



NIMH NATIONAL INSTITUTE OF MENTAL HEALTH

ANNUAL REPORT 2022

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ANNUAL REPORT 2022



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Basic Information Profile

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The National Institute of Mental Health is a modern research and clinically oriented mental health institution. The Institute is designed as a centre of basic, experimental and applied research with a focus on research into the neurobiological and psychosocial mechanisms associated with the onset and course of the most serious mental disorders and the subsequent development and testing of new diagnostic and therapeutic methods. Another important task is to provide analyses and expertise to the state administration in the field of mental health care organisation, including the ongoing mental health care reform. Through its activities, it contributes to the cultivation and development of the field not only in the professional field, but also in relation to the general public.

The clinical part of the Institute provides standard and highly specialised inpatient and outpatient psychiatric care. At the same time, as the Department of Psychiatry and Medical Psychology of the 3rd Medical Faculty of Charles University in Prague, it provides undergraduate and postgraduate education in both clinical fields (psychiatry, psychology) and neuroscience.

The Institute belongs to the directly managed organisations of the Ministry of Health of the Czech Republic and was established on 1 January 2015 by transforming the Psychiatric Centre Prague.



PhDr. Petr Winkler, Ph.D.
NIMH Director

Editorial

Dear all,

With great pleasure, humility, and pride, I reflect on the accomplishments of the National Institute of Mental Health (NIMH) in the year 2022. During this time, NIMH not only successfully improved its economic situation but also witnessed a simultaneous increase in scientific performance. Additionally, the institute swiftly prepared and implemented projects to support war refugees from Ukraine.

NIMH has embellished its outstanding scientific achievements with publications in some of the world's leading scientific journals. These publications span not only journals in the fields of psychiatry, psychology, and neuroscience but also extend to general medical journals. These achievements are the result of the long-term and systematic efforts of research teams, representing a significant milestone in translating scientific knowledge into practice. NIMH has consistently demonstrated its value and societal impact, whether through the introduction of new therapeutic methods, expert training, or the overall enhancement of mental health care systems.

Undoubtedly, the NIMH clinic stands as one of the finest psychiatric facilities in the country, receiving appreciation not only from patients but also from their families. Despite the new agenda that NIMH clinic has been dealing with, especially an establishment of a new child psychiatry department and the immediate initiation of outpatient services for Ukrainian war refugees in their native language, the NIMH clinic managed to maintain an extraordinary standard of care.

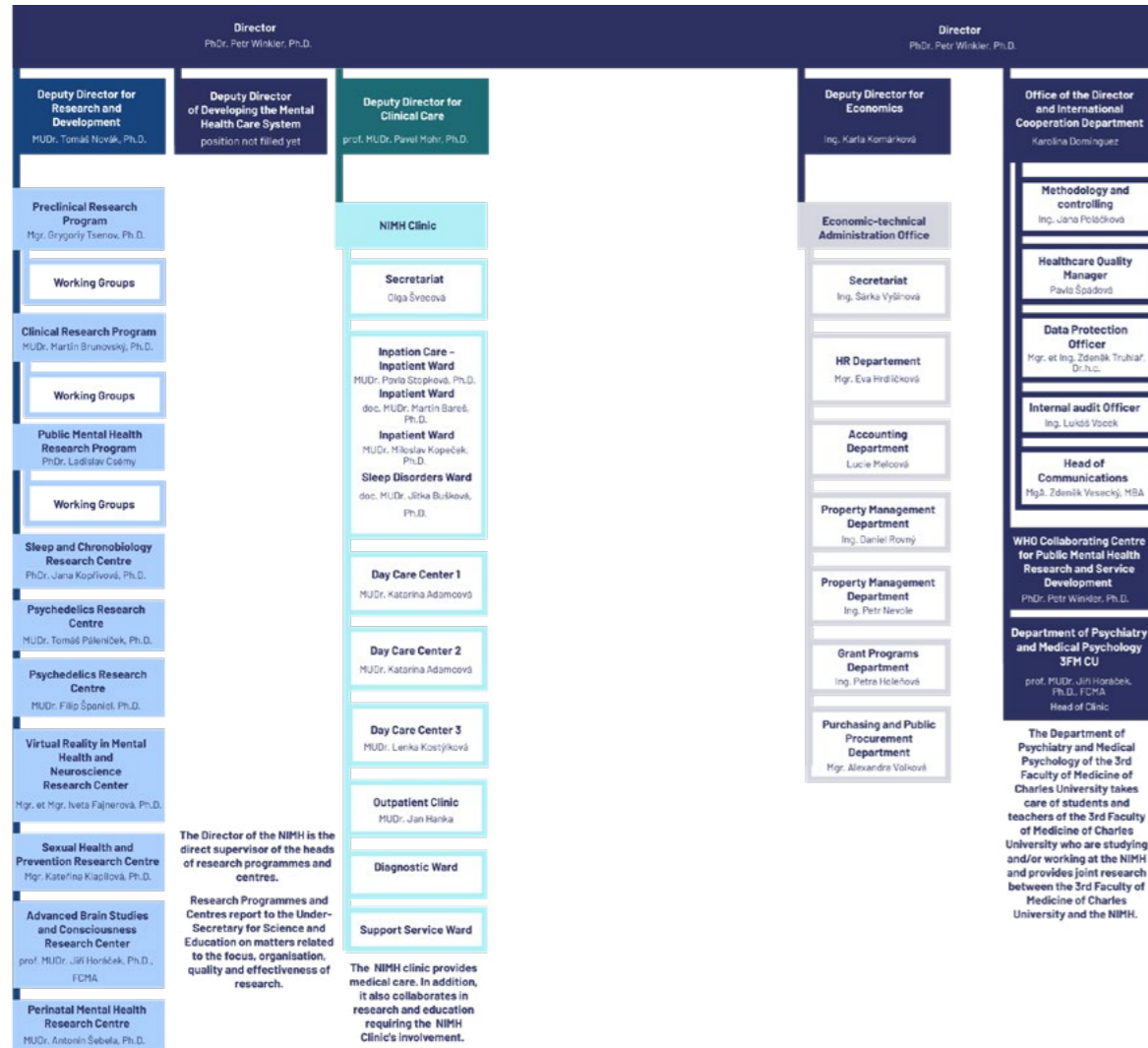
The Economic and Technical Administration Department at NIMH functions as the organizational mycelium, operating behind the scenes. Without its activity, the fruits of our work could not come to fruition. NIMH continues to make significant strides forward, constantly improving internal processes and the support provided to all employees.

I extend my sincere thanks to all NIMH employees for their tremendous commitment, perseverance, and dedication to the values that underlie our remarkable results in 2022. I also express gratitude to the Ministry of Health, as well as to national and international partners, and individuals who support us in our challenging yet meaningful endeavors.

With best wishes,

PhDr. Petr Winkler, Ph.D.
NIMH Director

Flow Chart



Management



PhDr. Petr Winkler, Ph.D.
Director



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Deputy Director for
Research
and Development



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Deputy Director for Clinical
Care



Ing. Karla Komárková
Deputy Director
for Economics

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Director

MUDr. Martin Brunovský, Ph.D.
Head of the Research Center

PhDr. Ladislav Csémy
Head of the Research Center

Mgr. et Mgr. Iveta Fajnerová, PhD.
Head of the Research Center

Ing. Petra Holeňová
Head of the Project Office

prof. MUDr. Jiří Horáček, Ph.D., FCMA
Head of the Research Center

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Deputy Director for Economics

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Head of the Research Center

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Deputy Director for Clinical Care

Ing. Petr Nevole
Head of the Building Management Department

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Deputy Director for Research and Development

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Head of the Research Center

Ing. Michal Prokeš
Head of the IT Department

MUDr. Jiří Renka
Head of the Independent Trade Union

MUDr. Antonín Šebela, Ph.D.
Head of the Research Center

MUDr. Filip Španiel, Ph.D.
Head of the Research Center

Pavla Špádová
Healthcare Quality Manager

Mgr. Grygoriy Tsenov, Ph.D.
Head of the Research Center

Martina Ungrmanová
Head Nurse

RNDr. Karel Valeš, Ph.D.
Head of the Basic Trade Union

Committee on Ethical Issues

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Deputy Director for Economics

Mgr. Veronika Kubáčová Langová
Doctoral Student

Mgr. Karolína Mladá
Researcher

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Deputy Director for Research and Development

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Head of the Research Center

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NIMH, Klecany

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National Institute of Mental Health
Executive Director of the Commercialisation Board

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Alexandr Borovička, DiS.
Memecoffee

Ing. Martin Diviš, MBA
Kooperativa

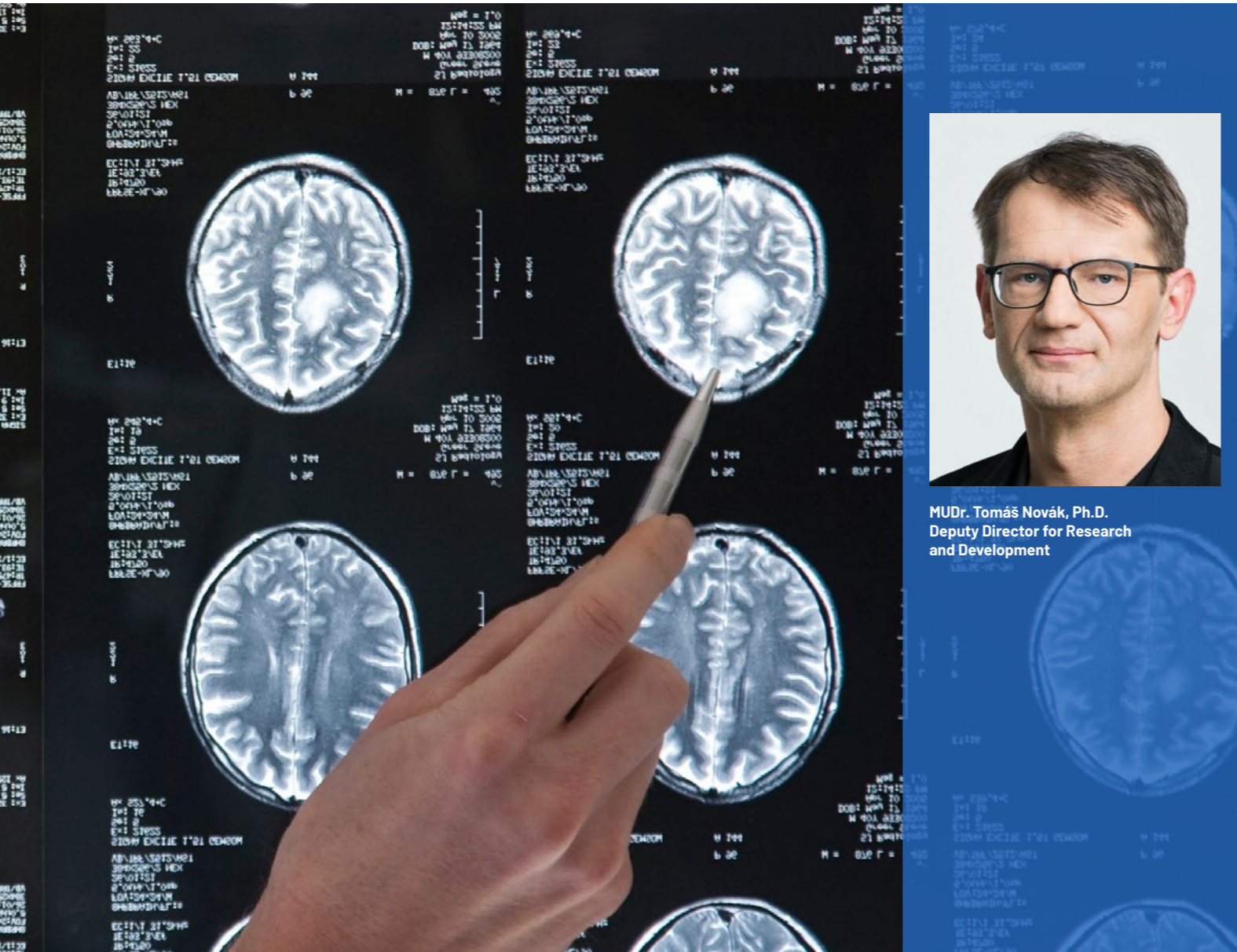
Prof. MUDr. Jiří Horáček, Ph.D., FCMA
National Institute of Mental Health

MUDr. Pavel Kubů
i & i Prague

Mgr. David Stíbal
IOCB TTO s.r.o.

MUDr. Filip Španiel, Ph.D.
National Institute of Mental Health

Doc. MUDr. Martin Votava, Ph.D.
PharmInvent



MUDr. Tomáš Novák, Ph.D.
Deputy Director for Research and Development

Research and Development

On January 1, 2022, the R&D department began functioning within a significantly revised organizational structure. Instead of eight research programs established at the inception of the Institute in 2015, it has been reorganized into three new research programs (RPs): Preclinical RP, Clinical RP, and Public Mental Health RP. These core units operate the different scientific methodologies—laboratory research, clinical studies, and epidemiology—essential for investigating mental health and disorders and administering relevant laboratories, equipment, and technologies. In parallel with establishing the RPs, seven research centers (Cs) have been formed. Some are continuations of the former programs, while others have evolved from successful working groups. Defined mainly by their distinctive research themes, these centers tackle topics that the Institute has excelled in nationally and internationally, such as sleep and chronobiology, psychedelics, first episodes of serious mental illness, sexual health, virtual reality, consciousness, and advanced studies of the brain; and perinatal mental health. There remains the potential for establishing new centers should future groups demonstrate excellent results and grant awards. The new research programs and centers will receive a more detailed introduction in subsequent pages. The allocation of institutional resources among respective RP&C is primarily impacted by the results - publications and success in grant calls. However, these resources cover only 25% of their operational costs; the remainder must be sourced through competitive grants (targeted support), which implies considerable uncertainty for the research teams. Despite these challenges, the NIMH excels in research and innovation within psychiatry, psychology, public mental health, neuroscience, and psychopharmacology. It continues to sustain high standards and remains attractive for international collaboration.

