cooperation is under way on the concept of EQA for haematology laboratories

- The department co-authored the publication Paediatric Haematology and also contributed to and co-authored the project “Enterohemorrhagic Escherichia coli O157 outer membrane vesicles administered by oral gavage cause renal tubular injury and acute kidney failure in mice”, published in Frontiers in Cellular and Infection Microbiology

Department of Clinical Psychology

Senior Doctor: *Mgr. Markéta Mohaplová*

Basic description:

The Department of Clinical Psychology currently comprises 27 full-time equivalent positions, of which 17 are assigned to the paediatric section of the hospital and 10 to the adult section. A total of 42 staff members work at the Motol site in various FTE capacities, providing psychodiagnostic and psychotherapeutic care for adult and paediatric patients. All psychologists are primarily based in their home clinical departments, while psychological care for other departments is provided on a consultation basis. **In 2025, hospital physicians submitted approximately 3,000 requests for psychological care for hospitalised patients, the vast majority of which involved repeated diagnostic, supportive or psychotherapeutic contact. In addition, more than 3,700 outpatient services were reported, primarily for patients with serious illnesses requiring long-term follow-up care.** Psychologists are members of multidisciplinary teams within specialised care centres. In the Motol section, this includes 15 centres whose staffing requirements include a psychologist.

Home departments in the paediatric section:

- Paediatrics - more than three full-time equivalent positions, for example for children included in transplant programmes and children with chronic renal failure, cystic fibrosis or diabetes
- Child and Adolescent Psychiatry - three full-time equivalent positions, primarily focused on differential diagnosis; psychologists are part of the autism, DBT and eating disorders teams
- Paediatric Neurology - two and a half full-time equivalent positions in the epilepsy surgery centre, focused on developmental and cognitive assessment in rare neurological diseases and injuries
- Paediatric Oncology - three full-time equivalent positions, providing not only guidance and therapeutic support, but also diagnostic assessment for the long-term follow-up of children with late effects of oncological treatment; psychologists are members of the multidisciplinary team for children with CNS tumours
- Phoniatrics - 1.5 full-time equivalent positions, focused on long-term follow-up and diagnostic assessment of children with implants
- Partial positions are also allocated within the paediatric section to cardiac surgery, surgery and orthopaedics, rehabilitation, neonatology and the family centre

Home departments in the adult section:

- Neurology - five full-time equivalent positions across several specialised care centres: cognitive disorders, epilepsy surgery, MS centre, cerebrovascular diseases and ataxias
- Pulmonology and the Third Department of Surgery - primarily in connection with the transplant programme
- Internal Medicine - as part of the bariatric programme
- Neurosurgery - combined position for paediatric and adult patients
- Oncology - diagnostic and therapeutic work
- Centre for Follow-up Care (CNP) - one full-time equivalent position
- Part-time positions are assigned to the spinal unit, rehabilitation and the pain centre

The Department of Clinical Psychology also provides basic psychological support services for employees of Motol University Hospital, primarily assistance with arranging long-term care.

The department is **accredited by the Ministry of Health of the Czech Republic for the theoretical-practical and practical components of specialist training in Clinical Psychology, Paediatric Clinical Psychology and Psychotherapy**. In connection with the merger with Na Homolce Hospital, all three programmes will undergo reaccreditation.

Grants:

Psychologists participate as co-investigators in several research projects at their home departments, including paediatric and adult neurology and paediatrics.

Publications:

Publications by members of the Department of Clinical Psychology were included in the annual report for the internal grant.

Blood Bank Department

Senior Doctor: **MUDr. Eva Linhartová**

Chief Laboratory Technician: **Radka Schrollová**

Basic description:

The Blood Bank Department ensures the purchase, storage and issue of all types of blood components for patients of Motol University Hospital. **In 2025, a total of 27,369 transfusion units of all types of blood components were issued.**

The Blood Bank Department performs basic and specialised immunohaematological testing according to the requirements of clinical departments, prenatal testing for the antenatal clinic of the Department of Gynaecology and Obstetrics of the 2nd Faculty of Medicine, Charles University and Motol University Hospital, and, when required, provides blood components for intrauterine and exchange transfusions. **In 2025, basic pre-transfusion testing included 9,531 blood group tests, 21,439 antibody screening tests and 42,528 compatibility tests.** The number of specialised immunohaematological tests remained similar in 2025. Prenatal testing

remained largely unchanged. **In 2025, a total of 11,050 blood components were irradiated.**

In the autotransfusion and apheresis section, autologous whole blood collections are performed mainly for patients of the orthopaedic departments of Motol University Hospital and the Department of Urology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital, as well as for patients of Na Homolce Hospital. **In 2025, a total of 78 autologous whole blood collections and 185 autologous apheresis collections were performed, including 25 PBPC collections and 11 PBMC collections for the manufacture of a Novartis medicinal product for patients of the Department of Paediatric Haematology and Oncology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital, as well as 149 apheresis collections for ECP (extracorporeal photochemotherapy).**

The department provides teaching within the 2nd Faculty of Medicine, Charles University, as well as undergraduate and postgraduate education in transfusion medicine for physicians and non-medical healthcare professionals.

Department-specific services:

- Laboratory section
- Autotransfusion and apheresis section
- Irradiator for blood component irradiation

New methods and procedures:

- The department collected autologous peripheral blood progenitor cells (PBPC) and mononuclear cells (PBMC) for the manufacture of a medicinal product for paediatric patients of the Department of Paediatric Haematology and Oncology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital (DPHO).
- Extracorporeal photochemotherapy was performed for patients of the Third Department of Surgery of the 1st Faculty of Medicine, Charles University and Motol University Hospital after lung transplantation, as well as for paediatric patients.

Unique equipment:

- Erytra + Eflexis automated immunohaematology analyser
- MacoGenic G2 irradiation system used for UVA irradiation of blood cells according to the THERAFLEX ECP protocol using an offline technique

Significant events in 2025:

- In cooperation with the Department of Paediatric Haematology and Oncology, the department successfully defended its international reaccreditation by the Joint Accreditation Committee ISCT-EBMT (JACIE) for peripheral blood stem cell collection using a cell separator

Department of Rheumatology for Children and Adults

Senior Doctor: *doc. MUDr. Rudolf Horváth, Ph.D.*

Head Nurse: *Indira Jankovičová*

Basic description:

The Department of Rheumatology for Children and Adults provides comprehensive diagnosis, treatment and follow-up care for paediatric and adult patients with inflammatory rheumatic diseases, with a particular focus on juvenile idiopathic arthritis, rheumatoid arthritis, ankylosing spondylitis and other spondyloarthritides, psoriatic arthritis, systemic connective tissue diseases and primary vasculitides. Patient care also necessarily involves collaboration with other medical specialties and laboratory support services. The department actively provides consultation services within Motol University Hospital and also offers specialist consultation support to other healthcare institutions in Prague and elsewhere in the Czech Republic.

In 2025, the department carried out 6,612 outpatient examinations, 6,950 blood collections, 4,660 minimal-contact visits, 775 consultations and 194 specialised ultrasound examinations, and provided 422 specialist inpatient consultations at departments of Motol University Hospital.

Specialised outpatient units / clinics / centres:

- Specialised Rheumatology Outpatient Unit for Adults
- Specialised Rheumatology Outpatient Unit for Children
- Specialised Outpatient Unit for Primary Vasculitides
- Specialised Outpatient Unit for the Diagnosis and Treatment of Autoinflammatory Syndromes
- Early Psoriatic Arthritis Outpatient Unit
- Musculoskeletal Ultrasound Outpatient Unit
- Clinical Osteology Outpatient Unit
- Capillaroscopy Outpatient Unit
- Biologic Therapy Centre for Children and Adults with Rheumatological Indications

New methods and procedures:

- The portfolio of biologic therapies was expanded to include new dual IL-17A and IL-17F inhibitors for ankylosing spondylitis, non-radiographic spondyloarthritis and psoriatic arthritis.
- The portfolio of biologic therapies was also expanded to include IL-6 inhibitors for GCA (giant cell arteritis) and PMR (polymyalgia rheumatica).
- The therapeutic portfolio was further expanded to include targeted synthetic small molecules (JAK inhibitors) for the treatment of RA (rheumatoid arthritis), PsA (psoriatic arthritis), axSpA (axial spondyloarthritis) and JIA (juvenile idiopathic arthritis).
- The range of biologic therapies was additionally expanded to include new IL-1 inhibitors for rare autoinflammatory syndromes.
- Bedside diagnosis and dynamic monitoring of inflammatory rheumatic disease activity using musculoskeletal ultrasound became established in routine practice.

- In cooperation with the Department of Radiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital, whole-body MRI examinations are performed in specific indications, such as CRMO (chronic recurrent multifocal osteomyelitis).
- In cooperation with several university dermatology departments, a programme for the early diagnosis of psoriatic arthritis was initiated.
- As part of the Motol University Hospital's institutional support projects, ultrasound assessment was established across a broad spectrum of inflammatory and non-inflammatory rheumatic diseases.

Unique equipment:

- Two ultrasound systems (Esaote MyLab Class C and Esaote MyLab Seven) equipped with high-frequency probes
- Portable Vscan Air™ ultrasound system
- VIDEOCAP 3.0 D1 capillaroscope for assessment of pathology in patients with SSc, SLE, MCTD and systemic autoimmune diseases

Significant events in 2025:

- A major international project focused on psoriatic disease was initiated - the "Hippocrates Prospective Observational Study (HPOS)". The principal investigator is Prof. Dr. Laura Coates, MBChB, MRCP, Ph.D., of the Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, Oxford, United Kingdom. The national coordinator and principal investigator for the Czech Republic is doc. MUDr. Rudolf Horváth, Ph.D.
- As of 31 December 2025, Czech Science Foundation grant No. 23-06676S, "Adaptor Protein PSTPIP2 and Chronic Multifocal Osteomyelitis in Mouse Models and Human Patients", was successfully completed. The principal investigator was Mgr. Tomáš Brdička, Ph.D., of the Institute of Molecular Genetics of the Czech Academy of Sciences, and the co-investigator was MUDr. Dita Cebecauerová, Ph.D., of the Department of Rheumatology for Children and Adults of Motol University Hospital. The grant was conducted between 2023 and 2025.
- The department's employees regularly give lectures at national scientific congresses organised by the Czech Society for Rheumatology of the Czech Medical Association of J. E. Purkyně, as well as at international EULAR and ACR congresses.
- The centre actively participates in presenting results from the ATTRA registry both in the Czech Republic and at international EULAR and ACR congresses.
- Work on the Motol University Hospital internal institutional support grant entitled "Comprehensive Scientific Research Programme for the Diagnosis, Monitoring and Treatment of Rheumatic Diseases in Children and Adults" continued successfully.
- A total of seven international publications in journals with an impact factor were published, including three Q1 publications and two Q2 publications.

Department of Transplantation and Tissue Bank

Senior Consultant: **MUDr. Jan Burkert, Ph.D.**

Head Nurse: **Mgr. Pavla Křížová**

Basic description:

The Department of Transplantation and Tissue Bank is the only department in the Czech Republic to provide both an organ donation and transplantation programme as a transplant centre (TC) and tissue procurement and transplantation as a tissue establishment (TE).

Department-specific activities:

1) The Department of Transplantation and Tissue Bank - TC creates the organisational conditions enabling potential organ and tissue donors to be identified at individual departments of Motol University Hospital, and enabling organ and tissue retrieval, as well as individual national organ transplantation programmes covering the whole Czech Republic, to be carried out.