Preclinical Research Program (RP1)

HEAD:

Mgr. Grygoriy Tsenov, Ph.D.

PROFILE:

The Preclinical Research Program focuses on strengthening translational and application-oriented research at the preclinical level. The character and goal of these scientific projects focuses on deepening the cooperation between experimentally and clinically focused directions of research. The research program, by its character and emphasis on the transfer of science and research results into practice, also contributes to making it easier to ensure the long-term sustainability of NIMH and its further funding.

For the development of NIMH as a scientific-medical center, it appears to be the key strengthening of the translational approach. The approach to solving specific scientific projects is based on the interconnectedness of the methodologies of bioanalytical chemistry, animal modeling, molecular biology and imaging methods. The study of CNS disorders and the effect of drugs on them shows significant specificities compared to other organ systems. Symptoms of neuropsychiatric diseases typically appear only in patients. However, their neurobiological substrate or analogous symptoms also appear among animals. This enables the use and validation of animal models, either with induced neurobiological changes or with an altered genetic background (GMO), which enable exact sophisticated and often invasive approaches, thereby significantly enriching the methodological potential compared to the relatively limited possibilities of studying neurobiological changes in clinical practice.

An experimental approach in this area requires intensive contact with clinical practice and a thorough insight into the challenges facing contemporary biological psychiatry. The concept of the preclinical research program is based on a translational approach in close personnel and project interaction with other NIMH structures.

WORKING GROUPS:

- Experimental Neurobiology
- Experimental Psychopharmacology
- Preparation of new medicines
- Schizophrenia Models for Advancing Research and Treatment (SMART)
- Management of NIMH laboratories and neurochemical analysis

KEY OUTCOMES IN 2022:

- Radomir Juza, Iveta Vojtechova, Kristyna Stefkova-Mazochova, Wim Dehaen, Tomas Petrsek, Lukas Prchal, Tereza Kobrlova, Jiri Janousek, Premysl Vicek, Eva Mezeiova, Daniel Svozil, Jana Zdarova Karasova, Jaroslav Pejchal, Holger Stark, Grzegorz Satala, Andrzej J Bojarski, Monika Kubacka, Szczepan Mogilski, Alena Randakova, Kamil Musilek, Ondrej Soukup, Jan Korabecny. Novel D2/5-HT receptor modulators related to cariprazine with potential implication to schizophrenia treatment. *Eur J Med Chem*, 2022;232:114193.
- Viera Kútina, Valerie Brid O'Leary, Cyril Hoschl, Saak V Ovsepian. Cerebellar demyelination and neurodegeneration associated with mTORC1 hyperactivity may contribute to the developmental onset of autism-like neurobehavioral phenotype in a rat model. *Autism Res.*, 2022;15(5):791-805.
- Petr Fábera, Libor Uttl, Hana Kubová, Grygoriy Tsenov, Pavel Mareš. Adenosine Kinase Isoforms in the Developing Rat Hippocampus after LiCl/Pilocarpine Status Epilepticus. *Int J Mol Sci.*, 2022;23(5):2510.
- Michal Židó, David Kačer, Karel Valeš, Zuzana Svobodová, Denisa Zimová, Ivana Štětárová. Metabolomics of Cerebrospinal Fluid in Multiple Sclerosis Compared With Healthy Controls. *Front Neurol.*, 2022;13:874121.

Clinical Research Program (RP2)

HEAD:

MUDr. Martin Brunovský, Ph.D.

PROFILE:

The main aim of the program is to conduct clinically-oriented research into the neurobiological basis of mood, anxiety, psychotic and cognitive disorders. It uses a comprehensive integration of clinical data with the results of neuropsychological, electrophysiological, and brain imaging studies to elucidate the nature of mental illnesses and the associated more precise targeting of treatments. The research program represents a state-of-the-art facility for investigating the dynamics of complex brain processes under normal and pathological conditions and changes induced by various therapeutic modalities.

The department represents a key base for the application of a wide range of electrophysiological and neuroimaging techniques (high-density EEG, MRI/fMRI) to study different brain processes (neuronal oscillations, changes in brain perfusion, sources of electromagnetic activity, functional and effective connectivity) and their disturbance in neuropsychiatric disorders, with the aim of developing early diagnostic indicators and predictors of therapeutic interventions. The clinical program also investigates cognitive function, particularly in neuropsychiatric disorders (schizophrenia, bipolar disorder, OCD, etc.), with an emphasis on the development of new diagnostic clusters of cognitive deficits. By combining imaging, stimulation and behavioral methods, the clinical research program contributes to the detection, prevention and remediation of cognitive deficits as a risk factor for functional impairment in psychotic disorders, to the identification of biomarkers of major mental illnesses (schizophrenia, depression, bipolar affective disorder, etc.) and to the identification and evaluation of predictors of different antidepressant and antipsychotic therapeutic approaches.

The research program furthermore provides support in the field of neurophysiological methods, MRI examinations, and analyses to projects of other research programs and centers of NIMH and also focuses on the use of modern methods of non-invasive brain stimulation (NIBS) - mainly repetitive transcranial magnetic stimulation (rTMS) and transcranial electrical stimulation (TES) - in brain research and treatment of mental disorders. Ongoing projects are evaluating the effectiveness of these methods in the treatment of depression, post-covid syndrome and some symptoms of psychotic disorders.

WORKING GROUPS:

- Neurocognition
- Electrophysiological therapeutic predictors
- Applied Technology in Neuroscience
- Development of psychological methods for research and clinical practice
- Non-Invasive Brain Stimulation
- Advanced Magnetic Resonance Techniques

KEY OUTCOMES IN 2022:

- RODRIGUEZ, M., KNIŽKOVÁ, K., KEŘKOVÁ, B., SIROŇOVÁ, A., ŠUSTOVÁ, P., JONÁŠ, J., ŠPANIEL, F. The relationships between cognitive reserve, cognitive functioning and quality of life in first-episode schizophrenia spectrum disorders. *Psychiatry Research*. 2022, 310,(Article Number: 114479), 1-9.
- KLÍROVÁ, M., LASKOV, O., RENKA, J., BRUNOVSKÝ, M., NOVÁK, T. An rTMS-induced seizure during low frequency repetitive transcranial magnetic stimulation with a double-cone coil for spasticity: A case report. *Brain Stimulation*. 2022, 15(5), 1120-1121.
- POLÁK, J., SEDLÁČKOVÁ, K., JANOVCOVÁ, M., PELEŠKOVÁ, Š., FLEGR, J., VOBRUBOVÁ, B., FRYNTA, D., LANDOVÁ, E. Measuring fear evoked by the scariest animal: Czech versions of the Spider Questionnaire and Spider Phobia Beliefs Questionnaire. *BMC Psychiatry*. 2022, 22(1), „Article Number: 18“.
- BARTOŠ, A., WEINEROVÁ, J., DIONDET, S., VALEŠ, K. Effect of human probiotics on memory, psychological and biological measures in elderly: A study protocol of bi-center, double-blind, randomized, placebo-controlled clinical trial (Clever-Age Biota). *Frontiers in Aging Neuroscience*. 2022, 14,(Article Number: 996234*), 1-12.

Public Mental Health Research Program (RP3)

HEAD:

PhDr. Ladislav Csémy

PROFILE:

The Public Mental Health Research Program is focused on a wide range of topics; psychiatric epidemiology, mental health policy, care services research, mental health economics, stigma and discrimination, suicide prevention, and the issue of addictive behavior. The projects of the department of Public Mental Health are research and implementation-oriented. They focus on the implementation of mental health care reform and the development of the mental health care system in the Czech Republic and abroad. The department of Public Mental Health works closely with the World Health Organization Collaborating Center for Public Mental Health Research and Service Development.

WORKING GROUPS:

- **WG Psychiatric Epidemiology** – Our research addresses fundamental topics related to psychiatric epidemiology, such as monitoring the prevalence and incidence of mental illness, investigating factors associated with mental illness, and investigating the health and socioeconomic consequences associated with the presence of mental illness.
- **WG Research on Mental Health Care Services** – The goal of the working group is evidence-based development of care for patients with mental illnesses supported through high quality research and economic evaluations. One the main aims of our research is to provide evidence for policy recommendations to aid informed decision-making about the psychiatric care system.
- **WG Stigma Prevention and Research** – The working group deals with research on the stigmatization of people with mental illness. In addition to researching attitudes and experiences with stigmatization and discrimination, its activities also include the implementation and evaluation of antistigma activities. We carried out a nationwide project Destigmatization, which was part of the reform of psychiatric care in the Czech Republic.
- **WG Suicide Prevention and Research** – The working group is researching suicidal behaviour in the population. The goal of the research is to prevent suicide by identifying groups at high risk of committing suicide and evaluating suicide prevention programs. We also analyze trends in suicide rates in relation to economic, social, and environmental factors.

- **WG Research on Mental Health in Children and Adolescents** – The Child and Adolescent Mental Health Research Working Group focuses primarily on preventing and promoting mental well-being through implementation science. The main research goals include: understanding risk and resilience in childhood and adolescence, developing strategies for mental well-being, and evaluating the effectiveness of interventions to promote child and adolescent mental health.
- **WG Addiction Studies** – The research focuses on monitoring the prevalence and trends in health risk behaviour of the Czech population, with a focus on substance use. The main objective is to analyse the context and correlates of addictive behaviours and addictive disorders, with regard to different demographic, social, and socio-spatially defined variables.

KEY OUTCOMES IN 2022:

- Formánek, T., Krupchanka, D., Mladá, K., Winkler, P., & Jones, P. B. (2022). Mortality and life-years lost following subsequent physical comorbidity in people with pre-existing substance use disorders: a national registry-based retrospective cohort study of hospitalised individuals in Czechia. *The Lancet Psychiatry*, 9(12), 957-968.
- Thornicroft, G., Sunkel, C., Aliev, A. A., Baker, S., Brohan, E., El Chamay, R... & Winkler, P. (2022). The Lancet Commission on ending stigma and discrimination in mental health. *The Lancet*, 400(10361), 1438-1480.
- Schomerus, G., Leonhard, A., Manthey, J., Morris, J., Neufeld, M., Kilian, C...Winkler, P. & Corrigan, P. W. (2022). The stigma of alcohol-related liver disease and its impact on healthcare. *Journal of Hepatology*, 77(2), 516-524.
- Kázmér, L., Brabec, M. (2022): The geographical epidemiology of smoking-related premature mortality: a registry-based small-area analysis of the Czech death statistics, *Spatial and Spatio-temporal Epidemiology*(41), 100501.
- In addition to articles published in scientific journals, we managed to launch projects in cooperation with UNICEF and WHO focused on psychosocial support for people affected by the war in Ukraine. Furthermore, we conducted a large, representative epidemiological survey on the prevalence of mental illness in the country. In 2022 we issued a specific publication *The Standards and Recommendations for Surveying Social Status, Discrimination and Violence against Non-Heterosexual and Gender Diverse Persons*. As a suicide prevention activity we have launched the website www.sebevrazdy.cz, which, in addition to providing verified information, also provides the opportunity to chat with crisis interventionists.

Sleep and Chronobiology Research Center (C1)

HEAD:

PhDr. Jana Kopřivová, Ph.D

PROFILE:

The Sleep and Chronobiology Research Center focuses on the comprehensive investigation of regulatory systems (i.e. circadian rhythms, sleep/wake, and arousal) which represent one of the key domains in neuropsychiatric research. Beyond the understanding of underlying mechanisms and functions, the primary research objective is to enhance the objective diagnosis and treatment of patients with sleep and circadian disorders. In pursuit of this goal, the Center conducts animal and human research focused on the physiology of sleep, wakefulness and circadian rhythms, their pathophysiology in neuropsychiatric disorders and corresponding animal models, as well as research in the development and testing of new interventions. The Center applies a wide range of methods and addresses the phenomena at the molecular, cellular, biochemical, electrophysiological and behavioural levels. The data obtained are processed using advanced mathematical approaches to derive meaningful insights. The Centre also provides education for undergraduate and postgraduate students, courses for health professionals, lectures and outreach activities for the general public.

The research activities are divided into five different areas, each of which is covered by a specific research group. These groups work closely together and complement each other, allowing a comprehensive approach to complex issues.

RESEARCH GROUPS:

- **Sleep and Wakefulness Disorders** – This research group focuses mainly on parasomnias and hypersomnias. It focuses on the pathophysiological mechanisms of NREM parasomnias and the factors involved in their persistence into adulthood. It also researches electrophysiological correlates of parasomnias. In the field of hypersomnias, it focuses on the differential diagnosis of excessive daytime sleepiness, especially central hypersomnias. The group is researching clinical, immunological and genetic factors involved in the development of hypersomnias as well as psychopathological mechanisms that may influence increased daytime sleepiness.
- **Quantitative Electrophysiology of Sleep and Wakefulness** – The research group focuses primarily on the quantitative analysis of electrical signals registered during sleep. The current focus is on the consolidation of different types of memory during sleep and

the possibility of influencing it. In particular, the group focuses on auditory closed-loop stimulation during sleep, which requires the precise timing of acoustic stimuli based on real-time monitoring the electrical signal of the sleeping brain. In the field of clinical research, the group focuses mainly on the evaluation of sleep microstructure in insomnia, neuropsychiatric diseases and sleep during healthy and pathological ageing.

- **Circadian Physiology and Chronotherapy group** – The research group pursues three programme objectives. Within clinical research, it is dedicated to (1) the diagnosis of the circadian system in patients with neuropsychiatric diseases and sleep-wake disorders. Furthermore, it aims at (2) the development of basic chronobiological research in human subjects (e.g., focusing on metabolic and cardiovascular functions in extreme chronotypes, genotyping, effects of light of defined wavelength, effects of sleep deprivation in light and darkness, etc.) and it also focuses on (3) basic research on the principles of functioning and adaptation of the mammalian circadian system (especially on factors influencing the development, function and regulation of the circadian system).
- **Sleep, Chronobiology and Behaviour in Animal Models** – The research group focuses on animal models of psychiatric and neurodevelopmental disorders, such as Alzheimer's disease, autism and schizophrenia, and studies them in terms of chronobiology, social behaviour, cognition and emotionality, as well as pathological changes in the brain. The ultimate goal is to gain a deeper understanding of the pathological mechanisms of these diseases and to find new therapeutic approaches.
- **Neurobiology of Sleep, Memory and Cognition** – The research group is concerned with the processes of organizing information, representations and memories in the mind and studying them during wakefulness and sleep under normal physiological conditions, in pathological brain states in humans and in animal models. In preclinical experiments, it uses recordings of the electrical activity of populations of hippocampal and neocortical neurons in laboratory rats in vivo (during various cognitive tasks, social interactions, sleep, etc.) and studies how the activity of different neurons is organized to make different aspects of experience form an integrated representation of experience. The group relies on theoretical concepts, develops and tests them with its own experimental data.

Sleep and Chronobiology Research Center (C1)

KEY OUTCOMES IN 2022:

- Bušková J, Novák T, Miletinová E, Králová R, Košťálková J, Kliková M, Veldová K. Self-reported symptoms and objective measures in idiopathic hypersomnia and hypersomnia associated with psychiatric disorders: a prospective cross-sectional study. *J Clin Sleep Med.* 2022 Mar 1;18(3):713-720.
- Juza R, Vojtechova I, Stefkova-Mazochova K, Dehaen W, Petrusek T, Prchal L, Koblrova T, Janousek J, Vlcek P, Mezeiova E, Svozil D, Karasova JZ, Pejchal J, Stark H, Satala G, Bojarski AJ, Kubacka M, Mogilski S, Randakova A, Musilek K, Soukup O, Korabecny J. Novel D2/5-HT receptor modulators related to cariprazine with potential implication to schizophrenia treatment. *Eur J Med Chem.* 2022 Mar 15;232:114193.
- Moravcová S, Spišská V, Pačesová D, Hrubcová L, Kubišková A, Novotný J, Bendová Z. Circadian control of kynurenine pathway enzymes in the rat pineal gland, liver, and heart and tissue- and enzyme-specific responses to lipopolysaccharide. *Arch Biochem Biophys.* 2022 Jun 15;722:109213.

Psychedelics Research Center (C2)

HEAD:

MUDr. Tomáš Páleníček, Ph.D.

PROFILE:

The center is primarily devoted to research into the neurobiology of the effect and therapeutic use of psychedelics and other psychoactive substances. The research activities bring together the preclinical and clinical team in one unit with the aim of covering the issue of psychedelics from the molecular level, analytical methods, experiments with tissue cultures, behavioral experiments on animals, neuroimaging approaches to classic clinical evaluations with a clear therapeutic focus. In preclinical experiments, great emphasis is placed on the translational validity of the data.

In addition to the study of psychedelics as such, we also study the phenomenon of new psychoactive substances (NPS) and cannabinoids. In preclinical experiments, the topics of neuroplasticity as a basis for the antidepressant effects of psychedelics, electrophysiological correlates of the effects of psychedelics and studies of acute effects and toxicity of NPS are currently being addressed. In clinical experiments, we are completing a clinical trial studying the effects and their neurobiology after the administration of psilocybin in healthy volunteers, and we are currently conducting a clinical trial comparing the antidepressant effect of psilocybin with ketamine in patients with treatment-resistant depression. The center's clinical staff is also actively involved in solving contracted research with psychedelics.

The research team is closely connected to other NIMH research centers and programs, especially the Clinical Research Program, the Center for Advanced Studies of the Brain and Consciousness, and the Preclinical Research Program. The center closely cooperates with the Laboratory of Forensic Analysis of Biologically Active Substances (BAFA) at University of Chemical Technology and has also established cooperation with a number of foreign workplaces, e.g. University of Maastricht, Neurobiology Research Unit in Copenhagen, University of Lisbon, in Portugal and a number of other partners. In addition to classic grant projects, the center's research activities are also supported through the psychedelic research foundation PSYRES.

RESEARCH GROUPS:

- Neurobiology of psychedelics in translational research
- Therapeutic use of psychedelics
- Effects and mechanisms of action and toxicity of new psychoactive substances (NPS)

KEY OUTCOMES IN 2022:

- GOODWIN, GM., AARONSON, ST., ALVAREZ, O., ARDEN, PC., BAKER, A., BENNETT, JC., BIRD, C., BLOM, RE., BRENNAN, Ch., BRUSCH, D., BURKE, L., CAMPBELL-COKER, K., CARHART-HARRIS, R., CATTELL, J., DANIEL, A., DEBATTISTA, Ch., DUNLOP, BW., EISEN, K., FEIFEL, D., FORBES, M., PÁLENÍČEK, T. Single-Dose Psilocybin for a Treatment-Resistant Episode of Major Depression. *New England Journal of Medicine.* 2022, 387(18), 1637-1648.
- ŠTEFKOVÁ-MAZUCHOVÁ, K., DANDA, H., DEHAEN, W., JURÁSEK, B., ŠÍCHOVÁ, K., PINTEROVÁ-LECA, N., MAZUCH, V., HRČKA KRAUSOVÁ, B., KYŠILOV, B., SMEJKALOVÁ, T., VYKLICKÝ, L., KOHOUT, M., HÁJKOVÁ, K., SVOZIL, D., HORSLEY, RR., KUCHAR, M., PÁLENÍČEK, T. Pharmacokinetic, pharmacodynamic, and behavioural studies of deschloroketamine (DCK) in Wistar rats. *British Journal of Pharmacology.* 2022, 179(1), 65-83.
- VIKTORIN, V., GRISOVA-BULANOVA, I., VOICIKAS, A., DOJČÁNOVÁ, D., ZACH, P., BRAVERMANOVÁ, A., ANDRASHKO, V., TYLŠ, F., KORČÁK, J., VIKTORINOVÁ, M., KOUDELKA, V., HÁJKOVÁ, K., KUCHAR, M., HORÁČEK, J., BRUNOVSKÝ, M., PÁLENÍČEK, T. Psilocybin-Mediated Attenuation of Gamma Band Auditory Steady-State Responses (ASSR) Is Driven by the Intensity of Cognitive and Emotional Domains of Psychedelic Experience. *Journal of Personalized Medicine.* 2022, 12(6), 1004.

Center for Research on the First Episodes of Serious Mental Illness (C3)

HEAD:

MUDr. Filip Španiel, Ph.D.

PROFILE:

The activities of the center are built upon three pillars: fundamental and applied research, the development of digital platforms for relapse prevention in the most serious mental disorders, and the development of clinical applications as part of a comprehensive program of care in the early stages of the most serious mental disorders.

(A) Fundamental and applied research is conducted based on large-scale data within a unique multimodal prospective database and biobank for the first episodes of psychotic disorders (ESO), which the center is constructing. In addition to clinically oriented neurobiological research, we focus on developing an information system for comprehensive personalized care in psychoses, integrating clinical data with results from neuroimaging (MRI), biochemical, immunological, proteomic, neurocognitive, and genetic data derived from ESO. This digital platform and extensive normative database serve to predict the course of psychotic disorders in their earliest stages and form the blueprint for an expert data-driven decision support system for psychiatrists (CAD) in the field of psychiatry. The development of the CAD system is the main output of this branch of the center's activities. Another goal is to subtype individual neurobiological entities within an arbitrary nosological concept of schizophrenia, again based on prospective multimodal ESO data. The intention is to lay the groundwork for stratified treatment of psychotic disorders.

(B) These activities are followed by the second pillar, focused on the development of digital platforms for relapse prevention in the most serious mental disorders. We develop and implement, also on an international level, (i) the mHealth relapse prevention program for schizophrenia (ITAREPS), (ii) within applied research, we develop the mHealth program collecting actigraphic data in bipolar affective disorder (AKTIBIPO system), (iii) another aspect involves the development of the PEBDI digital system (dynamic pupillometer with wireless data centralization) as a platform for early relapse detection in schizophrenia and mood disorders.

Both activities (A) and (B) converge into (C) the development of clinical applications as part of a comprehensive program of care in the early stages of the most serious mental disorders, particularly schizophrenia and bipolar affective disorders.

KEY OUTCOMES IN 2022:

- In 2022, our center authored two publications in *Molecular Psychiatry* (the 6th most cited psychiatric journal), and further publications in *JAMA Psychiatry* (4th place) and *Biological Psychiatry* (12th place).
- The digital relapse prevention project for schizophrenia (ITAREPS) will be pilot-implemented within the public health-care system in the Czech Republic (launch project with OZP).
- Our center has become a collaborative partner within Horizon Europe (HORIZON-HLTH-2022-STAYHLTH-01-04).

Center for Virtual Reality Research in Mental Health and Neuroscience (C4)

HEAD:

Mgr. et Mgr. Iveta Fajnerová, Ph.D.

PROFILE:

The main goal of the Centre for Virtual Reality Research in Mental Health and Neuroscience at NIMH (C4) is to apply virtual reality (VR) technology in complex mental health care, education, basic and applied research in psychiatry and neuroscience. The main mission of the Centre is mental health care and the related development and testing of innovative VR methods that could be applied in the diagnosis and treatment of neuropsychiatric diseases (especially anxiety disorders, obsessive-compulsive disorder, etc.) and the rehabilitation of cognitive deficits (especially in neurodegenerative diseases and schizophrenia). Other activities of the Centre include education in the field of mental health and mental disorders using VR methods, which includes not only education of health professionals (psychologists and psychiatrists) in cooperation with the 3rd Medical Faculty of Charles University, but also education of the professional and general public. The research activities of the Centre are focused on the use of VR technology in basic and applied neuroscience and psychological research, especially in the field of understanding cognitive processes (spatial orientation, memory) and related brain activity or manifestations of mental illness. Another part of the applied clinical research focuses on the development, validation, certification and evaluation of the effectiveness of innovative therapeutic procedures using VR technology (e.g., exposure therapy or VR breathing exercises and relaxation training). Given the interdisciplinary focus, our team consists of psychologists, psychiatrists, neuroscientists and, of course, VR developers and programmers. The center's team works closely with other research organizations and universities in the Czech Republic and abroad, as well as with the private sector.

RESEARCH GROUPS:

- VR clinic - the clinical section is responsible for developing VR therapeutic tools and their application in clinical research and practice.
- VR laboratory - the research section is responsible for research in neuroscience and neuropsychology using VR technology, especially in testing cognitive functions and related brain activities.
- VR classroom - the teaching section is responsible for developing and testing VR methods intended for teaching psychiatry under the teaching workplace of the Third Faculty of Medi-

KEY OUTCOMES IN 2022:

- Fajnerová, I., Francová, A. and Programmer Darmová, B. (2022) VR OCD House Virtual house for exposure therapy of obsessive-compulsive disorder
- Skalníková, P., Juričková, V., Plechatá, A., Fajnerová, I., & Nekovářová, T. (2022). Methodological approaches in the research of emotional memory. *Československá Psychologie*, 66(4), 349-364.
- Grant project AZV NU23-04-00402 "Exposure therapy in virtual reality in obsessive-compulsive disorder: a randomized clinical trial" - principal investigator Dr. Stopková
- Grygarová D, Adámek P, Juričková V, Horáček J, Bakštejn E, Fajnerová I, Kesner L. Impact of a Long Lockdown on Mental Health and the Role of Media Use: Web-Based Survey Study. *JMIR Ment Health*. 2022 Jun 28;9(6):e36050.

Center for Sexual Health and Intervention (C5)

HEAD:

Mgr. Kateřina Klapilová, Ph.D.

PROFILE:

The general goal of the center is to conduct top multidisciplinary research in the field of sexology and introduce knowledge and procedures based on scientific findings into clinical and forensic practice. The center has two divisions, one for basic research in sexology and the other for applied research and clinical intervention testing. The Division of Basic Research includes groups focused on basic and preclinical research in sexual neuroscience, psychophysiology, and cognitive science to elucidate the physiological, brain, and cognitive mechanisms of sexual arousal, desire, orgasm, partner and paraphilic preferences, sexual dysfunction, and sexuality in psychiatric patients. Another important part of our research are repeated representative surveys of the sexual health and behaviour of the Czech population, sexual minorities and marginalised groups, which provide reference data for the Czech Republic in the field of sexology. The Applied Division focuses on the development, standardization and implementation of diagnostic and risk-assessment tools and on testing the effectiveness of treatments and interventions in the field of sexual health and prevention of sexual offending.