These are:

- **National Paediatric Kidney Transplantation Programme**, lead physician doc. MUDr. Jakub Zieg, Ph.D. – Department of Paediatrics, 2nd Faculty of Medicine, Charles University and Motol University Hospital.
- **National Lung Transplantation Programme for Children and Adults**, lead physician prof. MUDr. Robert Lischke, Ph.D. – Third Department of Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital.
- **National Paediatric Heart Transplantation Programme**, lead physician prim. MUDr. Roman Gebauer - Children's Heart Centre, 2nd Faculty of Medicine, Charles University and Motol University Hospital.

2) The Department of Transplantation and Tissue Bank - TE operates the Specialised Tissue Bank (STB 85). It is responsible for the procurement, processing, storage and distribution of cardiovascular tissue from deceased donors, bone tissue from living and deceased donors, and amniotic membranes from living donors. **The National Bank of Allogeneic Heart Valves** operates nationwide and supplies valve grafts to all cardiac surgery centres in the country.

One of the aims of the TC is also to perform as many multiorgan procurements from deceased donors as possible, either in the central operating theatres of Motol University Hospital, at other transplant centres in the Czech Republic, or abroad, primarily in Slovakia. In exceptional cases, multiorgan procurement is performed at Motol University Hospital from a donor indicated at another transplant centre and transported to Motol University Hospital.

In 2025, **16 multiorgan procurements from deceased donors were performed, including one DCD donor**. Converted per million population (pmp), this represents **49.65 donors pmp**. The Motol University Hospital region covers **311,608 inhabitants, meaning that it achieved the highest procurement activity in the Czech Republic in 2025**. The overall figure for the Czech Republic was **31.26 donors pmp**.

Three kidney transplantations were performed in children - one from a deceased donor and two from living donors; no other children were transplantable that year.

A total of **71 lung transplantations** were performed, including five using lungs from DCD donors, as part of the organ transplantation programme that is the most demanding logistically, the most complex in terms of coordination, and also the most expensive. Of these, **93%** were bilateral and **66.1%** were performed with ECMO support.

A record total of 437 lung offers were processed.

Local lung retrieval at Motol: **four** cases, representing **5.6%** of all transplantations.

The total number of distant retrievals, i.e. retrieval trips, was **83**, of which **80.7%** were successful.

Transport of retrieval teams was provided by ambulance in **54** cases (**65%**), helicopter in **six** cases (**7%**), turboprop aircraft of the Army of the Czech Republic in **18** cases (**22%**), and aircraft operated by the private company Aeropartner a.s. in **five** cases (**6%**).

Heart transplantation was successfully performed in five children. A total of **19** offers were considered, originating from transplant centres in the Czech Republic, Slovakia, Poland and Spain.

A total of **164 hearts** were accepted into the cardiovascular tissue bank: 139 from deceased donors and 25 from living donors. A total of 203 grafts and conduits were released for transplantation. **Within the National Heart Valve Bank, a record 193 valve grafts and conduits were transplanted.**

Of these, 55 grafts were transplanted by the Children's Heart Centre and 44 by the Department of Cardiovascular Surgery, meaning that 77.8% of grafts were transplanted at Motol University Hospital.

The remaining valve grafts were transplanted externally: CKTCH Brno 53 (27.4%), University Hospital Hradec Králové 36 (18.7%), IKEM 4 (2.1%), Třinec Hospital 7 (3.6%), General University Hospital in Prague 1 (0.5%), Ostrava Hospital 2 (1%), and Olomouc Hospital 1 (0.5%).

A total of 20 vascular grafts were accepted for transplantation in fresh mode, of which 12 were transplanted.

There were **118 bone graft procurements** from living donors and **49 grafts from five deceased donors; 88 grafts were transplanted.**

A total of **37 calvarial grafts** were procured from living donors for autologous use, and **19 cranioplasties** were performed.

A total of 82 amniotic membrane grafts were released for transplantation.

Significant events in 2025:

The number of **lung transplantations** reached **71**, equivalent to **6.4 pmp**, placing Motol University Hospital among the world's 20 largest centres performing more than 50 lung transplantations per year, only six of which are in Europe.

A record 437 lung offers were processed within the national lung transplantation programme! – including **54** offers from Slovakia, six from Poland, three from England, one from Lithuania and one from Germany. This again demonstrated that this programme is the most demanding logistically and the most complex in terms of coordination. Thanks to cooperation with Slovakia under an

intergovernmental agreement, and with strictly monitored mutual balance, the number of lung transplantations for Slovak patients continues to increase. **In 2025, 11 Slovak patients underwent lung transplantation.**

This year, the National Heart Valve Bank registered a record 193 valve graft transplantations. The number of valve grafts transplanted in the Czech Republic has therefore remained above 11 valve grafts pmp. This is the result of long-term, systematic work to promote this method among cardiac surgeons and cardiologists. The demand for pulmonary artery grafts is now so high that, after agreement with the Czech Society of Cardiovascular Surgery, we had to introduce a waiting list for large pulmonary artery grafts. At the same time, we procure hearts from living donors, i.e. from patients who are themselves heart transplant recipients. In this way, we aim to increase the pool of valve grafts in the Czech Republic and, because the diagnosis in these living donors is often dilated cardiomyopathy, an increase can also be expected in the supply of scarce large pulmonary artery grafts. The entire process is supported by our unique national system for allocating valve grafts for transplantation, always two for each patient, and by distribution through the specialised Meditrans Ambulance Service in transport containers that allow unused grafts to be returned to our cryostorage facility.

At the end of the year, the department succeeded in obtaining an **AZV grant entitled “Preparation of Decellularised Allogeneic Heart Valves - an Urgent Need in Modern Cardiac Surgery”**, NW26-02-00345, on which work will begin on 1 January 2026.

Outpatient sector

Department of Paediatric Dermatology

Senior Doctor: **MUDr. Jana Čadová**

Head Nurse: **Veronika Brabcová**

Basic description:

The Department of Paediatric Dermatology provides outpatient services in three outpatient units and a minor procedures room. It is involved in the diagnosis, treatment and observation of paediatric patients with all skin diseases. It also provides consultation services to patients in the inpatient wards of the hospital's paediatric section. It acts as the Czech Republic's super consultation facility for serious or rare diseases. It takes part in training doctors in the fields of dermatovenerology, allergology and paediatrics as a part of postgraduate education. In 2025, 6,904 patients were treated and 239 consultations were provided for patients in the inpatient wards of the hospital's paediatric section.

Specialised outpatient units:

In the general outpatient units, we focus on the diagnosis and treatment of common dermatoses, most frequently atopic eczema, and since 2020 we have also served as a centre for biological treatment. An integral part of the outpatient units includes clinics for genodermatoses, pigmented naevi (digital dermatoscopy), haemangiomas and vascular anomalies, acne treatment, hair and nail disorders, and wart treatment. In the treatment room, we perform diagnostic excisions and complete excisions of minor skin lesions, including electrocautery.

New methods and procedures:

- BTL-4110 Premium biostimulation laser – in 2019, as part of the modernisation of the outpatient clinic, the department was equipped with a biostimulation laser used primarily for the treatment of scars and acne.
- The Illuco IDS-3100 (Magnum+) polarised dermatoscope integrated with a Wood's lamp is now used to improve the diagnosis of vitiligo and superficial fungal infections.
- DermoGenius Ultra (Dermoscan) – the examination of high-risk pigmented lesions using a digital dermatoscope continues to be refined.
- Hyfrecator 2000 electrocauter – to remove minor skin lesions.

Significant events in 2025:

- Staff contribute by lecturing at national professional events and participate in postgraduate training courses at the Czech Medical Chamber and the Institute for Postgraduate Medical Education.

Department of Dermatovenereology for Adults

Senior Doctor: **MUDr. Alena Machovcová, Ph.D., MBA**

Head Nurse: **Mgr. Helena Janoušková**

Basic description:

The Department of Dermatovenereology for Adults is an outpatient department without an affiliated inpatient ward at Motol University Hospital. We provide general and specialised care in dermatology and venereology, with a focus on dermatoaallergy, occupational skin diseases, and the prevention and treatment of skin tumours and other conditions. We are a centre for the biological treatment of psoriasis, atopic dermatitis, chronic urticaria and hidradenitis suppurativa. We have a fully equipped operating theatre for the surgical or laser removal of skin tumours, pigmented naevi and similar lesions. **In 2025, more than 2,903 procedures were performed. More than 8,130 patients were treated on an outpatient basis, and almost 22,383 treatments were provided.**

Specialised outpatient units:

- Venereology Outpatient Unit
- Outpatient Unit for Pigmented Naevi and Skin Tumours
- Dermatoallergy and Occupational Skin Diseases Outpatient Units
- Lymphology Outpatient Unit
- Acne Advisory Clinic
- Outpatient Unit for Patients after Organ Transplantation
- Nail Advisory Clinic (ingrown nails, abnormal nail curvature)
- Outpatient Unit for the Diagnosis and Treatment of Nail Diseases
- Centre for the Biological Treatment of Psoriasis, Chronic Urticaria, Hidradenitis Suppurativa, Atopic Eczema and Cutaneous Lymphomas
- Phototherapy Day-care Centre

Department of Central Operating Theatres for Children

Senior Consultant: **MUDr. Luboš Zeman**

Head Nurse: **Bc. Alice Podařilová**

Basic description:

The Department of Central Operating Theatres for Children (Paediatric COT) centralises all surgical procedures performed by both surgical and non-surgical specialties in the paediatric section of the hospital, with the exception of cardiac surgery. These include paediatric surgery, ENT, orthopaedics, oral and maxillofacial surgery, and neurosurgery. Bone marrow sampling, trephine biopsies, and the insertion of central venous catheters and PICC and midline catheters are also performed here. The Department of Central Operating Theatres for Children also serves as a centre for undergraduate and postgraduate education for medical and non-medical healthcare professionals.

A total of 7,016 surgical procedures were performed in 2025.

Since 1 December 2024, the operating theatres of the Department of Ophthalmology have no longer been part of the central operating theatres and now operate as a separate unit within the department. For this reason, ophthalmic procedures are not

included here, and the total number of procedures is therefore lower than in previous years. By contrast, the number of procedures in all other specialties increased slightly compared with the previous year. The exception is ENT, where so-called day surgery procedures are not included in the 2025 figures for the Department of Central Operating Theatres for Children.

New methods and procedures introduced over the past three years:

Department of Paediatric Surgery:

- SILS (single-port) MiniACE
- Malone appendicostomy
- Anoplasty with dorsal mobilisation of the rectum
- Perineum-sparing repair of vestibular fistula
- Percutaneous laparoscopic endoscopic jejunostomy (PLEJ)
- Macedo urethroplasty for subcoronal hypospadias
- “Nursing wash-out” in patients with Hirschsprung’s disease
- Primary laparoscopic procedures in patients with Hirschsprung’s disease
- Expansion of the spectrum of minimally invasive procedures
- Laparoscopically assisted PEG from gastrostomy in cooperation with the Department of Paediatrics
- A total of **1,972** procedures were performed in this specialty.

Department of ENT:

- The second paediatric patient in the Czech Republic received an auditory brainstem implant.
- Expansion of instrumentation for endoscopic surgery.
- A total of **2,204** procedures were performed in this specialty.

Department of Paediatric and Adult Orthopaedics and Traumatology:

- In the field of paediatric orthopaedic oncology, the first customised scapular and shoulder joint replacement was performed, as well as a customised growing proximal tibial replacement.
- Further development was achieved in the field of “growing endoprostheses”, including a growing total femur component comprising a hip joint endoprosthesis, femur and knee joint.
- A total of **1,392** procedures were performed in this specialty in paediatric patients.