RESEARCH GROUPS:

Basic research

- Preclinical research and neuropsychophysiology of sexual function
- Epidemiology and sexual health
- Cognition and communication in intimate relationships
- Etiology of sexual preference and behavior

Applied Research

- Testing the impact of treatment and interventions
- Research in sexology-related diagnostics and risk-assessment

KEY OUTCOMES IN 2022:

- Ménard, S., Gelez, H., Coria-Avila, G. A., & Pfaus, J. G. (2022). Sexual experience increases oxytocin, but not vasopressin, receptor densities in the medial preoptic area, ventromedial hypothalamus, and central amygdala of male rats. *Psychoneuroendocrinology*, 146, 105900.
- Pfaus, J. G., & Tsarski, K. (2022). A Case of Female Orgasm Without Genital Stimulation. *Sexual Medicine*, 10(2), 100496-100496.
- Quintana, G. R., Mac Cionnaith, C. E., & Pfaus, J. G. (2022). Behavioral, neural, and molecular mechanisms of conditioned mate preference: the role of opioids and first experiences of sexual reward. *International Journal of Molecular Sciences*, 23(16), 8928.

Center for Advanced Studies of Brain and Consciousness (C6)

HEAD:

prof. MUDr. Jiří Horáček, Ph.D., FCMA

PROFILE:

We aim to contribute to understanding biological, psychological, and social mechanisms of the origins and development of mental disorders and selected aspects of social psychopathology.

Advanced neuroimaging and psychological and behavioral data analyses are at the core of our efforts. The research activities are interlinked by focusing on the relationship between conscious experience and processes in the brain, including their dynamics evaluated in EEG and fMRI time series. This research area also includes the evaluation of the relationship between pharmacologically induced changes in the psyche and their neurobiological and clinical correlates. Related research activities focus on developing new models of mental disorders and their translational testing, the role of visual saliency in schizophrenia, and an investigation of the basis of decision-making processes and brain network coordination and their causal interactions.

Further research areas include time perception and its relationship to the pathophysiology of mental disorders, psychological and neural mechanisms of perception of images and aesthetic experience, and mechanisms through which media news impacts mental health.

RESEARCH GROUPS:

- Neurophysiology of cognitive functions
- The research group focuses on the complex study of mental functions (especially cognition) and their biological substrate. Using modern imaging methods (fMRI, EEG), we study the neurobiological correlates of cognitive function, but we also focus on cognition and its changes in individual development (ontogeny) and in a comparative perspective between different species.
- We focus mainly on autobiographical memory, theory of mind and time perception. All these cognitive domains are closely linked not only to the representation of the world around us, but also to the representation of the self.

KEY OUTCOMES IN 2022:

- A launched project Profiling NMDA receptor in schizophrenia and predicting clinical trajectories from rsEEG using dynamic causal modeling, řešitel Mgr. Nikola Jajcay, Ph.D. Podpořeno Evropskou komisí, výzvou HORIZON-WIDERA-2022-TAL-ENTS-02 (investigator Mgr. Nikola Jajcay, Ph.D. Supported by the European Commission, call HORIZON-WIDERA-2022-TAL-ENTS-02)
- A completed AZV project Clinical and neurobiological predictors of response to ketamine as a basis for personalized depression therapy (NV18-04-00260) with an excellent evaluation
- ADAMEK P, LANGOVA V, HORACEK J. Early-stage visual perception impairment in schizophrenia, bottom-up and back again. *NPJ Schizophr* 8. 2022

Perinatal Mental Health Center (C7)

HEAD:

MUDr. Antonín Šebela, Ph.D.

PROFILE:

The Center for Perinatal Mental Health focuses on applied clinical research in the area of psychosocial health and well-being in women during the perinatal period and throughout maternity and parental leave. The main goal of the Center's activities is the comprehensive development and testing of innovative approaches in the prevention and treatment of perinatal mental disorders, and their subsequent implementation in practice. The Center for Perinatal Mental Health is actively involved in the clinical care of NIMH in outpatient and inpatient care for pregnant and postpartum women.

RESEARCH GROUPS:

- Screening for the risk of developing perinatal mental disorders (pregnancy, postpartum period)
- Development and testing of a step-by-step system of mental health care for pregnant and postpartum women
- Research on the impact of psychiatric drug use in pregnancy on early postnatal adaptation and child development

KEY OUTCOMES IN 2022:

- Horáková A, Nosková E, Švancer P, Marciánová V, Koliba P, Šebela A. Accuracy of the Edinburgh Postnatal Depression Scale in screening for major depressive disorder and other psychiatric disorders in women towards the end of their puerperium. *Ceska Gynekol.* 2022;87(1):19-26.
- Horáková, A., Němcová, H., Mohr, P., & Šebela, A. (2022). Structural, functional, and metabolic signatures of postpartum depression: A systematic review. *Frontiers in Psychiatry*, 13, 1044995.
- Hrdličková, K., Banášová, R., Nosková, E., Vodičková, R., Byatt, N., & Šebela, A. (2022). Self-Reported Causes of Psychological Distress Among Czech Perinatal Women. *Journal of the American Psychiatric Nurses Association*, 10783903221131049.

Research Projects in 2022

Reg. No	Name	Principal Investigator	Principal beneficiary
NATIONAL PROJECTS outside ESIF			
GACR – The Czech Science Foundation			
19-15728S	Interindividual differences in subjective time perception	prof. MUDr. Jiří Horáček, Ph.D., FCMA	NIMH
19-07164S	The aversive response to spiders and the emotions that go with it	RNDr. Eva Landová, Ph.D.	NIMH
19-10057S	The Stranger as a Symbol of Otherness - How Personality Influences Our Attitudes	doc. PhDr. Marek Preiss, Ph.D.	NIMH
19-11822S	The psychology of interpersonal competence and its neural correlates	Mgr. Vít Třebický, Ph.D.	NIMH
19-14801S	Minority stress of non-heterosexual people in the Czech Republic	RNDr. Michal Pitoňák, Ph.D.	NIMH
19-17540S	The influence of girls' expressiveness and non-verbal communication towards peers on their social functioning during ontogeny	doc. Mgr. et Mgr. Jitka Lindová, Ph.D.	NIMH
20-24782S	The role of the inferior parietal lobe in the experience of agency (Self-Agency)	prof. MUDr. Pavel Mohr, Ph.D.	NIMH
20-25349S	Psychoplasticity of psilocybin - interplay of serotonergic mechanisms, cycle sleep-wake and neuroplasticity on memory consolidation	doc. RNDr. Zdeňka Bendová, Ph.D.	NIMH
20-13458S	The impact of media messages on mental health: cognitive and neural mechanisms	Prof. PhDr. Ladislav Kesner, Ph.D.	NIMH
20-12047S	New neuroprotective agents based on NMDA receptor antagonism and cholinergic stimulation	RNDr. Karel Valeš, Ph.D.	University Hospital Hradec Králové
21-03615S	Relationship of cognition to cognitive and brain reserve in first episodes of schizophrenia spectrum disorders: a prospective study	Mabel Virginia Rodriguez Manchola, PhD, Ph.D.	NIMH

21-32608S	Characterization of the state repertoire and dynamics of spontaneous brain activity	MUDr. Martin Brunovský, Ph.D.	NIMH
21-31490S	National survey on sexual behaviour, preferences and well-being of the Czech population: current situation and trends	Prof. PhDr. Petr Weiss, Ph.D., DSc.	NIMH
21-14727K	Synchronization structures in multidimensional neural signals: machine learning and prediction	MUDr. Martin Brunovský, Ph.D.	Institute of Informatics of the CAS, vvi
22-04477S	Expulsion, uprooting and changing the life line - an intergenerational study	doc. PhDr. Marek Preiss, Ph.D	NIMH
22-06943S	The role of orbitofrontal cortex and its modulation by endocannabinoids in social withdrawal in schizophrenia	Alexandre Seillier, PhD	NIMH
22-10493S	Different Concepts of Episodic Memory: Contextual Representation vs. Self	RNDr., PhDr. Tereza Nekovářová, Ph.D.	NIMH
22-13381S	Human responses to ancestral and modern threats compared to airborne disease	RNDr. Eva Landová, Ph.D.	NIMH
22-15096S	The role of increased sensitivity of interneurons to metabolic stress in the development of schizophrenia	RNDr. Karel Valeš, PhD.	NIMH
22-16874S	Reinforcing spatial memories during sleep and through targeted memory reactivation	PhDr. Jana Koprivová, Ph.D.	NIMH
22-31662S	Olfactory perception and reactivity in individuals with anxious and compulsive behavioural traits	Mgr. Lenka Martínek Nováková, Ph.D.	NIMH
22-27522S	The active influence of parents on their offspring's partner relationships	doc. Mgr. Jan Havlíček, Ph.D.	Charles University, Faculty of Arts
22-16717S	Instability and collapse of memory states in brain neural networks in health and disease	RNDr. Eduard Kelemen, Ph.D.	Charles University - Faculty of Medicine in Pilsen
23-06546S	The role of parvalbumin-positive interneurons in a rat model of schizophrenia-induced maternal immune activation	RNDr. Tomáš Petrásek Ph.D.	NIMH
23-07074S	Symmetry of brain connectivity	Ing. Mgr. Jaroslav Hlinka Ph.D.	NIMH
23-06662S	Body or behavior? The role of physical and behavioural indicators of age and sexual maturity in the context of mate choice in people with paedophilia	MSc. Kateřina Klapilová Ph.D.	NIMH
23-05857S	Alzheimer's disease and aging: can mTOR inhibitors kill two birds with one stone?	RNDr. Karel Valeš, Ph.D.	University of Hradec Kralove
AZV - The Czech Research Council			
17-31852A	Relationships between gut microbiota and brain function: implications for the metabolome and metabolic syndrome in schizophrenia	MUDr. Tomáš Páleníček, Ph.D.	NIMH

NV18-04-00260	Clinical and neurobiological predictors of response to ketamine as a basis for personalized therapy of depression	prof. MUDr. Jiří Horáček, Ph.D. FCMA	NIMH
NV18-07-00272	Sleep and brain changes in relation to memory impairment in mild cognitive impairment	prof. MUDr. Aleš Bartoš, Ph.D.	NIMH
NV19-04-00090	Overlapping neurodegenerative dementias and their clinico-pathological correlations: a prospective-retrospective multi-center study	prof. MUDr. Aleš Bartoš, Ph.D.	Thomayer Hospital
NU20-04-00147	Obsessive-compulsive disorder as a decision-making disorder: a translational assessment of aberrant error signaling and brain network coordination targeting causal interactions and clues for treatment.	prof. MUDr. Jiří Horáček, Ph.D., FCMA	NIMH
NU20-04-00389	The role of neurosteroids in the mechanism of action of clozapine	RNDr. Karel Valeš, Ph.D.	NIMH
NU20-04-00393	Obesity as a risk factor for impaired brain structure, cognitive function and clinical prognosis in schizophrenia - a prospective study.	MUDr. Filip Španiel, Ph.D.	NIMH
NU20J-04-00022	Healthy aging of the brain: A Lifelong Perspective	Doc. MUDr. Pavla Čermáková, Ph.D.	NIMH
NU20-08-00296	Dual-action cognition potentiators for palliative treatment of Alzheimer's disease	RNDr. Karel Valeš, Ph.D.	University Hospital Hradec Králové
NU20-04-00088	Gut microbiome and autoimmune mechanisms in patients with central hypersomnia	MUDr. Jitka Bušková, Ph.D.	General University Hospital in Prague
NU21-04-00307	Psilocybin versus ketamine - a strategy for rapid antidepressant response in treatment-resistant depression	MUDr. Tomáš Páleníček, Ph.D.	NIMH
NU21-04-00405	A new model of schizophrenia based on the species <i>Gnathomus petersii</i> enriched for the assessment of electrocommunication and social behaviour.	prof. MUDr. Jiří Horáček, Ph.D., FCMA	NIMH
NU21-08-00432	Predicting the functional outcome of schizophrenia from multimodal neuroimaging and clinical data	MUDr. Filip Španiel, Ph.D.	Institute of Informatics of the CAS, v. v. i.
NU21-09-00297	Co-occurrence of inflammatory rheumatic and psychiatric diseases: epidemiology, identification of risk groups and economic costs	PhDr. Petr Winkler, Ph.D.	Institute of Rheumatology
NU21J-04-00024	Sociosexual deficits in patients with first-episode psychosis and in the early stages of schizophrenia: implications for illness development and sexual remediation strategies.	Mgr. Renáta Androvičová, Ph.D.	NIMH
nu21j-09-00064.	Effectiveness of distant peer support in preventing postpartum depression: a randomized controlled trial.	MUDr. Antonín Šebela, Ph.D.	NIMH
NU22-D-132	The impact of media portrayal of the COVID-19 pandemic on mental health and attitudes towards vaccination	prof. MUDr. Jiří Horáček, Ph.D., FCMA	NIMH

NU22-D-133	Transcranial direct current stimulation (tDCS) as a therapeutic intervention for recovery from post-acute SARS-CoV-2 (PASC) sequelae	MUDr. Monika Klírová, Ph.D.	NIMH
NU22-D-135	Cognitive function after COVID-19 diagnosis in persons with schizophrenia	PhDr. Mabel V. Rodriguez M., Ph.D.	NIMH
NU22-D-136	MRI MORPHOMETRIC AND PROTEOMIC MARKERS OBTAINED FROM BRAIN EXOSOMES BEFORE AND AFTER SARS-COV-2 INFECTION	MUDr. Filip Španiel, Ph.D.	NIMH
NU22-D-146	Effects of the COVID-19 pandemic on natural mortality, suicidality and self-harm among people with a history of mental illness: a retrospective cohort study using data from national health registries	PhDr. Petr Winkler, Ph.D.	Institute of Health Information and Statistics of the Czech Republic
NU22-D-134	Changes in the prevalence of mental illness, health service use and attitudes towards mental illness in the context of the COVID-19 pandemic: a representative cross-sectional study of the Czech adult population and secondary analysis of data from previous surveys	prof. MUDr. Pavel Mohr, Ph.D.	NIMH
NU22-04-00143	Early identification of schizophrenia subtypes using a set of specific biomarkers	MUDr. Filip Španiel, Ph.D.	NIMH
NU22J-04-00061	Pathophysiological changes in the brain after psychotic state and perinatal hypoxia	Mgr. Lenka Kletečková, Ph.D.	NIMH
NU22-04-00192	Repetitive transcranial dorsomedial prefrontal cortex stimulation (dmPFC-rTMS) in antidepressant augmentation (The DOPRERA Study). Efficacy, tolerability and neurophysiological changes.	Doc. MUDr. Martin Bareš, Ph.D.	NIMH
NU22-04-00526	Disruption of spatiotemporal coordination as an early marker of schizophrenia: A translational study of the role of frontotemporal interaction	prof. MUDr. Jiří Horáček, Ph.D., FCMA	Institute of Physiology of the CAS, v. v. i.
TACR – The Technology Agency of the Czech Republic			
TL02000561	Development of tools to predict school achievement in pre-school age: the Cumulative Risk Index and Screening of Affective and Cognitive Functions through Interactive Computer Games (School Achievement)	RNDr. PhDr. Tereza Nekovářová Ph.D.	NIMH
TP01010062	BrainTech: Innovative technologies for psychiatry and clinical Neuroscience (BrainTech)	RNDr. Karel Valeš, Ph.D.	NIMH
TP01010062	Compact system for measuring autonomous sensor system control	Mgr. Přemysl Vlček	NIMH
TP01010062	VR House - Virtual Reality Exposure Therapy for Obsessive Compulsive Disorder	Mgr.et. Mgr. Iveta Fajnerová Ph.D., Ph.D.	NIMH

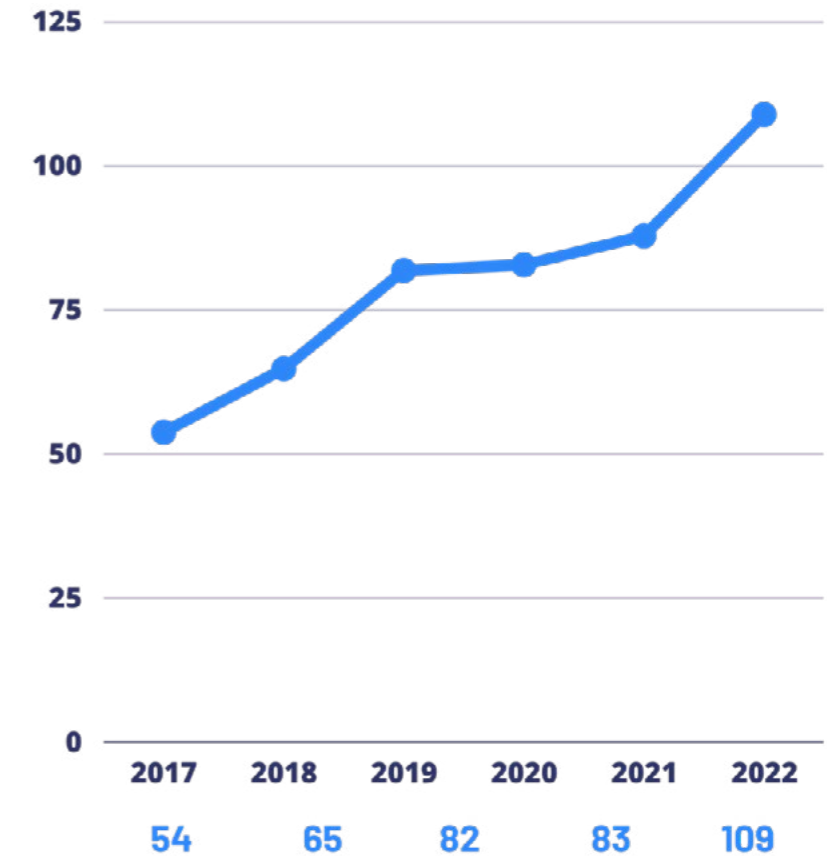
TP01010062	Validation of a method to quantify CBD and THC in CBD-rich supplements	Ing. Martin Kuchař, Ph.D.	NIMH
TP01010062	Portable pupillometric diagnostic device	Engineer Eduard Bakštein, Ph.D.	NIMH
TP01010062	Microfluidic chip for separation and detection of neuroactive steroids		NIMH
TP01010062	Biodegradable polymeric microparticles with natural fungal alkaloids as injectable depot forms of antidepressants	Ing. Martin Kuchař, Ph.D.	NIMH
TP01010062	PRESS PLATFORM: PREDICTIVE PHENOMAPPING ENABLING EARLY-STAGE SCHIZOPHRENIA SUBTYPING BASED ON AUTOMATED MRI DATA PROCESSING	MUDr. Filip Španiel, Ph.D.	NIMH
TL03000223	Exposure to stressful situations in a virtual city environment	Mgr.et. Mgr. Iveta Fajnerová Ph.D., Ph.D.	NIMH
TL03000637	Alivio-a mobile game alleviating OCD symptoms	MUDr. Pavla Stopková Ph.D.	Pixelfield s.r.o.
TL03000050	Training focused on increasing police officers' readiness for mentally and communicationally challenging situations using virtual reality	Mgr. Eliška Procházková, Ph.D.	NIMH
TL04000382	Effectiveness of the system of addiction services in the Czech Republic in the context of the COVID-19 pandemic	Mgr. Barbora Orliková, Ph.D.	NIMH
FW02020025	Stable and mobile device to support circadian synchronization, treatment and prevention of psychological disorders through full-spectrum light phototherapy	PhDr. Jana Kopřivová, Ph.D.	Spectrasol, s.r.o.
FW03010186	Novel biochip and microfluidic diagnostics of circulating biomarkers and pharmacogenes in psychiatric and oncological diseases	RNDr. Karel Valeš, Ph.D.	ESSENCE LINE, s.r.o.
Ministry of Industry and Trade			
FV40032	Biotechnological research on altering the spectrum of microbiota to improve cognitive function, depression and other neuropsychiatric diseases especially in the aging population - CleverAge Biota.	RNDr. Karel Valeš, Ph.D.	C2P s.r.o.
Ministry of Education, Youth and Sports (MoEYS)			
LM2018128	Czech National Node of the European Clinical Research Infrastructure Network (CZECRIN)	prof. MUDr. Jiří Horáček, Ph.D.	St. Anne's University Hospital in Brno
Ministry of Health			
203980065	Task-force for Effective Communication and Care for Mental Health (TEKPOD) to mitigate the impact of the Covid 19 pandemic on the mental health of the Czech population	PhDr. Petr Winkler, Ph.D.	NIMH

EUROPEAN STRUCTURAL AND INVESTMENT FUNDS (ESIF)			
NATIONAL OPERATIONAL PROGRAMMES			
Operational Programme Research, Development and Education (OP RDI)			
CZ.02.1. 01/0.0/0.0/16_025/0007444	PharmaBrain	RNDr. Karel Valeš, Ph.D., Ing. Šimon Skovajsa	NIMH
EN.02.2. 69/0.0/0.0/16_028/0006222	Capacity development for research and development in NIMH (R&D capacity development of NIMH)	Ing. Michal Vrána, Ing. Šárka Vyšínová	NIMH
PART.02.2. 69/0.0/0.0/18_053/0017858	International mobility of NIMH researchers	RNDr. Karel Valeš	NIMH
Operational Program Employment			
CZ.03.2. 63/0.0/0.0/15_039/0007276	Destigmatization of people with mental illness in the Czech Republic (Destigmatization)	PhDr. Petr Winkler	NIMH
CZ.03.2. 63/0.0/0.0/15_039/0009304	Early Intervention for Severe Mental OneDisease (MIMDOM)	PhDr. Petr Winkler	NIMH
CZ.03.3. X/0.0/0.0/15_018/0011540	PARAFILIC	Mgr. Kateřina Klapilová, Ph.D.	NIMH
Integrated Regional Operational Program			
OP Enterprise and Innovation for Competitiveness			
CZ.01.1. 02/0.0/0.0/17_176/0015497	Use of industrial biotechnology methods for differential diagnosis of neurological diseases	RNDr. Jan Řičný, CSc.	VIDIA spol. s r.o.
TRANSNATIONAL AND INTERNATIONAL COOPERATION PROGRAMMES			
Ministry of Education, Youth and Sports (MoEYS)			
INTER-ACTION LTAUSA19135	The dynamics of hippocampal and neocortical neuronal representations of the interrelationships between subject, moving objects and environment.	RNDr. Eduard Kelemen, Ph.D.	NIMH
JPND-568-060	Restoration of motor function in Parkinson's disease using non-invasive hybrid transcranial neuromodulation	Mgr. Grygoriy Tsenov, MSc., Ph.D.	NIMH
COST ACTION			
COST ACTION CA18124	European sexual medicine network - Czech sexual medicine and research	Mgr. Kateřina Klapilová, Ph.D.	Austrian Academy for Sexual Medicine
WHO - World health organization			
WHO	WHO - Collaborating Centre	PhDr. Petr Winkler, Ph.D.	NIMH

WHO	WHO - Synthesis of evidence on mental health policy implementation in WHO/Europe	PhDr. Petr Winkler, Ph.D.	NIMH
WHO	Mapping of psychosocial services for Ukrainians in Czechia	PhDr. Petr Winkler, Ph.D.	NIMH
UNICEF/WHO	MHPSS programmes for children from Ukraine and their classmates and teachers in Czechia	PhDr. Petr Winkler, Ph.D.	NIMH
Norwegian funds			
ZD-ZDOVA1-025	Monitoring and strengthening the mental health of children and adolescents	PhDr. Petr Winkler, Ph.D.	NIMH
ZD-ZDOVA1-018	Pregnancy without psychosocial stress - the earliest prevention of mental disorders and toxic stress in children.	MUDr. Antonín Šebela, Ph.D.	NIMH
EUROPEAN UNION COMMUNITY PROGRAMMES			
DG Justice - Rights, Equality and Citizenship Programme 2014-2020			
JUST 881635	Supporting Wellbeing and Integration of Transgender victims in Care environments with Holistic (SWITCH) approach	PhDr. Pavla Doležalová, Ph.D.	PERSEO SPA SOCIAL ENTERPRISE, IT
JUST 881738	Make the difference - working together for children in households with addiction issues (MAKE THE DIFFERENCE)	Mgr. Barbora Orlíková, Ph.D.	REGIONAL ASSOCIATION OF WESTPHALIA-LIPPE
JUST	Rise up against anti-LGBTI hate crimes	RNDr. Michal Pitoňák, Ph.D.	Prague Pride z.s.
HORIZON 2020			
H2020 101016233	Pan-European Response to the ImpactS of COVID-19 and future Pandemics and Epidemics (PERISCOPE)	PhDr. Petr Winkler, Ph.D.	UNIVERSITY OF STUDIES OF PAVIA - UNIPV
H2020 965417	Revolution of sleep diagnostics and personalized health care based on digital diagnostics and therapeutics with health data integration (SLEEP REVOLUTION)	MUDr. Jitka Bušková, Ph.D.	HASKOLINN I REYKJAVIK EHF
101090306 nmdar-dcm	Profiling NMDA receptor in schizophrenia and predicting clinical trajectories from rsEEG using dynamic causal modelling	Mgr. Nikola Jajcay, Ph.D.	NIMH
HE-CL3-2021-FCT-01-11	2PS - Prevent & Protect through support (Prevention of child sexual exploitation)	Mgr. Kateřina Klapilová, Ph.D.	Polish platform for Homeland Security (Stowarzyszenie Polska Platforma
101084719	STOP CSAM Scalable Technology for Online Prevention of Child Sexual Abuse and Child Sexual Abuse Materials	Mgr. Kateřina Potyszová	CHARITE - UNIVERSITY MEDICINE BERLIN
ISF-2021-TF1-AG-CYBER	BRIDGE	Mgr. Kateřina Klapilová, Ph.D.	Health Care Services Stockholm County (SLSO)