Department of Paediatric and Adult Neurosurgery:

- Introduction of deep brain electrode implantation for invasive stereoencephalographic monitoring.
- Introduction of intraoperative neuromonitoring during brain surgery.
- Wider use of navigation systems in neurosurgery.
- Introduction of NIRS monitoring of regional CNS perfusion in patients under general anaesthesia.
- A total of **475** procedures were performed in this specialty.

Department of Paediatric and Adult Dentistry:

- Augmentation of bone defects using a 3D mesh.
- A total of **535** procedures were performed in this specialty in paediatric and adult patients.

Department of Gynaecology and Obstetrics:

- No new methods were introduced.
- A total of **15** procedures were performed in this specialty.

Within the Department of Anaesthesiology, Resuscitation and Intensive Medicine, CVC, PICC and midline catheters are inserted at the Department of Central Operating Theatres for Children. In 2025, a total of **420** such procedures were performed.

In the field of transplantology, three kidney transplants were performed.

Unique equipment:

- Full HD laparoscopic tower with digital image upscaling to 4K with integrated NBI capability to support fluorescence diagnostics using ICG contrast
- Modernised operating table accessories – head support system for neurosurgical procedures
- Duet Encompass system – advanced video system for urology and pelvic floor EMG with direct integration with X-ray equipment
- Ultra-modern 4K arthroscopic tower used in both the paediatric and adult sections of the department
- Microinstrumentation for paediatric FESS procedures
- High-speed B. Braun bone drill
- Clarity ultrasonic aspirator
- Expansion of stainless-steel equipment in the sterile operating theatre area for implant container storage, including mobile wheeled cabinets
- Digitalisation of computer and audiovisual technology, including preparation for data transmission to conference rooms of individual departments

Significant events in 2025:

- A unique orthopaedic oncology procedure – implantation of a growing total femur endoprosthesis component involving the hip joint, femur and knee joint
- The Department of Central Operating Theatres for Children is also a highly sought-after training centre

Department of Central Operating Theatres for Adults

*Senior Consultant: **MUDr. Martin Hanus, Ph.D., MBA***

*Head Nurse: **Mgr. Vladana Roušalová***

Basic description:

The Department of Central Operating Theatres for Adults (Adult COT) provides surgical services for eight surgical departments within the adult section of Motol University Hospital. A total of 24 operating theatres provide facilities for both routine surgical procedures and highly specialised surgery, including lung transplantation and complex multidisciplinary procedures for oncology and polytrauma patients.

Anaesthetic care is provided by the Department of Anaesthesiology, Resuscitation and Intensive Medicine of the 2nd Faculty of Medicine, Charles University, while technical support is provided by the Department of Biomedical Engineering.

In 2025, a total of 19,167 surgical procedures were performed at the Department of Central Operating Theatres for Adults. These included 71 lung transplants and 521 robotic procedures, representing a further year-on-year increase.

The department also provides undergraduate and postgraduate education for medical and non-medical healthcare professionals.

New methods and procedures:

- Continuation and expansion of robotic surgery using the second DaVinci Xi system, including an increasing number of robotic cardiac surgery procedures
- Robot-assisted knee replacements at both orthopaedic departments

Unique equipment:

- Two DaVinci Xi robotic surgical systems
- Replacement of coagulation devices, including accessories
- Staff adaptation and evaluation of the effectiveness and benefits of newly acquired technologies in clinical practice

Significant events in 2025:

- Three nurses completed post-secondary specialist training in perioperative care.
- Eight orderlies successfully completed the accredited General Orderly qualification course.
- 68 students in the 3rd year of the Bachelor of General Nursing programme completed their nursing practice at the Central Operating Theatres for adults.

Primary Care Department

*Senior Doctor: **MUDr. Jaroslava Kulhánková***

*Head Nurse: **Mgr. Alena Kašajová***

Basic description:

The Primary Care Department provides acute and long-term preventive care to employees, non-Motol patients registered under the capitation system, preventive examinations for secondary school and university students, insured and uninsured foreign nationals with Czech health insurance companies, and enhanced care for persons with Czech health insurance. We screen registered patients for colorectal cancer, diabetes mellitus and hypertension, and provide follow-up care for patients with type 2 diabetes mellitus and hypertension. We work with the Department of Hospital Hygiene and Epidemiology at Motol University Hospital to examine and vaccinate employees in current epidemiological situations. The department is an undergraduate and postgraduate teaching facility and is accredited in the field of general practice.

In 2025, **17,292** patients were treated at the Primary Care Department, including **3,924** preventive examinations, including initial examinations; **834** adults and **736** children were vaccinated.

Emergency Department and Medical First Aid Service for Children

Senior Doctor: **MUDr. Jitka Müllerová Dissou, MBA**

Head Nurse: **Ing. Mgr. Monika Vilímová, DiS., MBA**

Basic description:

The Emergency Department and Medical First Aid Service for Children provides care for paediatric patients in acute conditions from birth to 17 years + 364 days of age.

The department consists of the following sections: Emergency Department – acute bays; Emergency Department – acute outpatient units.

From 4:00 pm to 7:00 am on weekdays and continuously at weekends, the emergency outpatient units operate as a paediatric out-of-hours service. Priority 1 and 2 patients and patients handed over by the ambulance service are treated in the acute bays of the Emergency Department.

The following diagnostic methods are available directly in the department: POCT ABR, ECG, ultrasound, statim PCR, ID NOW, POCT CRP and MXA. CT, ultrasound, X-ray and MRI are located in the immediate vicinity of the Emergency Department.

In 2025, a total of 27,246 paediatric patients were treated at the Emergency Department and Medical First Aid Service for Children, including 5,727 in the acute bays.

Significant events in 2025:

Among the key activities in 2025 was the publication of a handbook and clinical guideline entitled *Child Abuse and Neglect (CAN) Syndrome in Emergency Medicine*. Staff members also actively participated in several national professional congresses and conferences, delivering presentations on pediatric emergency medicine, pediatric procedural sedation and analgesia, child abuse and neglect, prehospital care, adolescent mental health, antimicrobial stewardship, and the management of aggressive patients and intoxications.

Presentations were delivered at major professional events, including the **Colours of Sepsis Conference** (Ostrava), **Dostál's Days of Emergency Medicine** (Ostrava), the **Congress of the Society for Pediatric and Adolescent Emergency Medicine** (Mikulov), **Pediatrics for Practice** (Hradec Králové, Prague, and Plzeň), and the **Akutně.cz Conference** (Brno). Topics included the future of pediatric emergency medicine, sedation and analgesia in children, the management of febrile children in prehospital care, child abuse and neglect syndrome, adolescent suicide attempts, rational antibiotic therapy in out-of-hours pediatric care, and the specific features of pediatric emergency departments.

Adult Emergency Department and Medical First Aid Service for Adults

Senior Doctor: **MUDr. Jiří Karásek, Ph.D.**

Head Nurse: **Bc. Lucie Vacková**

Basic description:

The Adult Emergency Department (AED) has a total of 28 beds. It is equipped with one bed in the procedure room (crash room), 17 monitored beds in bays and 10 beds in the acute outpatient units for surgery, traumatology, neurology and urology. The Adult Emergency Department includes a Medical First Aid Service (MFAS).

The department's primary task is to admit patients with acute and life-threatening conditions from the Motol University Hospital catchment area and patients indicated for specialised centre care, including acute myocardial infarction, stroke, polytrauma and cardiac arrest. We stabilise patients, perform differential diagnoses using a broad range of examination methods, and decide whether patients should be admitted to an acute care bed or continue with outpatient management. Patients are triaged into groups I to V according to severity, which determines the order in which they are treated.

In 2025, **59,812 patients were treated at the AED**, representing a year-on-year increase of 1%. A total of **15,331 patients were treated by the Medical First Aid Service (MFAS)**.

The AED participates in undergraduate teaching for students of the 2nd Faculty of Medicine, Charles University, and serves as an accredited facility for postgraduate training in Emergency Medicine and Intensive Care Medicine.

Publications:

- Moseby-Knappe M, Levin H, Ullén S, Zetterberg H, Blennow K, Lagebrant A, Dankiewicz J, Jakobsen JC, Lilja G, Nichol AD, Eastwood G, Ainscough K, Thomas MJC, Grejs AM, Keeble TR, Rylander C, Düring J, Wise MP, Hovdenes J, Storm C, Borgquist O, Cariou A, Deye N, Lascarrou JB, Bannard-Smith J, Undén J, Vignon P, Legriel S, Šmíd O, Pogson D, Karasek J, McGuigan PJ, Joannidis M, Kirkegaard H, Bewley J, Christensen S, Maccaroni MR, Valerianova A, Lundin A, Lybeck A, Leithner C, Varhaník F, Sweet K, Walden A, Friberg H, Cronberg T, Nielsen N; TTM2 biobank study investigators. Blood biomarkers for the prediction of outcome after cardiac arrest: an international prospective observational study within the Targeted Hypothermia versus Normothermia after Out-of-Hospital Cardiac Arrest (TTM2) trial. *Lancet Respir Med.* 2025 Dec 11:S2213-2600(25)00363-7. doi: 10.1016/S2213-2600(25)00363-7. Epub ahead of print. PMID: 41391459. IF 32,8

Department of Hospital Hygiene and Epidemiology

Senior Doctor: **MUDr. Jarmila Rážová, Ph.D.**

Lead Specialist in Public Health Protection: **Mgr. Jana Hrončková**

Basic description:

The activities of the Department of Hospital Hygiene and Epidemiology (DHHE) fulfil the legislative requirements of the Health Services Act and the Public Health Protection Act, namely the obligation of the health service provider to establish and implement a programme for the prevention and control of healthcare-associated infections. In practice, implementing this programme means adopting and carrying out measures to reduce the occurrence or spread of all infections in the medical and

non-medical areas of the hospital according to the specific conditions of individual departments. In 2025, this was one of the department's core activities.

Specific features of the department:

The activities of the DHHE focus on preventive supervision and the implementation of anti-epidemic measures in connection with the occurrence of community-acquired infections, such as viral hepatitis A and influenza, and healthcare-associated infections (HAIs) in hospitalised patients. As part of the ongoing hepatitis A epidemic in the Czech Republic in 2025, the DHHE coordinated anti-epidemic measures in cooperation with KINCM and the public health protection authorities of the City of Prague and the Central Bohemian Region for 368 hepatitis A contacts, including 86 healthcare workers of Motol University Hospital and 19 employees of external companies operating on the hospital premises. In connection with the occurrence of catheter-related bloodstream infections in January and February 2025, 128 employees of the relevant department were gradually trained in hand hygiene.

Data from HAI reports, i.e. incidence data, were continuously monitored and analysed. Barrier measures were ordered and monitored for 2,778 patients, including isolation in cases involving multidrug-resistant strains and subsequent monitoring. For HAI surveillance, the DHHE is the first member of Motol University Hospital's infection prevention and control team to pilot the AI-based "HAIDI" software. Using this software, the DHHE is able to identify HAIs more effectively than with previously used methodologies and procedures. In 2025, an HAI incidence of 5.7% was recorded, with urinary tract infections predominating.

The DHHE met the legislative requirements of the Ministry of Health of the Czech Republic and the State Institute for Drug Control in the areas of environmental bacterial cleanliness monitoring (287 aeroscope measurements, corresponding to 91 inspection reports; 148 particle counter measurements; and 1,272 environmental swabs), endoscopic devices, sterilisation and disinfection equipment (737 inspection reports), and water quality control, including Legionella prevention, with 189 water samples taken, of which 171 were negative for Legionella spp. During 2025, a total of 426 audits of the hygiene and epidemiological regime were carried out, including 196 audits of cleaning companies, compared with 216 in 2024 and 289 in 2023. A further 2,778 epidemiological investigations and 687 room disinfections were carried out, compared with 537 in 2024 and 508 in 2023. Year on year, consumption of hand disinfectants increased to 33.5 litres per 1,000 treatment days, compared with 32.1 litres in 2024 and 27.3 litres in 2023.

The DHHE provided hand hygiene training for all healthcare employees through an e-learning course, and for new hospital employees as part of induction training with practical exercises using a fluorescent disinfectant solution and a UV lamp.

The Department of Hospital Hygiene and Epidemiology continued to ensure daily reporting of patients hospitalised with COVID-19 to the Ministry of Health/Institute of Health Information and Statistics/ISIN registry, imposing isolation and quarantine and other anti-epidemic measures. During 2025, COVID-19 infection was diagnosed in 12 employees (a total of 4,000 employees from March 2020 to 31 December 2025), and 177 patients were hospitalised with this diagnosis (a total of 6,678 patients from March 2020 to 31 December 2024).

The DHHE continuously ensures communication and cooperation with the Prague Hygiene Station in matters relating to hygiene and epidemiological care and occupational health protection. The department also participates in workplace inspections in accordance with Decree No. 79/2013 Coll., as amended (27 inspections in 2025), and is involved in cases of employee injuries caused by sharp contaminated objects. This includes reporting such injuries to the public health protection authority (94 cases in 2025) and implementing measures based on decisions of the public health protection authority concerning occupational health surveillance (13 cases in 2025).

The DHHE continuously reviews and comments on project documentation submitted for planned and ongoing reconstruction projects within the Motol University Hospital campus, as well as project documentation for new buildings within the hospital grounds.

The DHHE organises and participates in educational and training activities for healthcare professionals at Motol University Hospital, as well as undergraduate and postgraduate education for physicians (as an accredited training centre for hygiene and epidemiology within both the core curriculum and specialised specialist training) and non-medical healthcare professionals (certified courses).

Hospital Pharmacy

*Senior Consultant: **PharmDr. Petr Horák***

*Chief Pharmacist: **Mgr. Milan Vegerbauer***

*Head Pharmaceutical Assistant: **Helena Bohabojová***

Basic description:

The Hospital Pharmacy ensures effective and safe pharmacotherapy for both inpatient and outpatient patients and serves as a key specialist department of the hospital in the area of medicinal product management. In addition to dispensing medicinal products, it provides a wide range of services, from the individual and batch preparation of sterile and non-sterile medicinal products to the provision of unregistered medicinal products and medicinal products for clinical trials, as well as clinical pharmaceutical care. The pharmacy also made a significant contribution to the formulation of Motol University Hospital's medicines policy, the development of internal regulations and audit activities within the quality management system. An integral part of its role is providing consultation services for patients and healthcare professionals, as well as ensuring theoretical and practical teaching within undergraduate and postgraduate education.

Specialist units:

- For the preparation of sterile medicinal products:
 - containing cytotoxic substances
 - other sterile products without antimicrobial additives
- For the preparation of medicinal gases
- For the quality control of medicinal products and the preparation of testing reagents
- For the provision of drug information
- For the dispensing of medical devices

Preparation of medicinal products and laboratory diagnostics:

- The **Individual Preparation Unit** provides a wide range of non-sterile medicinal products, particularly for paediatric patients and other specific patient groups. In 2025, a total of 420,330 capsules, approximately 21,000 paediatric suppositories, 2,500 adult suppositories and around 2,800 litres of various liquid dosage forms for children and adults were prepared. An important area of activity is the preparation of medicinal products containing medical cannabis. In 2025, 7,472 g of dried medical cannabis was processed into capsule dosage form. The individual preparation of liquid extracts and topical preparations was also expanded, with 2,604 g of concentrate, i.e. medical cannabis extract, dispensed. The proportion of individually prepared hazardous medicinal products continues to grow, particularly oral forms prepared in an isolator, including preparations of specialised medicinal products for paediatric patients. In 2025, new paediatric formulations were introduced, including ondansetron suppositories, valganciclovir suspension, oseltamivir 15 mg/ml suspension, nadolol capsules and formulations of topical products for the treatment of neuropathic pain, including ointments and creams. The Hospital Pharmacy also addresses persistent shortages of registered medicinal products through individual preparation. Examples include replacements for Framykoin ointment, Batrafen cream and solution, Bactroban ointment, Septonex ointment, Motilium suppositories for children, Rectodelt 100 mg suppositories and dexamethasone suppositories.
- The **Central Cytostatics Preparation Unit** prepared a total of 39,280 doses of parenteral cytostatics in 2025, including approximately 2,800 continuous infusion pump preparations. Centralised preparation ensures a high level of safety for both patients and staff and enables the standardisation of procedures for the administration of high-risk medicinal products.
- The **Sterile Preparation Unit** prepares a range of parenteral preparations that are not available as mass-produced medicinal products, including antidotes and other medicinal products kept in stock. Its main programme involves the preparation of parenteral solutions, such as cardioplegic solutions, hydration and neonatal bags, and ion-containing cardioplegic bags. In 2025, a total of 11,515 of these preparations were prepared. Its activities also include the preparation of sterile eye ointments and eye drops without antimicrobial additives, as well as the provision of individually prepared parenteral nutrition for 23 paediatric and 38 adult outpatients.
- The **Laboratory Diagnostics Unit** prepares and dispenses diagnostic preparations for the laboratory operations of Motol University Hospital. In 2025, 18,689 diagnostic preparations of various types and purposes were dispensed, and 319 diagnostic preparations were individually prepared in the production laboratory according to the specific requirements of individual laboratories. This activity enables a flexible response to the needs of clinical departments and supports the development of specialised diagnostic methods.

Dispensing of medicinal products:

The Hospital Pharmacy **supplies the hospital** with medicinal products and medical devices. In 2025, approximately 939,931 packs of medicinal products were dispensed to the hospital on more than 64,000 requisitions.

A total of 1.32 million units of medicinal products, medical devices and supplementary range items were dispensed **to the public** on 379,000 prescriptions and vouchers; approximately 600,000 patients visited the pharmacy on an outpatient basis. The pharmacy ensures the availability and dispensing of specialised medicinal products to outpatients; in 2025, this involved 108,000 units of these medicinal products. It also provides supplies for chronic patients who are fully or partially dependent on enteral nutrition; in 2025, 661 such cases were recorded, representing a year-on-year increase of 12%.

Clinical pharmacy and clinical trials:

In accordance with the principles of good clinical and pharmacy practice, the Hospital Pharmacy participates in all **clinical trials of medicinal products** conducted at Motol University Hospital. In 2025, 10,170 packs of medicinal products were dispensed as part of clinical trials.

Clinical pharmaceutical care is provided by the **Department of Clinical Pharmacy** of the Hospital Pharmacy. In 2025, clinical pharmacists conducted 813 initial medication reviews for hospitalised patients, prepared 1,605 medication rationalisation plans, performed 1,290 repeat reviews requiring intervention and provided

1,358 requested consultations. This activity makes a significant contribution to optimising pharmacotherapy, improving patient safety and ensuring the rational use of medicinal products.

Science, research and education:

In its scientific and publication activities, the pharmacy team focuses mainly on individually prepared medicinal products for specific age groups, especially paediatric patients, the development of new magistral preparations with suitable formulations and verified stability, and issues relating to oral ion supplementation in individually prepared medicinal products. Another area of interest is research into shortages of medicinal products and staffing needs in hospital pharmacy. The results are regularly presented at professional forums across Europe and published in peer-reviewed journals with an impact factor.

Staff development and cooperation with universities:

In 2025, the Hospital Pharmacy focused on strengthening its team in connection with the planned expansion of operations into the National Oncology Institute – Motol Oncology Centre. In addition to technical preparations, attention was paid to the systematic recruitment, onboarding and development of new employees.

A mentoring system for new employees is in place, along with participation in job fairs at both faculties of pharmacy and a well-developed internship system that introduces students to various professional career opportunities within the department. These activities contribute to the long-term stability of the team and enhance the pharmacy's attractiveness to young professionals.

Significant events in 2025:

We were involved in research into the impact of shortages of medicinal products and medical devices in Europe.

We contributed to the publication of the recommended procedure Preparation of Hazardous Medicinal Products within the Czech Chamber of Pharmacists.

We contributed new formulations to the Electronic Formulary of Extemporaneous Preparations maintained by the Czech Chamber of Pharmacists.

We participated in the Stability of Extemporaneous Preparations project organised by the Pharmacopoeia Commission of the Ministry of Health of the Czech Republic.

NURSING CARE

Nursing care is an integral part of healthcare and makes a significant contribution to the quality of services provided to patients and clients. Its main objective is to ensure comprehensive, safe and individually tailored care that respects the needs, dignity and rights of each individual.

Over the past year, emphasis was placed on the professional approach of healthcare staff, ensuring compliance with nursing care standards and the continuous improvement of service quality. Multidisciplinary cooperation, education of patients and their families, and support for the prevention of complications associated with hospitalisation or long-term care were also integral parts of the nursing team's work. Considerable attention was also paid to the professional development of non-medical healthcare professionals through educational activities, training and professional seminars.

Nursing Care Quality Indicators

In accordance with international recommendations, preventive measures, strict compliance with wound healing procedures and monitoring of other modifiable factors, such as the development of pressure ulcers during surgical procedures or when using medical equipment, remain the highest priorities in patient care.

The consultant team continues to increase the number of consultations provided to patients in inpatient departments; in 2025, 235 patients were treated in this way. In 2025, the chronic wound healing clinic treated 105 new patients, representing approximately 1,800 dressing changes over the year. The outpatient clinic embodies the principle of continuity of care for our patients, offering them the opportunity to continue wound treatment and healing on an outpatient basis following discharge from acute care.

In November, Motol University Hospital took part for the twelfth time in activities marking International STOP Pressure Ulcer Day, aimed at raising awareness of the prevention and treatment of pressure ulcers among both the general public and healthcare professionals. We also provide the practical component of the Certified Wound Healing Course; next year, we plan to extend the accreditation to include the theoretical component of the course. Members of our team actively participate in educational events throughout the Czech Republic, and organising seminars and lectures within our facility is a matter of course.

In the area of falls among hospitalised patients, we continue to focus primarily on consistent prevention measures, including information leaflets, banners, identification wristbands and verbal instruction for patients, and on monitoring the relationship between falls and medication use. In 2025, we managed to keep the number of injuries related to patient falls low.

PICC Team

During 2025, nurses in the adult care section inserted a total of 3,854 vascular access devices

2,604 PICC lines, 60 midline catheters and 1,190 long peripheral venous catheters). They also routinely insert short peripheral venous catheters and perform blood sampling in patients with difficult intravenous access (DIVA). For these patients,

blood sampling is carried out under ultrasound guidance; in 2025, a total of 419 patients were treated in this way.

Care also includes catheter dressing changes, care of intravenous ports and management of complications associated with vascular access devices. The new facilities have significantly improved the quality of care provided for these vascular access devices. Patients are scheduled for treatment, and during the year the team treated a total of 5,668 outpatients.

In 2025, the centre further expanded its activities to include blood sampling not only for patients with difficult venous access, but for all patients referred to the department. A total of 3,379 peripheral venous blood samples, 1,211 samples from PICC lines and 1,753 samples from intravenous ports were performed.

The adult PICC team forms part of the vascular access team, within which physicians insert additional types of vascular access devices. Nurses assist during these procedures and subsequently provide care for the inserted devices. In 2025, 445 intravenous ports and PICC ports, 49 PermCath catheters and 237 tunnelled central venous catheters were inserted.