EU Health Programme			
101035969	Joint Action on Support for Member States' implementation of best practices in the area of mental health (JA-02-2020)	Msgr. Alexandr Kasal	NATIONAL PUBLIC HEALTH ORGANISATION GREECE
Others			
(Work contract)	Predictors of risky gambling in the online environment	PhDr. Ladislav Csémy	NIMH
Donation agreement Nk67/2021	The Cooperative Foundation supports the mental health of mothers and their children.	MUDr. Antonín Šebela, Ph.D.	NIMH
Foundation contribution	Implementation of activities and research focused on the antidepressant potential of the psychedelics psilocybin and ketamine and the neurobiology of antidepressant action	MUDr. Tomáš Páleníček, PhD.	NIMH
Foundation contribution	Development of long-term psychosocial support for the Ukrainian population	PhDr. Petr Winkler, PhD.	NIMH
Foundation contribution	Closer together - UKR project	PhDr. Petr Winkler, PhD.	NIMH
Foundation contribution	RSJ Foundation: staff strengthening of the Child and Adolescent Mental Health working group team	PhDr. Petr Winkler, PhD.	NIMH
WHO	Basics of EmotionAid and ASSYST for healthcare professionals working with refugees from Ukraine	PhDr. Petr Winkler, PhD.	NIMH

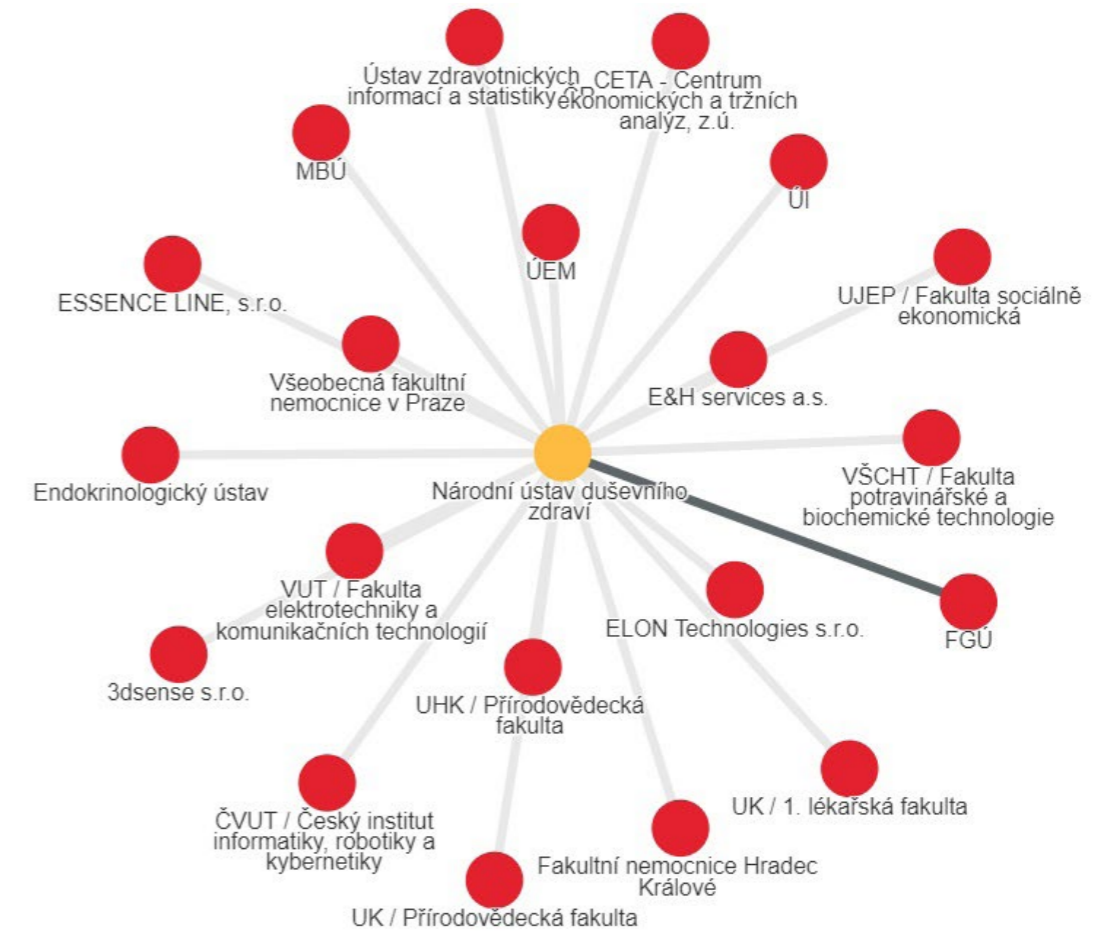
Total Number of Grants and Projects



Research Funding Received by Provider and Type of Support (in CZK)

Providers	2021	2022
Czech Health Research Council	32 796 965	53 621 000
Czech Science Foundation	29 904 000	38 821 000
Technology Agency of the Czech Republic	22 721 497	16 070 833
Ministry of Education, Youth and Sports	60 185 961	53 950 151
Ministry of Labour and Social Affairs	43 376 830	30 906 291
Ministry of Health	48 811 185	11 753 300
Ministry of Industry and Trade	2 725 700	1 810 000
IPO	49 406 773	48 280 254

Cooperating Institutions in the Czech Republic



Industry-Sponsored Research

Protocol number	Study Name	CRO/Sponsor	Principal Investigator
MP18	An Open-Label, Multi-Site Phase 2 Study of the Safety and Effect of Manualized MDMA-Assisted Psychotherapy for the Treatment of Severe Posttraumatic Stress Disorder/	MAPS Europe B.V.	MUDr. Tomáš Páleníček, Ph.D.
COMP004	Multicentre study to assess safety and efficacy of psilocybin in patients with treatment-resistant depression following completion of COMP 001 and COMP 003 trials (P-TRD LTFU)	COMPASS Pathways, Ltd./ Worldwide Clinical Trials	MUDr. Tomáš Páleníček, Ph.D.
ACP-103-064	A Phase 3, Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of Pimavanserin as Adjunctive Treatment for the Negative Symptoms of Schizophrenia (Advance-2)	ACADIA Pharmaceuticals, Inc / IQVIA RDS CZ	MUDr. Mgr. Barbora Kohútová, Ph.D.
ACP-103-035	A 52-Week, Open-Label, Extension Study of Pimavanserin for the Adjunctive Treatment of Schizophrenia	ACADIA Pharmaceuticals, Inc / IQVIA RDS CZ	MUDr. Mgr. Barbora Kohútová, Ph.D.
18498A	A randomised, double-blind, parallel-group, active controlled study evaluating the efficacy of vortioxetine versus desvenlafaxine in adult patients suffering from major depressive disorder with partial response to SSRI treatment	Lundbeck/Icon	MUDr. Mgr. Barbora Kohútová, Ph.D.
1402-0012	Phase II Proof of Concept and Dose Range Finding Trial of BI 1358894 in Patients with Borderline Personality Disorder	Boehringer Ingelheim International GmbH/ IQVIA RDS CZ	MUDr. Jiřina Kosová
1346-0013	A phase III randomized, double-blind, placebo-controlled parallel group trial to examine the efficacy and safety of BI 425809 once daily over 26 week treatment period in patients with schizophrenia	Boehringer Ingelheim International GmbH/ IQVIA RDS CZ	MUDr. Mgr. Barbora Kohútová, Ph.D.
1346-0014	An open label, single arm, extension trial to eXamine long-term safety of BI 425809 once daily in patients with schizophrenia who have completed previous BI 425809 Phase III trials (CONNEX-X)	Boehringer Ingelheim International GmbH/ IQVIA RDS CZ	MUDr. Mgr. Barbora Kohútová, Ph.D.
KET01-02	A multicenter, double-blind, randomised, placebo-controlled phase II study with a 3 week treatment period to assess the efficacy, safety and tolerability of add-on treatment with Ketamine hydrochloride prolonged release tablets (KET01, 120 mg or 240 mg once daily) in outpatients with treatment resistant depression	Ketabon GmbH/ Scope Intern	MUDr. Tomáš Páleníček, Ph.D.
IBA1156	First choice Antidepressants in - monitoring of GPs prescription habits in the Czech Republic - FIAT -	Angelini Pharma / IBA / Mindpax	MUDr. Filip Španiel, Ph.D.

Ethic Committee

The Ethics Committee is an integral part of the NIMH. It works according to the principles of Good Clinical Practice and European or Czech laws. The Ethics Committee is registered on the list of the local ethics committees of the State Institute for Drug Control.

In 2022, the Ethics Committee reviewed 54 new grants and other research project proposals, including six pharmacological contract research projects, and monitored the progress of 69 research projects or clinical trials and ten pharmacological contract research projects. In 2022, researchers and sponsors contacted the Ethics Committee in 205 cases - approval of research projects, project changes, informed consent changes, reporting of serious adverse events, annual progress reports, etc. The Ethics Committee cooperated with the ethics committees for multicentre clinical trials in the Czech Republic.

MEMBERS:

doc. MUDr. Martin Bareš, Ph.D.
chairman - NIMH, psychiatrist

MUDr. Tomáš Novák, Ph.D.
vice-Chairman - NIMH, psychiatrist

MUDr. Veronika Andrashko
NIMH - doctor, psychiatrist

Bc. Barbora Baslová
NIMH - social worker, member without medical or scientific background

MUDr. Martin Hejzlar
NIMH - doctor, psychiatrist

Bc. Jakub Sobotka
member without medical or scientific education, without working relationship to NIMH

Olga Svecova
NIMH - without medical or scientific training

Bc. Markéta Švejdová Jandová
member without medical or scientific education, without working relationship to NIMH

Mgr. Veronika Renková
NIMH - psychologist

Results of Research and Development

Results are sorted following RIV (The Registry of Information about Results) categories:

- J - Article in a peer-reviewed journal: 161
 - Of which:
 - Jimp (original/reviewed article in a peer-reviewed journal that is included in the Web of Science database): 138
 - Jsc (original/reviewed article in a peer-reviewed journal, included in the SCOPUS database): 3
 - Jost (other publications): 20
- B Scientific book: 2
- C Chapter in a scientific book: 3
- D Proceedings: 1
- R Software: 2
- G Functional sample: 1
- O Other RIV results: 1

Top publications in 2022 ranked in descending order of impact factor (only publications with IF > 5 are listed). Authors from NIMH are in Bold.

THORNICROFT, G., SUNKEL, Ch., **ALIEV, A.**, BAKER, S., BROHAN, E., EL CHAMMAY, R., DAVIES, K., DEMISSIE, M., JOSHUA, D., FEKADU, W., GRONHOLM, PC., **GUERRERO, Z.**, GURUNG, D., HABTAMU, K., HANLON, Ch., HEIM, E., HENDERSON, C., HIJAZI, Z., HOFFMAN, C., HOSNY, N., HUANG, F., KLINE, S., KOHRT, BA., LEMPP, H., LI, J., LONDON, E., MA, N., MAK, WWS., MAKHMUD, A., MAULIK, PK., MILENOVA, M., MORALES CANO, G., QUALI, U., PARRY, S., RANGASWAMY, T., RÜSCH, N., SABRI, T., SARTORIUS, N., SCHULZE, M., STUART, H., SALISBURY, TT., SAN JUAN, NV., VOTRUBA, N., **WINKLER, P.** The Lancet Commission on ending stigma and discrimination in mental health. *The Lancet*. 2022, **400**(10361), 1438-1480. ISSN 0140-6736. DOI: 10.1016/S0140-6736(22)01470-2. IF 168.900.

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R&D Results according to RIV categories

	2017	2018	2019	2020	2021	2022
J - article in a peer-reviewed journal	164	180	215	174	183	161
C - chapter in a scientific book	24	6	14	5	0	3
D - paper in the proceedings	11	11	11	5	3	1
B - scientific book	3	2	1	1	2	2
R - software	3	2	1	1	2	2
N - methodology	1	0	0	10	0	0
P - Patent	0	0	1	0	0	0
G - Technically realised results	0	1	1	0	2	1

Articles in journals with IF (Jimp)

	2017	2018	2019	2020	2021	2022
number of articles	120	129	140	128	160	138
IF (total)	306,081	439,668	412,956	434,684	767,84	1115,5

Paper of the season

Since 2021, the Paper of the Season award for the best publication by NIMH authors has been announced. Criteria: the first or corresponding author is from NIMH, the first/primary affiliation is with NIMH, and the publication is in a first-quartile journal in one of the categories in Web of Science. Original papers have priority over review papers.