Following the establishment of the independent Vascular Access Centre in 2025, there was a significant increase in procedures performed – the number of inserted PICC lines increased by 50%, while the total number of vascular access devices inserted in both inpatients and outpatients increased by 42%.

Department of Medical Nutrition

As part of our work in clinical departments, we introduced an electronic nutritional risk scoring system, which led to a significant increase in the number of nutritional consultations for at-risk patients, rising to almost 12,000. Together with physicians from the nutrition team, we also worked on adjustments to the dietary system.

In 2025, we provided a total of 2,750 outpatient consultations while also expanding the nutrition outpatient clinics to the general public. In March 2025, outpatient care was further expanded to include services for paediatric patients with obesity.

In cooperation with operational nutritional therapists, we were involved in improving the quality of meals provided to patients. Highly processed foods were removed from the menu, and detailed food procurement specifications were developed, taking into account freshness, regional availability and sustainability.

Milk Kitchen Department

The department prepares milk-based nutrition for newborns and children up to two years of age. Milk feeds, teas, porridges and puddings are prepared here. Recently, cooperation with the nutrition team has expanded to include the preparation of special diets, such as ketogenic diets for young patients.

In 2025, the department's staff prepared an average of 50 litres of milk-based nutrition per day, representing approximately 18,250 litres over the year. At the same time, approximately 5,000 litres of fennel tea were prepared during the year.

Food is prepared in accordance with the HACCP system, ensuring the safe and hygienic preparation of infant nutrition.

Central Sterile Services Department

The Central Sterile Services Department (CSSD) provides comprehensive services in the inspection, assembly, packaging and sterilisation of medical devices for all hospital departments. The department's primary objective is to ensure a high standard of quality and safety in the services provided, in accordance with applicable legislation and the hospital's internal regulations.

As in previous years, activity levels continued to increase over the past year. During the reporting period, the number of sterilisation cycles increased by 5% year on year. The total number of cycles performed (steam, chemical and plasma sterilisation) reached 14,711.

This trend is primarily related to:

- the increase in the number of surgical procedures
- the expansion of the range of healthcare services provided
- the higher turnover of surgical instruments
- requirements for more frequent reprocessing of certain medical devices

In response to the increased workload, we optimised shift organisation and working procedures.

The main measures introduced included:

- adjusting duty schedules according to the current workload
- redistribution of responsibilities among staff
- standardisation of working procedures

For the coming year, we plan to:

- increase the capacity of washer-disinfectors
- expand and modernise equipment and instrumentation
- further develop the digitalisation of documentation and the traceability system
- expand the workforce in cooperation with the recruitment department
- increase operational efficiency through changes in material processing logistics

Social Care

In 2025, the Social Department provided social support to a total of 5,100 adult patients, representing an increase of 625 patients compared with 2024. Social support was provided to 4,485 patients in acute inpatient wards, while 615 patients received social care at the LDN – Centre for Follow-up Care ("CFC").

A total of 1,244 patients were discharged from inpatient wards with home healthcare arranged, while home hospice care was arranged for 24 patients. A total of 405 patients were discharged to follow-up rehabilitation care beds, and inpatient hospice care was arranged for 12 patients. Overall, 945 patients required placement in long-term care beds, of whom 346 were placed in the CFC. A further 599 patients were placed in follow-up care facilities outside Motol University Hospital.

A significant increase in patients receiving social care was also recorded among paediatric patients. Healthcare social workers provided interventions for 1,829 children and their families, representing an increase of 306 patients compared with

2024. Social support was provided to paediatric patients across all paediatric departments, including the Neonatal Department and the Department of Child Psychiatry. Families were provided with social and legal counselling, psychosocial support and assistance through foundations. Cooperation with child protection authorities also continued on an ongoing basis.

Staff from the Social Department also participated in the teaching of students in the bachelor's degree programme in paediatric nursing. At the same time, practical training was provided for participants in the accredited qualification course for healthcare social workers.

Cooperation also continued between healthcare social workers and local authorities in the Prague 5 municipal district as part of community planning for social services.

Crisis Intervention Team

The team consists of 17 motivated and specially trained healthcare professionals who primarily work in various departments in both the paediatric and adult sections of Motol University Hospital, in a small number of cases based on an agreement. In addition to their regular duties at their home departments, they provide psychosocial support and crisis intervention to staff members, patients' relatives and patients themselves. As the hospital's only support team, they provide this service continuously, 24 hours a day, 7 days a week.

In 2025, we provided a total of 215 crisis interventions and supportive consultations for paediatric and adult patients and their relatives. We supported 13 paediatric patients and 45 adult patients, and also provided support to 270 relatives and bereaved family members. In total, we helped 328 people who suddenly found themselves in a difficult life situation.

Confidential peer support was provided individually to 59 hospital employees, primarily healthcare professionals. We also provided group support to a team of healthcare professionals following an extraordinary incident at one of the hospital's departments. In cooperation with the SPIS project at the 3rd Faculty of Medicine, Charles University, we supported three nursing students by proactively offering support and reflection on their clinical placements.

Team members also continued their professional development throughout the year. They regularly attended case supervision sessions, developmental intervention sessions and professional refresher training. They actively presented at professional conferences and also attended interdisciplinary congresses and conferences.

Spiritual Care

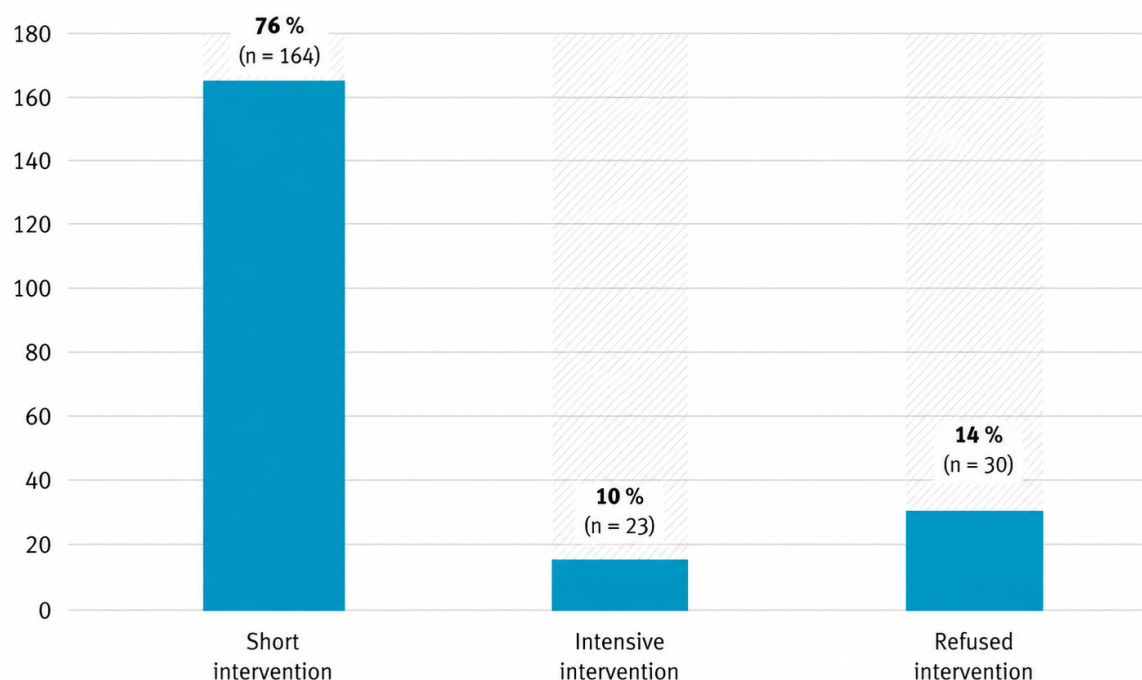
Providing spiritual care has become an integral part of supportive care for hospitalised patients. Spiritual care is provided in both the paediatric and adult sections of the hospital. In 2025, hospital chaplains provided care to 4,750 patients, support to 295 relatives and consultations to 495 employees.

Healthy Hospital

2025 – our small steps towards stopping smoking.

A brief survey using short interventions and questionnaires. We present the results of the interventions carried out in 2025.

Graph 3 Intervention with tobacco/nicotine users.



Intensive intervention – intervention in change of behaviour, high-risk situation drills, regime measures, treatment possibilities.

Excellent results continue to be achieved through the three-month weight stabilisation and reduction programme offered to employees by the **Department of Rehabilitation and Sports Medicine of the 2nd Faculty of Medicine, Charles University and Motol University Hospital**. Positive results are also being achieved through the three-month exercise therapy programme for patients. We also continue to use libraries and work with **STOB**.

Our “Chain Reading” libraries are working very well, with hospital visitors willingly donating books.

The **AcorD Motol** choir also brings us great joy.

Volunteer Centre

In 2025, the Volunteer Centre of Motol University Hospital focused on strengthening cooperation with hospital staff, awareness-raising activities and improving communication with volunteers. At the end of the year, we had 250 active volunteers on record.

We organised 36 group events for patients, including art workshops, theatre and musical performances, mascot visits and animal-assisted programmes. Cooperation also continued with the Municipal Public Library, which provides educational lectures for CFC patients.

We became involved in a Ministry of Health project focused on visits to stroke patients and presented the volunteer programme to the media (TV NOVA) and to students of the Archbishop's Grammar School. We actively participated in conferences on animal-assisted therapy, Ministry of Health round tables and the update of the Ministry of Health methodological manual on animal-assisted therapy.

The most significant event of the year was the professional conference entitled **The Impact of Animal-Assisted Therapy in Healthcare Facilities**, held at Motol University Hospital, which attracted considerable interest from both professionals and the general public.

We also established new cooperation with the Together with Courage Foundation, which organises visits to paediatric oncology and paediatric patients through board games. Individual volunteer visits are recommended by physicians, psychologists and nurses, particularly for patients without regular contact with relatives or those experiencing a higher degree of uncertainty.

The benefits of visits involving animals are particularly evident in palliative care patients, patients in NIP/DIOP care and patients in the Spinal Unit. In the NIP/DIOP department, animals support non-verbal communication and fine motor skills. Visits with rabbits are especially popular.

The departments we visited included, for example:

- **Paediatric departments:** Surgery 2C, Surgical ICU 7B, Endocrinology and Diabetology 1B
- **Adult departments:** 3rd Surgery ICU – 2C, Department of Internal Medicine 4C

For volunteers, we organised informal events including barbecues, Halloween events and sausage-roasting gatherings, as well as a seminar on risks and supervision. We would also like to thank the donors who contributed gifts for patients and art supplies for volunteers.

Volunteer programme in numbers (hours/patients):

- Total: 4187/4607
- Regular visits: 2145/2021
- Group canine-assisted therapy: 463/1649
- Individual requests: 924/332
- Individual animal-assisted therapy: 98/56
- Group events: 557/549

INDEPENDENT HOSPITAL OMBUDSMAN DEPARTMENT

In 2025, the Independent Hospital Ombudsman Department handled a total of **390 complaints**.

A further **536 enquiries** were received. These non-written submissions were dealt with directly, without the need to open a file, and in many cases represented a possible preliminary stage before a formal complaint. Enquiries are recorded in the department's database according to the subject matter, the person filing the submission and other available information.

A total of **47** complaints were assessed as **justified**, **69 as partially justified** and **221 as unjustified**. There were **8 unauthorised complaints**, where the complaint was submitted by a person who did not have legal standing to lodge it, and **45 unreviewable complaints**, where the content of the complaint was so general that the facts reported could not be investigated.

In justified or partially justified complaints, the most common corrective measure was **employee training**, which was used in **97** cases.

In terms of form, submissions were most often made **electronically**, as in previous years, with **373** complaints submitted in this way.

In terms of the complainant, **patients** were the most frequent group, accounting for **188** complaints.

In accordance with the Methodological Guideline of the Ministry of Health of the Czech Republic on the handling of complaints under Part Eight of the Health Services Act using the hospital ombudsman system, complaints are broken down by subject matter as follows: non lege artis procedure, communication, comfort, informed consent, discrimination, and other breaches of legal regulations and the provider's internal regulations. In terms of subject matter, the highest number of complaints concerned **inappropriate communication – 212** complaints, and **patient comfort – 80** complaints.

In many cases, however, a single submission does not concern only one subject; rather, the complainant mentions several matters that they wish to draw attention to and have investigated.

The submissions in question are always addressed with the management of the individual departments. At clinical departments, they are addressed with the head of department, chief physician or head nurse, depending on the specific activity to which the complaint relates.

Where appropriate in view of the nature of the complaint, an **oral discussion** is held in order to resolve it successfully. Experience with oral discussion of complaints has been very positive.

The department against which the complaint is directed is informed of the outcome of the complaint investigation. In the case of partially justified and justified complaints, the head of the department concerned determines the necessary **corrective measures** (in the vast majority of cases, these involve some form of employee training, but they may also include operational measures, staff sanctions or other possible remedies for the unsatisfactory situation).

In accordance with the requirements of applicable legislation, the Independent Hospital Ombudsman Department keeps **detailed records** of complaints handled according to individual criteria: the date the complaint was submitted, the



complainant, their relationship to the patient if the complaint is not submitted by the patient themselves, the form of submission, the department and section against which the complaint is directed, information on any oral discussion of the complaint, the date and the manner in which the complaint was resolved, any corrective measures, or information on the submission of a complaint to the administrative authority that granted the provider authorisation to provide health services and the conclusion of that investigation.

The agenda of the Independent Hospital Ombudsman Department also includes ensuring the role of internal ombudsman and providing assistance in resolving interpersonal conflicts, handling reports of possible unlawful conduct of which employees have become aware in connection with their work, and delivering training in healthcare legislation according to the requirements of individual clinical departments.

SCIENTIFIC AND RESEARCH ACTIVITIES

The Motol and Homolka University Hospital supports scientific and research activities as an integral part of its work. This Annual Report is submitted for 2025 for Motol University Hospital, which is listed as a research organisation in the national register of research organisations:

<http://www.msmt.cz/vyzkum-a-vyvoj-2/fakultni-nemocnice-v-motole>. From 2026, following the merger with Na Homolce Hospital, the name of the university hospital and its entry in the above database of research organisations will change.

Scientific and research projects at the university hospital span the full range of disciplines and involve almost all departments and institutes. In its scientific activities, Motol University Hospital collaborates with faculties of medicine, primarily the 2nd Faculty of Medicine, Charles University, the 1st Faculty of Medicine, Charles University, and a number of other research organisations in the Czech Republic and abroad. It supports innovation and the integration of research outcomes in practice in accordance with new trends in the application of outcomes of scientific research activities.

Support for science, research and innovation at Motol University Hospital is provided through combined funding from institutional and earmarked resources, predominantly in the form of grants. Research teams from Motol University Hospital participate in international projects, mainly within the EU, where they work on projects under Horizon 2020, Horizon Europe and other schemes. Teams of Motol University Hospital are also significantly involved in the European Reference Networks for Rare Diseases, the so-called ERN.

Institutional Support for Research and Grants

- Since 2012, Motol University Hospital has been a recipient of institutional support administered by the Ministry of Health of the Czech Republic.
- Institutional support of the research organization is organized at MUH through a system of internal grants at the hospital's individual departments and institutes. 2025 was the thirteenth year of this scheme.
- In 2025, the hospital was the principal beneficiary of 27 projects of the Czech Health Research Council of the Ministry of Health and a co-beneficiary of 30 projects. As part of institutional support, 35 internal grant projects and 2 JUNIOR projects were carried out in 2025. The hospital also carried out 2 Technology Agency of the Czech Republic projects, 2 Czech Science Foundation projects and one OP JAK project of the Ministry of Education, Youth and Sports. The hospital was also significantly involved in the EU's Horizon 2020 and Horizon Europe schemes. Activities were also carried out within the European Reference Networks Centres.
- In 2025, two projects carried out at Motol University Hospital and completed on 31 December 2024 in the field of paediatric haematology and oncology received the Minister of Health Award.

For the first project, Motol University Hospital acted as the principal beneficiary: Assoc. Prof. MUDr. Michal Zápotocký, Ph.D., from the Department of Paediatric Haematology and Oncology, reg. no. NU21-07-00419.

Motol University Hospital participated in the other award-winning project as another participant: reg. no. NU21-03-00128, investigator Prof. MUDr. Jan Zuna, Ph.D., beneficiary 2nd Faculty of Medicine, Charles University, co-investigator for Motol University Hospital Prof. MUDr. Jan Starý, DrSc.
<https://mzd.gov.cz/tiskove-centrum-mz/ceny-ministra-zdravotnictvi-za-zdravotnicky-vyzkum-a-vyvoj-2025/>

- The support of research activities is directly conditional on the outputs of scientific assessments reported to the national databases of the Research, Development and Innovation Council. The outcomes from the RIV are used for comparisons within the CR and for distributing funds in the Internal Grant system to ensure that individual research facilities are supported in accordance with their performance. In 2025, Motol University Hospital reported a total of 419 outputs in the RIV database. The average impact factor this publication year was 6.11 points. According to the 2017 Methodology, the vast majority of publications were in the first and second quartiles, with the first decile also significantly represented.
- In 2025, Motol University Hospital managed the following allocated and distributed funds in science and research (in CZK):

Agency**Numbers of grants****Amount CZK / EUR**

Czech Health Research Council as the principal investigator	27	76 828 000,00
Czech Health Research Council as the cooperating investigator	30	21 042 000,00
Technology Agency of the Czech Republic as the cooperating investigator	2	2 459 914,00
Czech Science Foundation as the cooperating investigator	2	704 000,00
IP	1	83 629 679,00
EU ACCESS AD	1	€ 88 500
IDEA4RC-Horizon RIA	1	€ 227 996,25
IntReALL 2020	1	€ 107 500,00
EDENT1FI	1	€ 813 125,00
MONALISA	1	€ 374 656,00
Salvage	1	33 194 247,00
ERDERA	1	€ 313 600,00
InterReg Central Europe-MedWaveImage	1	€ 241 800,00

- In 2025, the now traditional assessment according to Methodology17+ was carried out, with Motol University Hospital taking the leading positions especially in the assessment of quality of scientific results with significant representation of the hospital's outputs in the first decile in medical sciences.
- In 2025, the Ministry of Health of the Czech Republic also carried out an evaluation of the research organisation, in which Motol University Hospital received an A rating both in the five-year evaluation for 2018–2022 and in the evaluation of outputs from the previous year.
- Priorities of the scientific research activities were gradually defined at the Motol University Hospital. Paediatric specialisations appear to be the strongest directions in research. Research activities are dominated by the Department of Paediatric Haematology and Oncology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital, together with its laboratory and research facilities at the CLIP centre. Paediatric disciplines across their full spectrum also continue to be strongly represented. Among adult medicine disciplines, the Department of Neurology of the 2nd Faculty of

Medicine, Charles University and Motol University Hospital and the Department of Cardiology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital stand out particularly in terms of scientific outputs. The orthopaedic departments have a significant share of the translation outputs. Research activities themselves are primarily carried out in the laboratory facilities of the Department of Paediatric Haematology and Oncology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital, the Institute of Immunology, the Institute of Microbiology, the Institute of Biology and Medical Genetics, and the Institute of Pathology.

- As part of the development of the Motol Oncology Centre, the hospital is strengthening oncology research both at the Department of Oncology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital and at specialised departments including ENT, urology, pulmonology, surgical departments, immunology and others.

Modern Therapies Projects

- MUH has introduced a system of “Modern Therapies” projects in accordance with the support for innovation and integration of scientific research outcomes in practice. Under this scheme, eight projects were conducted in 2025 and practical output in the form of new diagnostic or therapeutic options is expected from all five projects.
- In 2017, together with the Institute of Organic Chemistry and Biochemistry, an invention application was filed with an application for a national patent: Method for detecting joint disease, a device for detecting joint disease, a substance for determining the cause of joint disease, its monitoring and the use of the method, substance and device. We subsequently requested a European patent. Utility model number 32064 was granted in 2018 under the title: A device for detection of joint disease and/or determining the appropriate treatment for joints and a substance for determining the cause of joint disease and its monitoring, and in 2019 a licensing agreement with I.T.A. was concluded. – Intertact s.r.o. The duration of the utility model’s registration was extended until 2025.
- In 2021, a new patent was filed based on the work of the Department of Orthopaedics of the 1st Faculty of Medicine, Charles University and Motol University Hospital and the Institute of Biochemistry of the 2nd Faculty of Medicine, Charles University and Motol University Hospital, entitled “Use of vitamin K2 in the form of MK-7 for the treatment and prevention of calcifications in the musculoskeletal system, in particular for the treatment and prevention of calcific tendinitis of the shoulder and knee”. The patent remained valid in 2025.
- In 2022, another patent originating from the Department of Orthopaedics of the 1st Faculty of Medicine, Charles University and Motol University Hospital was filed, entitled “Method for determining the cause of joint disease by

detecting the level of alpha-defensin obtained from joint effusion”, which remained valid in 2025.

- In 2023, Czech patent application PV 2023-108 was filed jointly with the University of Pardubice; the Department of Paediatric Haematology and Oncology of the 2nd Faculty of Medicine, Charles University and Motol University Hospital participated in the collaboration on behalf of Motol University Hospital. The patent is entitled “Temozolomide-crosslinked staple fibres, their preparation and use” and was applied in 2025.

Combined Programme for Educating Physicians MD/Ph.D. Programme

The combined MD/Ph.D. programme has been running at Motol University Hospital since 2004. Over the past 21 years, 155 students have completed the programme, with 79 students having already obtained both a Ph.D. degree and specialist certification in their field. Thirty active students are enrolled in the programme.

International Activities

In the field of research, we continued to develop international activities, mainly at the level of individual departments and institutes, which is reflected in excellent publication outputs listed in the RIV.

As regards international activities, Motol University Hospital was also actively involved in the system of European Reference Networks for Rare Diseases, ERN. With the addition of four new centres in 2022, the total number of ERN centres increased to 16, all of which are fully operational and undergo regular evaluation. All ERN centres operate as highly specialised care centres.

Creative Achievement Award

Motol University Hospital monitors and recognises quality and achievements in medicine and scientific and research progress. In 2025, the award for the best creative achievement of the previous year was presented to Prof. MUDr. Pavel Dřevínek, Ph.D., from the Institute of Microbiology for the Twinning project linking cystic fibrosis centres across Europe. In the Junior Creative Achievement category, the award was presented to MUDr. Kryštof Šeferna from the Department of Paediatric Haematology and Oncology for outstanding work in the field of paediatric leukaemia published in the journal Hemasphere.

Summary

Taking all of the above areas together, Motol University Hospital ranked as one of the leading research organisations in the Czech Republic in 2025. All of the above activities continue into 2026, which the institution enters as Motol and Homolka University Hospital.