Winter 2021/2022:

Juza R, Vojtechova I et al. Novel D2/5-HT receptor modulators related to cariprazine with potential implication to schizophrenia treatment. *Eur J Med Chem*. 2022;232:114193
IF 6.514, AIS 0.876, Q1 (P95) CHEMISTRY, MEDICINAL

Spring 2022:

Hlinka J, et al. The intra-session reliability of functional connectivity during naturalistic viewing conditions. *Psychophysiology*. 2022; 59(10):e14075
IF 4.348, AIS 1.380, Q1 (P 77) PSYCHOLOGY, EXPERIMENTAL

Summer 2022:

Škoch A, et al. Human brain structural connectivity matrices-ready for modelling. *Sci Data*. 2022; 9(1):486
IF 8.501, AIS 3.515, Q1, (P 91) MULTIDISCIPLINARY SCIENCES

Autumn 2022:

Formánek T, et al. Mortality and life-years lost following subsequent physical comorbidity in people with pre-existing substance use disorders: a national registry-based retrospective cohort study of hospitalised individuals in Czechia. *Lancet Psychiatry*. 2022 Dec 9
IF 77.056; AIS 15.448; Q1 (P 99) PSYCHIATRY

International Cooperation

Consortium of 33 countries	I-SHARE Consortium
Argentina	University of Buenos Aires
Australia	Woolcock Institute of Medical Research, University of Sydney
Belgium	The Institute for Family and Sexuality Studies, Department of Neurosciences, School of Medicine, KU Leuven, Belgie;
Denmark	Department of Drug Design and Pharmacology Universitetspark 2, University of Copenhagen, Copenhagen University of Cambridge, Aarhus University
Finland	Population Research Institute of the Family Federation of Finland, Helsinki Protect Children (Suojellaan Lapsia ry.)
France	Université Claude Bernard, the Lyon Neuroscience Research Center (CRNL)
Italy	Dept. Science, Roma Tre University, Roma European Commission (DG JUST), PERSEO SpA Social Enterprise, Paradigma - Research & Community Psychology Karolinska Institute, University of Pavia, EU funding programme Horizon 2020 Scientific Institute San Raffaele, Neurology-Sleep Medicine Center
Israel	Abraham Zangen's lab, Department of Life Sciences, Ben-Gurion University of the Negev, Beer Sheva, Weizmann Institute of Science, Bar-Ilan University, National Institute of Advanced Industrial Science Technology, National Institute on Drug Abuse
Japan	Okinawa Institute of Science and Technology School Corporation
Canada	the Sexual Behaviors Clinic Royal Ottawa Mental Health Centre, Ottawa McGill University, Montreal
Colombia	University of Magdalena
Lithuania	Institute of Biosciences, Vilnius University
Latvia	Institute of Public Health, Riga Stradins University, Riga
Germany	University Medical Center Göttingen/ Dept. of Neurology University Medical Centre Freiburg Hanover Medical School

	Department of Psychiatry and Psychotherapy, Universitätsklinikum Erlangen
	Institute of Psychopharmacology Central Institute of Mental Health (ZI) University of Heidelberg, Mannheim
	Centre for Psychosocial Medicine; Institute for Sexual Research, Sexual Medicine and Forensic Psychiatry; Hamburg
	Institute for Sexology and Sexual Medicine at Charité - Universitätsmedizin in Berlin, Germany
	TECHNISCHE UNIVERSITÄT BERLIN, Quality and Usability Lab,
	University of Lübeck, Lübeck
	University of Tübingen, Tübingen
	Department of Psychotherapy and Psychiatry, University Clinic, Freiburg
	European Commission (DG JUST), Landschaftsverband Westfalen-Lippe
	Max Planck Institute for Human Cognitive and Brain Sciences
	Charité - University Medicine Berlin
	Hanover Medical School
	Institute for Sexology and Sexual Medicine, Charité - Universitätsmedizin Berlin
	Department of Clinical Psychology and Sexual Medicine at Hannover Medical School
Netherlands	Cognitive Psychology, Leiden University, Leiden University of Amsterdam Department of Health Sciences, Vrije Universiteit Amsterdam
	Dutch Centre of Expertise on Sexual and Reproductive Health and Rights; Rutgers, Utrecht
Norway	Chiron AS, Trondheim Department of Health Promotion and Development, UNIVERSITY OF BERGEN Norwegian Institute of Public Health
Portuguese	UNIVERSIDADE DE TRAS-OS-MONTES E ALTO DOURO, Department of Education and Psychology Centre for Psychology at University of Porto, Faculty of Psychology and Education Sciences, Porto, Portugal
Austria	The Austrian National Public Health Institute (Gesundheit Österreich GmbH, GÖG), European Commission (EU Health Programme)
Greece	Dept of Biology, University of Crete, Heraklio

Slovakia	Academy of the Police Corps in Bratislava
	International Virtual Laboratory for Advanced Materials Physics - PhysNet
Spain	UNIVERSITAT JAUME I DE CASTELLON, Personality, Assessment and Psychological Treatments
	UNIVERSITAT INTERNACIONAL DE CATALUNYA, Faculty of Medicine and Health Sciences, School of Medicine
Sweden	ANOVA, Karolinska University Hospital, Stockholm
	Department of Clinical Neuroscience, Karolinska Institutet;(FoUUI-SE), Rahm research group, Sweden
Switzerland	Translational Neuromodeling Unit, University of Zurich & ETH Zurich, Zurich, CH
	World Health Organization, Department of Mental Health and Substance Use
	University in Geneva, Univerzita della Svizzera italiana
USA	California Institute of Integral Studies, San Francisco, California
	Polaris Insight Center
	Moore Center for the Prevention of Child Sexual Abuse, Johns Hopkins Bloomberg School of Public Health, Baltimore.
	University of California, Irvine
	USC University of Southern California
United Kingdom	Institute of Psychological Medicine and clinical Neuroscience MRC Centre for Neuropsychiatric Genetics and Genomics Cardiff University School of Medicine, Cardiff
	Imperial College London
	Lucy Faithfull Foundation
	Stop It Now!
	Stop So
	University of Cambridge
	King's College London
	Compass Pathways



MUDr. Tomáš Novák, Ph.D.
Deputy Director for Research and Education

Education

Education in psychiatry, neuroscience, and public mental health is our important mission. NIMH offers a broad range of educational opportunities that include undergraduate, postgraduate, and residency programs, as well as continuing education for professional development and events intended for the general public. NIMH employs a team of competent teachers and supervisors, ensuring robust teaching standards and the quality of education. To advance our horizons, we regularly invite national and international experts to communicate the latest developments in neuroscience. In education, NIMH cooperates with Charles University in Prague, notably with the Third Faculty of Medicine.

Undergraduate Education

As the Department of Psychiatry and Medical Psychology, NIMH provides psychiatry teaching for the Master's (General Medicine) and Bachelor's (Physiotherapy, Nursing and Dental Hygiene) study programs of the 3rd Faculty of Medicine of Charles University. The teaching of psychiatry in the Master's program is conducted in Czech and English and is divided into two parts, which take place within the modules Neurobehavioural Sciences I and Neurobehavioural Sciences II. In addition to the compulsory courses, we also offer a number of optional courses related to psychiatry. The range of electives has been significantly expanded from seven in 2021 to fifteen in 2022. In addition to regular teaching, undergraduate students benefit from practical placements in the clinic or in the NIMH laboratories.

Number of undergraduate students

	Teaching in Czech	Teaching in English
Neurobehavioural Sciences I	213	53
Neurobehavioural Sciences II	191	57
Bachelor programmes	100	0
Erasmus +	0	8
Optional courses	>500*	52

* the number is approximate, participation is also possible for students outside the 3rd Faculty of Medicine

Head

- prof. MUDr. Jiří Horáček, Ph.D.

Deputy for Research

- MUDr. Martin Brunovský, Ph.D.

Deputy for Teaching

- MUDr. Tomáš Novák, Ph.D.

Professor

- prof. MUDr. Lucie Bankovská Motlová, Ph.D.
- prof. MUDr. Cyril Höschl, DrSc.
- prof. PhDr. Jiří Kožený, CSc.
- prof. MUDr. Pavel Mohr, Ph.D.

Associative Professor

- Assoc. Prof. MUDr. Martin Bareš, Ph.D.
- Assoc. Prof. MUDr. Jitka Bušková, Ph.D.
- Assoc. Prof. MUDr. Michal Goetz, Ph.D.
- Assoc. Prof. MUDr. Monika Klírová, Ph.D.

Postgraduate Education

One of the main priorities of NIMH is to provide the best possible conditions for training the next generation of researchers, who usually start their careers as Ph.D. students. NIMH has a number of supervisors and consultants who guarantee a high professional level of postgraduate education and its successful completion. In 2022, more than 100 Ph.D. students in neuroscience, clinical psychology, psychiatry and others completed at least part of their doctoral studies here.

Lifelong Education

NIMH strives to provide all employees with ample facilities for their professional and personal development. We support employees at every stage of their careers and encourage them to pursue continuing education. We aim to offer training opportunities that enhance their expertise and align with their current roles. Sixteen seminars and lectures organized by RP&C, along with a series of educational activities under HRS4R (The Human Resources Strategy for Researchers), took place in 2022. For example, we can mention a mentoring program for young researchers and courses on statistics and methodology.

Residency Education

NIMH is an accredited centre for continuing education of doctors and psychologists in psychiatry and clinical psychology. In addition to CME, the NIMH clinic offers short- and long-term internships to doctors and psychologists.

Prof. MUDr. Cyril Höschl, DrSc., FRCPsych, prof. MUDr. Jiří Horáček, Ph.D., FCMA and prof. MUDr. Pavel Mohr, Ph.D., are approved examiners for the Board examination in psychiatry and MUDr. Pavla Stopková, Ph.D., for the attestation examination in child and adolescent psychiatry.



prof. MUDr. Pavel Mohr, Ph.D.
Deputy Director for Clinical Care

Medical Care

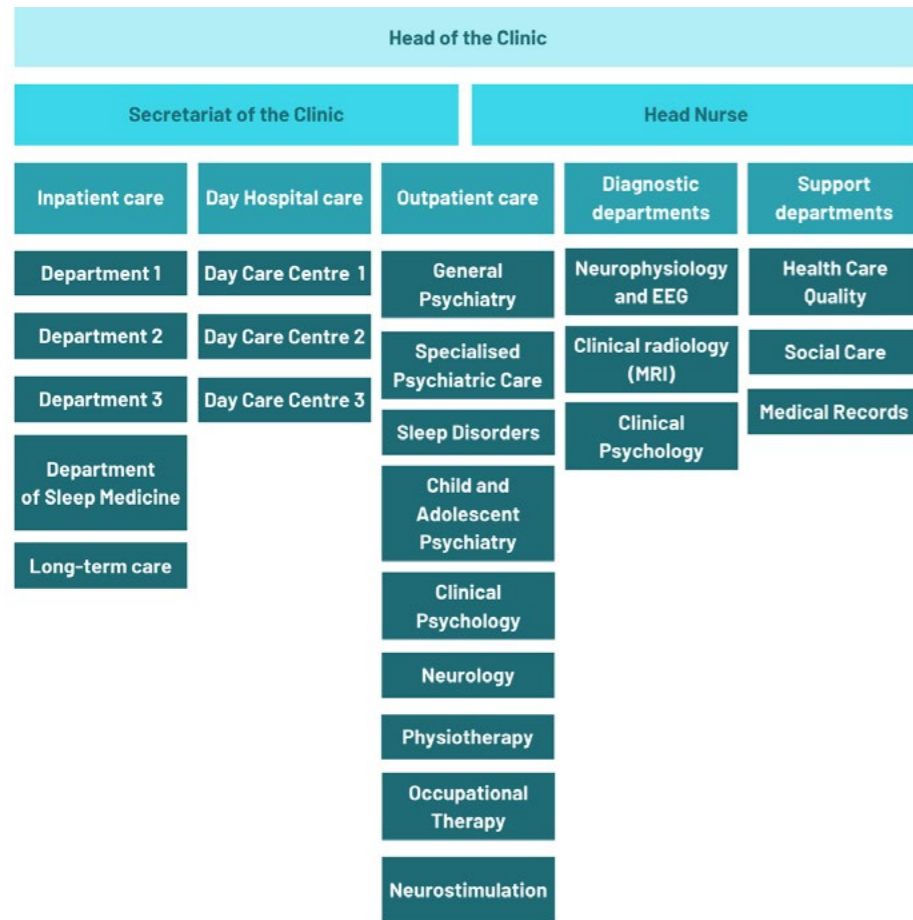
The NIMH Clinic is primarily a single-discipline (psychiatric) hospital, although we do provide treatment and diagnostic care in other areas, neurology, clinical psychology, and radiology. In addition to treatment, the clinic participates in medical education, it is the teaching base (Department of Psychiatry and Medical Psychology Clinic of the 3rd Faculty of Medicine at Charles University in Prague), collaborates in research organized by the research programmes and centres of the NIMH. The Clinic provides postgraduate training of doctors and psychologists, including residency programme for young psychiatrists.

The core number of beds (55 psychiatric beds at 3 inpatient departments) is complemented with beds at the Department of Sleep Medicine for specialised polysomnographic examinations. Medical care provided in inpatient units, outpatient clinics, and day hospitals, covers a wide range of the most serious mental disorders and is directly linked to ongoing research programmes: psychotic disorders (early stages of psychosis, treatment-resistant schizophrenia), mood disorders (depression and bipolar disorder), anxiety disorders (obsessive compulsive disorder, panic disorder, agoraphobia, etc.), and sleep disorders. In addition to acute care, indicated cases can receive a long-term care.

For diagnostics, neuroimaging (magnetic resonance), electrophysiological (electroencephalography, polysomnography) methods, as well as methods of clinical psychology are available.

Outpatient care covers general psychiatric care, neurological, and psychological care, rehabilitation; specialised outpatient clinics care for pregnant and nursing women, bipolar disorder, early stages of psychotic disorders, affective disorders, adult ADHD. Outpatient department of perinatal psychiatry detects and assists mothers with depressive and anxiety symptoms during pre- and perinatal period; neurostimulatory department provides therapy with repetitive transcranial magnetic stimulation. In 2022, we have opened an outpatient department of child and adolescent psychiatry, a first step towards the planned inpatient ward for adolescent patients.