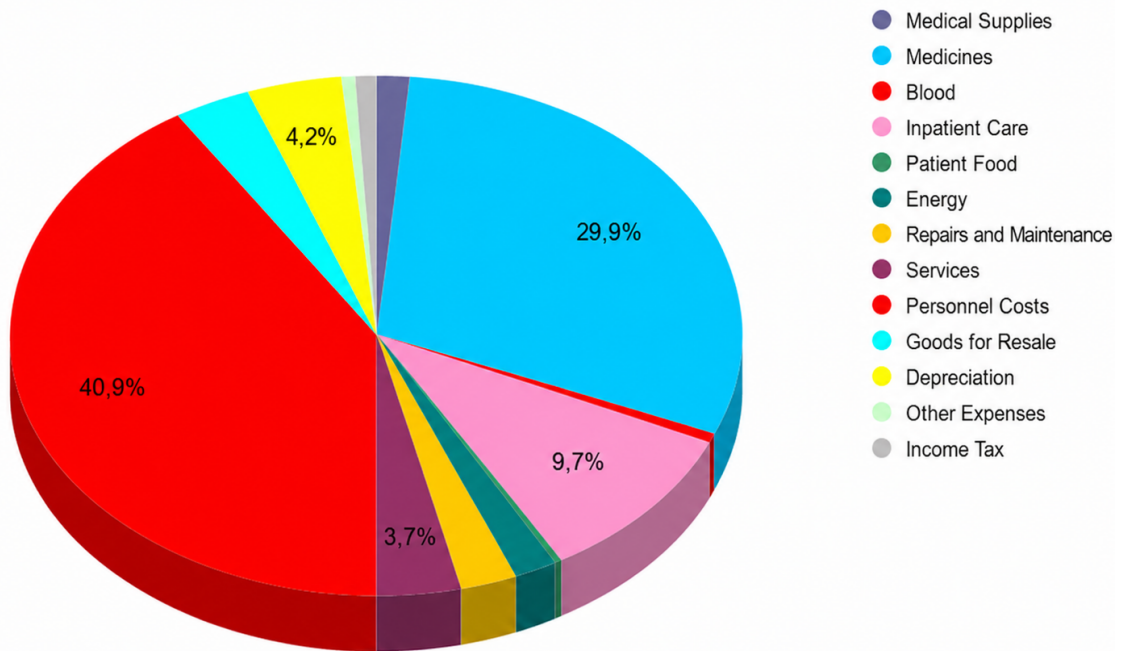
ECONOMIC ACTIVITIES

BALANCE SHEET (abbreviated balance sheet in thous. CZK)

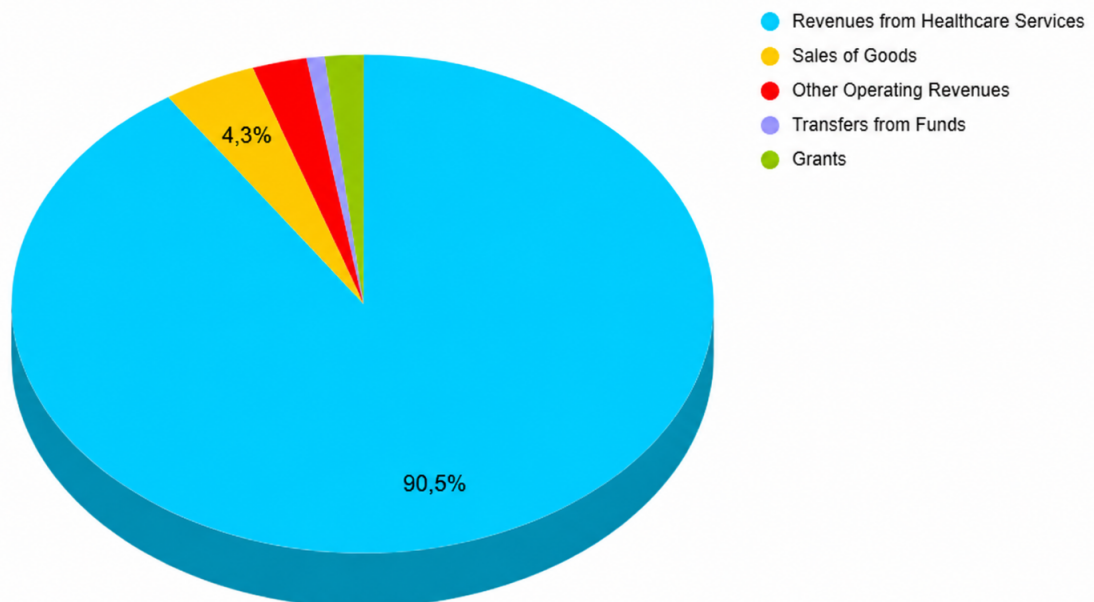
	Status as of 1 January 2025	Status as of 31 December 2025
ASSETS	17 202 833,36	21 521 934,79
Fixed assets	12 046 902,53	13 921 315,28
Long-term intangible assets	35 515,83	39 347,08
Long-term tangible assets	11 990 184,58	13 848 711,23
Long-term financial assets	0,00	0,00
Long-term claims	21 202,12	33 256,97
Current assets	5 155 930,83	7 600 619,51
Stock	562 528,92	520 718,23
Claims	2 997 805,29	3 668 695,55
Financial assets	1 595 596,62	3 411 205,73
LIABILITIES	17 202 833,36	21 521 934,79
Own resources	14 129 690,14	16 267 816,76
Entity's assets	11 944 168,60	13 535 269,15
Entity's funds	2 365 733,18	2 714 778,34
Profit (loss) for current accounting period	542 712,64	197 980,91
Accumulated loss of previous years	-722 924,28	-180 211 ,64
Profit (loss) in approval procedure	0,00	0,00
Borrowed funds	3 073 143,22	5 254 118,03
Provisions	304 439,79	243 372,67
Long-term liabilities	1 352,52	0,00
Short-term liabilities	2 767 350,91	5 010 745,36
Bank assistance and loans	0,00	0,00

STATEMENT OF PROFIT AND LOSS (abbreviated - in thous. CZK)	Status as of 31 December 2025
Material costs	8 358 125,33
Costs for repairs and services	1 118 811,09
Personnel costs	7 287 509,21
Taxes and fees	476,54
Other costs	137 071,91
Depreciation, assets sold, provisions, adjustments, small tangible fixed assets, small intangible fixed assets	746 157,93
Financial costs	702,04
Costs for uncontested claims on SR, TSU and SF resources	0
Total costs	17 648 854,05
Revenue from own performance and goods	17 162 306,36
Other revenues	535 000,69
Financial returns	162,45
Revenues from undisputed claims on SR, USC and SF resources	322 764,75
Total revenue	18 020 234,25
Pretax profit	371 380,20
Income tax	173 399,29
Additional income tax deductions	0,00
After tax profit	197 980,91

Overview of Expenses 2025 – University Hospital in Motol



Overview of Revenues 2025 University Hospital in Motol



Summary of economic indicators in thous. CZK

Indicator	2021	2022	2023	2024	2025	25/24 as a %
Revenues	14 230 289	14 404 007	16 409 281	17 876 938	18 020 234	100,80%
Costs	14 171 748	14 323 748	15 898 871	17 334 225	17 822 253	102,82%
Profit (loss)	58 541	80 259	510 410	542 713	197 981	36,48%
Unreimbursed loss from previous years	-1 313 593	-1 233 334	-722 924	-180 213	17 769	-9,86%
Tangible fixed assets	8 908 108	9 582 789	10 975 435	11 990 184	13 848 771	115,50%
Stock	263 747	301 837	380 775	562 529	520 718	92,57%
Short-term receivables	653 901	1 349 578	2 267 949	2 997 885	3 668 695	122,38%
Short-term liabilities	1 356 187	1 720 549	2 335 204	2 767 351	5 010 745	181,07%
Financial assets	1 818 392	1 382 638	1 634 202	1 595 597	3 411 206	213,79%
Remuneration fund	0	0	0	0	0	0,00%
Cultural and social needs fund	78 081	44 477	27 818	34 417	46 728	135,77%
Reserve fund	51 210	64 588	65 849	66 454	65 849	99,09%
Asset replacement fund	2 437 291	2 515 755	2 417 057	2 264 862	2 559 727	113,02%

As of 31 December 2025, Motol University Hospital reported a balanced financial position and closed the accounting period with a profit of CZK 197.98 million. Of this amount, the hospital's core activities generated a profit of CZK 132.61 million, while ancillary economic activities contributed a profit of CZK 65.36 million. The hospital paid corporate income tax amounting to CZK 173.39 million and income tax advances totalling CZK 86.33 million.

The financial result for 2025 continued to be affected by the circumstances arising from the case that occurred at the hospital in February 2025. This resulted in restrictions on subsidies, grants and donations, as well as the termination of certain commercial contracts. During the first half of the year, healthcare activity declined. In connection with the construction of the Motol Oncology Centre (MOC), radiotherapy facilities remained closed and the reconstruction of the Nuclear Medicine Centre continued. Despite these operational constraints, other departments increased the number of surgical procedures by 8% compared with the 2023 reference period, and the number of inpatient treatment days also increased.

On the cost side, the hospital continued reviewing contracts and public procurement procedures, with gradual adjustments being implemented in accordance with the principles of economy, efficiency and effectiveness (the "3E" principles). Efficient use of financial resources remains essential, as completion of the Motol Oncology Centre has become a strategic priority and requires partial financing from the hospital's own resources. Hospital management has therefore focused on maintaining operational

performance despite the significant impact of ongoing investment projects on day-to-day operations.

The financial result was influenced by rising personnel costs, the statutory increase in the minimum wage and, to some extent, inflationary pressures. These factors contributed to higher prices for materials, goods and services. Hospital finances were also significantly affected by increasing expenditures on highly specialised pharmaceuticals administered in specialised treatment centres and by reimbursements for medicines approved under Section 16 of the Public Health Insurance Act. The hospital sought to increase healthcare output in order to offset higher personnel costs and secure sufficient resources for future operations. The final settlement of healthcare services provided in 2025 is expected to be completed with health insurance companies in June 2026, based on the actual volume of services delivered. Lower reimbursement levels are anticipated, which may negatively affect the hospital's financial position.

The reimbursement decree for 2026 introduces further convergence of DRG payment rates and, for some healthcare providers, substantial reductions in reimbursement levels compared with both 2024 and 2025. For the newly merged Motol and Homolka University Hospital, the final reimbursement framework significantly reduces labour-related reimbursement rates across a number of DRG categories. Assuming an unchanged structure and volume of care compared with the 2024 reference year, reimbursements from health insurance companies are expected to remain virtually unchanged despite increasing personnel costs and the opening of new facilities. This represents a significant financial risk. Another challenge is the declining performance of the paediatric division, reflecting the continuing demographic downturn that has persisted since 2021. At the former Homolka Hospital, reimbursement income is expected to decline by almost CZK 300 million despite maintaining the same level of healthcare services.

Motol University Hospital remains a financially stable institution with no tax arrears and continues to meet all obligations within their due dates. However, liabilities increased as a result of extensive reconstruction projects. Cash flow continues to be affected by investment financing from the hospital's own resources and by a high volume of projects under construction, including additional works that increase project costs. At the end of the year, the hospital submitted an application for a loan from the Ministry of Finance, which would provide additional financial resources if required.

In the area of capital investment, the Simulation Centre was successfully completed in 2025. Reconstruction of the Long-Term Care Department continued, reducing patient capacity by approximately 50%. These projects are expected not only to improve the quality of patient care but also to reduce future expenditure on energy and maintenance. As all reconstruction works are being carried out during full hospital operation, maintaining healthcare performance remains challenging; however, any significant decline in service volumes would adversely affect cash flow.

Further projects financed under the National Recovery Plan continued, including the Motol Oncology Centre, which is funded through a combination of European Union resources and the hospital's own funds. Construction activities proceeded according

to approved schedules. These projects are expected to be completed in 2026 and will significantly influence both hospital operations and its financial position in the years ahead. Key priorities for 2026 include the development of information technology infrastructure and the renewal of medical equipment.

In September 2025, the Minister of Health announced that Motol University Hospital and Na Homolce Hospital would merge with effect from 1 January 2026. The merger was subsequently confirmed by the official Decision on the Merger of State-Contributory Organisations (Ref. No. MZDR 22882/2025-3/OPŘ). Under this decision, Na Homolce Hospital ceased to exist as a separate legal entity and all rights, obligations, assets and management responsibilities were transferred to Motol University Hospital as the successor organisation. The newly established institution operates under the name Motol and Homolka University Hospital.

The merger decision also included detailed implementation instructions and a timetable for integration. Preparatory work commenced immediately after the announcement and included the transfer of employees, assets and operational processes. Legal teams reviewed contractual arrangements and communicated organisational changes, while human resources departments managed employee transfers. Financial departments established conversion mechanisms for accounting and reporting purposes and harmonised processes across both organisations. Given the different accounting systems previously used by the two hospitals, accounting data consolidation will continue throughout 2026 to ensure consistent and unified financial reporting.

Following the merger, Motol and Homolka University Hospital has become the largest hospital in the Czech Republic, combining modern facilities, advanced technologies and highly qualified healthcare professionals across a comprehensive range of medical specialisations. The hospital's primary objective remains the provision of comprehensive, high-quality healthcare services in accordance with national accreditation standards while ensuring the successful completion and future operation of the Motol Oncology Centre.

INDEPENDENT AUDITOR'S REPORT

for the Founder of the State Contributory Organisation

Motol University Hospital

Qualified Opinion

We have audited the accompanying financial statements of Motol University Hospital (the “Organisation”), a state contributory organisation, prepared in accordance with Czech accounting regulations. The financial statements comprise the balance sheet as at 31 December 2025, the statement of profit and loss, the statement of changes in equity, the cash flow statement for the year then ended, and the notes to the financial statements, including a summary of significant accounting policies. Information about the Organisation is presented in the introductory section of the notes to the financial statements.

In our opinion, except for the possible effects of the matters described in the section *Basis for Qualified Opinion*, the financial statements give a true and fair view of the assets and liabilities of Motol University Hospital as at 31 December 2025, and of its expenses, revenues, financial result and cash flows for the year then ended, in accordance with Czech accounting regulations.

Basis for Qualified Opinion

As a result of ongoing criminal proceedings involving former statutory representatives of Motol University Hospital in connection with selected public procurement contracts and grant-funded projects financed from public resources, there is a risk that these matters may have an impact on the Organisation’s financial position and operations.

As of the date of this report, the proceedings have not been finally concluded and their ultimate outcome cannot be reliably estimated. Furthermore, it cannot be ruled out that, depending on the outcome of the ongoing proceedings or on any additional findings related to the activities of former management, further claims may arise in relation to public procurement contracts, grant-funded projects or other contractual arrangements entered into by the former management of the hospital.

It is possible that the outcome of these proceedings may have a significant impact in future periods, particularly with regard to the repayment of grants, the imposition of penalties, fines or other related liabilities. Due to this uncertainty, it is not possible as of the reporting date to reliably assess or quantify the potential impact of these matters on the Organisation’s financial statements.

Other Matter

The financial statements as at 31 December 2024 were not audited. The Organisation was not legally required to have its financial statements audited.

Responsibility of the Director for the Financial Statements

The Director of the Organisation is responsible for the preparation of financial statements that give a true and fair view in accordance with Czech accounting regulations and for such internal control as the Director determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Director is responsible for assessing the Organisation's ability to continue as a going concern and, where applicable, for disclosing matters relating to going concern and using the going concern basis of accounting unless the Director intends to liquidate the Organisation or cease its operations, or has no realistic alternative but to do so.

Auditor's Responsibility for the Audit of the Financial Statements

Our objective is to obtain reasonable assurance as to whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report containing our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with applicable auditing standards will always detect a material misstatement when it exists. Misstatements may arise from fraud or error and are considered material if they could reasonably be expected, individually or in aggregate, to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit conducted in accordance with the applicable regulations, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error; design and perform audit procedures responsive to those risks; and obtain sufficient and appropriate audit evidence to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal controls.
- Obtain an understanding of internal controls relevant to the audit in order to design audit procedures appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Organisation's internal control system.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Director in the notes to the financial statements.
- Conclude on the appropriateness of the Director's use of the going concern basis of accounting and, based on the audit evidence obtained, determine whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Organisation's ability to continue as a going concern. If we conclude

that such a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the notes to the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our report. However, future events or conditions may cause the Organisation to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the notes, and assess whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We are required to communicate with the Director of the Organisation regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control identified during the audit.

V Praze dne 21.05.2026

HzConsult s.r.o.

HzConsult s.r.o.
Evidenční č. oprávnění KA ČR 312
Kodaňská 1441/46
101 00 Praha 10 Vršovice



Miloš Havránek

Ing. Miloš Havránek
Evidenční č. oprávnění KA ČR 1211

HUMAN RESOURCE ACTIVITIES

In 2025 Motol University Hospital employed:

in converted figures:

6 111 employees, of which 4 856 medical staff

in natural persons:

6 974 employees, of which 5 645 medical staff

Structure of employees' professions

	2023	2024	2025	2023	2024	2025	INDEX 25/24	
	NP	NP	NP	AC	AC	AC	NP	AC
Total	6 494	6 719	6 974	5 712	5 887	6 111	1,04	1,04
PHYSICIANS	1 381	1 459	1 512	1 059	1 119	1 165	1,04	1,04
PHARMACISTS	46	58	64	41	52	58	1,10	1,12
NURSES	2 055	2 085	2 127	1 818	1 842	1 882	1,02	1,02
QUALIFIED MEDICAL STAFF	760	795	835	696	719	753	1,05	1,05
SPECIALIZED MEDICAL STAFF	303	312	321	243	252	258	1,03	1,02
SUPERVISED MEDICAL STAFF	699	698	726	669	672	699	1,04	1,04
OTHER QUALIFIED STAFF	67	61	60	47	40	40	0,98	1,00
TECHNICAL AND ECONOMIC STAFF	898	980	1 022	860	927	956	1,04	1,03
WORKERS	285	271	307	279	264	299	1,13	1,13

(NP) average number of natural persons, (AC) average converted number

Employees according to age and gender – status as at 31. 12. 2025

age	men	women	total	%
20	14	67	81	1,12
21-30	358	998	1 356	18,71
31-40	467	932	1 399	19,31
41-50	445	1 348	1 793	24,74
51-60	397	1 218	1 615	22,29
61	323	679	1 002	13,83
Total	2 004	5 242	7 246	100
%	27,66	72,34	100	

Employees according to education and gender – status as at 31. 12. 2025

education achieved	men	women	total	%
basic	160	184	344	4,75
vocational certificate	317	316	633	8,74
vocational secondary	34	10	44	0,61
completed secondary education	22	49	71	0,98
complete vocational secondary education	373	2 009	2 382	32,87
higher vocational	63	333	396	5,47
tertiary	1 059	2 317	3 376	46,59
of which - bachelors	131	707	838	
- masters	928	1 610	2 538	
Total	2 004	5 242	7 246	100,00

Length of employment as of 31. 12. 2025

duration	number	%
up to 5 years	3 114	42,98
up to 10 years	1 196	16,51
up to 15 years	716	9,88
up to 20 years	651	8,98
more than 20 years	1 559	21,65
total	7 246	100,00

Qualification structure – status as at 31. 12. 2025

Achieved education among nurses and midwives	Total	%	of which with specialization	%
Secondary medical	1 148	53,42	697	60,71
Further medical	264	12,28	210	79,54
Tertiary bachelor's	508	23,64	370	72,83
Tertiary master's	229	10,66	159	69,43
Total	2 149	100,00	1 436	66,82

- 1) **Healthcare professionals regulated under Act No. 95/2004 Coll.** (physicians, dentists and pharmacists) **totalled 1,594 employees.**
Of the total number of 1,530 physicians, **484 (31.64%) held only basic professional qualification, while 1,046 physicians (68.36%) held specialised professional qualification**, including specialist certification, subspecialty certification, licences issued by the Czech Medical Chamber, or professional authorisation granted by the Ministry of Health of the Czech Republic.

- 2) **Healthcare professionals regulated under Act No. 96/2004 Coll.** (non-medical healthcare professions) totalled **4,144** employees. This group included **2,149** registered nurses and midwives.

Human Resources and Remuneration Data for 2025

	Physicians	Pharmacists	Registered Nurses	Other Non-Medical Healthcare Professionals with Professional Qualification	Non-Medical Healthcare Professionals with Professional and Specialised Qualification	Non-Medical Healthcare Professionals Working under Professional Supervision or Direct Guidance	Administrative and Technical Staff	Manual Workers	Total
Total Payroll Expenses (CZK)	1 753 348 749	76 054 650	1 612 855 267	581 373 069	195 825 669	364 879 278	603 864 170	144 800 939	5 333 001 791
Average Number of Full-Time Equivalent Employees (FTE)	1 165,27	57,93	1 882,21	753,67	257,99	738,52	956,06	299,06	6 110,71
Average Monthly Salary (CZK)	125 389	109 406	71 408	64 282	63 254	41 172	52 635	40 349	72 728

Trends in average salary over the last 10 years

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
TOTAL	38 529	42 111	46 657	50 237	57 346	63 100	60 473	65 431	69 805	72 728
PHYSICIANS	71 753	76 316	81 758	85 284	92 394	101 533	101 931	108 959	121 166	125 390
NURSES	36 390	40 317	45 637	50 681	59 221	66 641	62 634	66 302	68 238	71 408



Annual report on the activities of Motol University Hospital in the area of providing information according to Act No. 106/1999 Coll., on free access to information for the year 2025

The data are provided in accordance with Section 18 of Act No. 106/1999 Coll., on free access to information.

The fee schedule is published on the website –

<https://www.fnmotol.cz/o-nas/informace-106/uhrady-zaposkytovani-informaci/>

The information provided is published on the website – <https://www.fnmotol.cz/o-nas/informace-106/zadostia-odpovedi-dle-zakona-c-106-1999-sb/>

A.1.	Total Number of Information Requests Submitted	46
A 2.	Number of Decisions Issued Rejecting Requests in Full / in Part	8/4
B.	Number of Appeals Filed Against Decisions	6
C.	Summary of Court Judgments Reviewing the Legality of Motol University Hospital's Decisions to Reject Information Requests, Including Related Costs	0 – No legal action was filed.
D.	List of Exclusive Licences Granted, Including Justification of Necessity	0
E.	Number of Complaints Submitted Pursuant to Section 16a of the Act on Free Access to Information, Including Reasons	2 – Complaint regarding the amount of the fee charged; complaint regarding a missing attachment. Both complaints were resolved through self-remedy procedures.
F.	Number of Charged Information Requests Pursuant to Section 17 of the Act on Free Access to Information	2

DONORS AND FOUNDATIONS

Donors and Foundations - donations over CZK 100 000

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Řízení letového provozu České republiky, státní podnik
Siemens Healthcare s.r.o.
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Nadační fond pro otorhinolaryngologii a chirurgii hlavy a krku
Nadační fond Uran
Nadační fond VAKOVAKO
Trnková Zdeňka

Motol University Hospital thanks all donors listed above for providing their financial donations or donations in kind last year to improve the conditions for caring for patients at our hospital. We also thank all other donors whose names could not be listed here for technical reasons, but are listed on our website.

WE CARE FOR
GENERATIONS!



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