Flow Chart



Inpatient Care

Inpatient care	Departments 1, 2, 3	Department of Sleep Medicine	Long-term Care
Total net reimbursement for hospitalisations	73 083 163,42 Kč	6 995 671,06 Kč	4 389 734,14 Kč
Number of hospital admissions	462	829	124
Total case mix	1371,696	149,745	
Case mix Index (average cost of a hospital case)	2,969	0,181	
Average number of performance points per case	57574,03	7465,35	

Day Care Centers

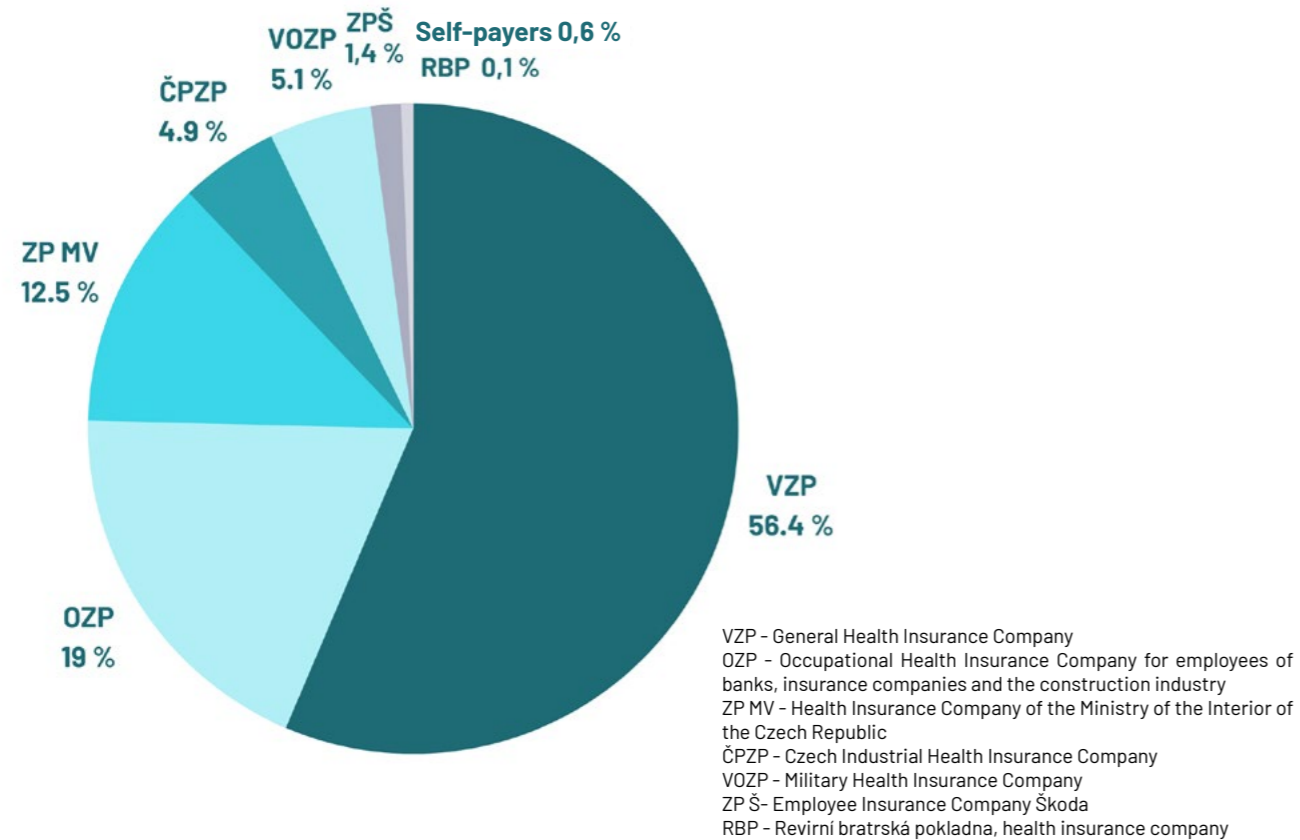
	number of points	number of patients
Day Care Center 1	2 557 176,00	142
Day Care Center 2	2 620 782,00	162
Day Care Center 3	3 030 156,00	127
Total	8 208 114,00	431

Outpatient Care and On-demand Care

Outpatient Clinic	number of points
Psychiatric	6 235 316
Child Psychiatry	127 263
Psychological	3 010 214
Neurological	5 649 712
Physiotherapy	4 802 343
Radiology	2 783 735
Total	22 608 583
Of which only outpatient care	13 593 635
Of which only care requested during hospital admissions	9 014 948

The total reimbursement for health care provided in 2022 is 112,067,708.32 CZK

Preliminary Share of Individual Insurance Companies in Total Payments





Ing. Karla Komárková
Deputy Director for Economics

Economy and Human Resources

Management and human resources

The organisation operated within the established financial plan for 2022. The most significant cost items (accounts: 501, 502, 511, 512 and 518), except for payroll costs, were in line with the established plan. The most significant cost item budgeted in 2022 was personnel costs. The increase, compared to the approved 2022 budget, was due to both the statutory indexing of state employee salaries (10% salary increase effective September 1, 2022) and new/implemented grants/projects. In 2022, NIMH managed a positive economic result of CZK 12,934,314.74 before tax, with a profit of CZK 12,710,274.96 for the main activity. NIMH has assessed tax losses from previous years and therefore the tax liability for 2022 is zero. For this reason, the after-tax result is also CZK 12,934,314.74. The positive result for 2022 is mainly due to the increased income from health insurance, the conceptual setup of financial planning and the efficient allocation of the institution's financial resources, i.e. ensuring optimal financial management, to which the regular reporting introduced in 2022 also contributed.

The development of CF was in line with the plan. NIMH received institutional support of CZK 48,280,254 for 2022. At the end of 2022, the organization received an operating non-investment contribution of CZK 25,000,000, which was used to refinance the current activities of the National Institute of Mental Health. The contribution was used to cover the salary costs including levies and Fund for Cultural and Social Needs (FCSN) of scientific, administrative and technical staff who were not funded by external grants or income from health insurance companies.

We respect and reflect the set trend of annually decreasing subsidies provided by the founder, however, despite all the measures already taken, it will be very difficult to do without this contribution in the coming years due to inflation and energy prices.

Cost

The most significant cost item in the 2022 budget was personnel costs. Gross salaries in 2022 amounted to CZK 205,718,729, while in the previous year CZK 220,512,303 was paid in salaries. As part of the optimization, there was an overall reduction in salary costs in 2022. Other cost items followed a standard development throughout the year and there were no significant unplanned expenses in 2022.

Revenue

The total revenue was CZK 372,418,426.80. The main source of revenue for the organization is transfer income, which amounted to CZK 251,915,049.55 in 2022, mainly subsidies received, contributions and accruals for investment transfers received. The organization received institutional resources totaling CZK 72,350,254.00, of which the IPO amounted to CZK 48,280,254.00 and the subsidy for residency positions was CZK 70,000.00. The operating contribution from the founder was CZK 25,000,000. The income from health insurance was CZK 108,756,902.79 in 2022.

Secondary economic activity

The non-core economic activity ended in profit of CZK 224,039.78 in 2022. The incidental economic activity included the operation of the cafeteria and the food preparation room of NIMH.

Balance Sheet 2022

(in whole thousands CZK)

Item number	Item name	Syn- thetic ac- count	BRUTTO	CORRECTS	NET	LAST PERIOD
TOTAL ASSETS			931 730	255 678	676 052	657 005
A.	Fixed assets		817 209	255 645	561 565	574 578
A.I.	Intangible fixed assets		52 585	33 747	18 838	17 497
A.I.1.	Intangible results of research and development	012	2 539	1 096	1 443	1 362
A.I.2.	Software	013	44 838	27 443	17 395	16 135
A.I.3.	Valuable rights	014				
A.I.4.	Emission allowances and preferential caps	015				
A.I.5.	Small intangible fixed assets	018	5 209	5 209		
A.I.6.	Other intangible fixed assets	019				
A.I.7.	Intangible fixed assets in progress	041				
A.I.8.	Advances made for intangible fixed assets	051				
A.I.9.	Intangible fixed assets held for sale	035				
A.II.	Tangible fixed assets		764 624	221 897	542 727	557 080
A.II.1.	Land	031	40 776		40 776	40 776
A.II.2.	Cultural items	032	265		265	265
A.II.3.	Buildings	021	427 230	38 823	388 406	393 917
A.II.4.	Separate tangible movable items and sets of tangible movable items	022	227 694	114 414	113 280	122 123
A.II.5.	Growing units of permanent crops	025				
A.II.6.	Small tangible fixed assets	028	68 660	68 660		
A.II.7.	Other tangible fixed assets	029				
A.II.8.	Tangible fixed assets in progress	042				
A.II.9.	Advances made for tangible fixed assets	052				

A.II.10.	Tangible fixed assets held for sale		036			
A.III.	Non-current financial assets					
A.III.1.	Equity interests in persons with decisive influence		061			
A.III.2.	Equity interests in persons with significant influence		062			
A.III.3.	Debt securities held to maturity		063			
A.III.5.	Long-term term deposits		068			
A.III.6.	Other non-current financial assets		069			
A.IV.	Long-term receivables					
A.IV.1.	Long-term repayable financial assistance provided		462			
A.IV.2.	Long-term receivables from assigned loans		464			
A.IV.3.	Long-term advances granted		465			
A.IV.5.	Other non-current receivables		469			
A.IV.6.	Long-term advances granted for transfers		471			
B.	Current assets		114 521	34	114 488	82 427
B.I.	Stocks		593	34	559	715
B.I.1.	Acquisition of material		111			
B.I.2.	Material in stock		112	214	214	280
B.I.3.	Material on the way		119			
B.I.4.	Unfinished production		121			
B.I.5.	Semi-finished products of own production		122			
B.I.6.	Products		123	348	314	348
B.I.7.	Acquisition of goods		131			
B.I.8.	Goods in stock		132	31	31	87
B.I.9.	Goods on the way		138			
B.I.10.	Other stocks		139			
B.II.	Short-term receivables		11546		11546	14 224
B.II.1.	Subscribers		311	211	211	799

B.II.4.	Short-term advances granted	314	1492	1492	473
B.II.5.	Other receivables from operating activities	315			12
B.II.6.	Short-term repayable financial assistance provided	316			
B.II.9.	Receivables from employees	335			57
B.II.10.	Social security	336			
B.II.11.	Health insurance	337			
B.II.12.	Retirement savings	338			
B.II.13.	Income tax	341			
B.II.14.	Other taxes, fees and other similar monetary benefits	342			
B.II.15.	Value added tax	343			
B.II.16.	Claims on persons other than selected government entities	344			
B.II.17.	Claims on selected central government institutions	346			
B.II.18.	Receivables from selected local governments	348			
B.II.28.	Short-term advances granted for transfers	373			
B.II.30.	Accrued expenses	381	803	803	107
B.II.31.	Deferred income	385			
B.II.32.	Doubtful accounts active	388	9 040	9 040	12 776
B.II.33.	Other short-term receivables	377			
B.III.	Short-term financial assets		102 383	102 383	67 488
B.III.1.	Equity securities for trading	251			
B.III.2.	Debt securities for trading	253			
B.III.3.	Other securities	256			
B.III.4.	Short-term time deposits	244			
B.III.5.	Other current accounts	245	9 432	9 432	10 086
B.III.9.	Current account	241	86 265	86 265	51 628
B.III.10.	FCSN current account	243	6 531	6 531	5 324
B.III.15.	Valuables	263	79	79	367
B.III.16.	Money on the way	262			
B.III.17.	Checkout	261	76	76	83

Profit and Loss Statement 2022 (in whole thousands CZK)

Item number	Item name	Synthetic account	Main activity (current period)	Economic activity (current period)	Main activity (previous period)	Economic activity (previous period)
A.	TOTAL COSTS		356 241	3 243	373 444	5 911
I.	Costs from operations		356 204	3 243	373 410	5 911
1.	Material consumption	501	16 638	1 946	17 011	2 309
2.	Energy consumption	502	9 443	361	5 348	321
3.	Consumption of other non-stackable supplies	503				
4.	Goods sold	504				
5.	Fixed asset activation	506				
6.	Activation of current assets	507				
7.	Change in own production stocks	508			-26	
8.	Repair and maintenance	511	1 658		1 351	
9.	Travel	512	2 966		571	
10.	Representation costs	513	390		138	
11.	Activation of intra-organizational services	516				
12.	Other services	518	21 168	105	20 739	125
13.	Labour costs	521	205 106	612	218 137	2 376
14.	Statutory social insurance	524	65 409	196	69	737
15.	Other social insurance	525	813	2	877	
16.	Statutory social costs	527	3 843	11	4 752	43
17.	Other social costs	528				
18.	Road tax	531				

19.	Real estate tax	532	45		45	
20.	Other taxes and fees	538	25		31	
22.	Contractual penalties and default interest	541				
23.	Other fines and penalties	542	1 710	3	54	
24.	Donations and other gratuitous transfers	543				
25.	Material sold	544				
26.	Deficits and damages	547	11	6	10	
27.	Fund creation	548				
28.	Depreciation of fixed assets	551	20 815		31 333	
29.	Intangible fixed assets sold	552				
30.	Tangible fixed assets sold	553				
31.	Land sold	554				
32.	Establishment and settlement of provisions	555				
33.	Creation and settlement of provisions	556	34			
34.	Costs of receivables disposed of	557				
35.	Cost of small fixed assets	558	2 786		1 040	
36.	Other operating expenses	549	3 344		2 156	
II.	Financial costs		37		34	
1.	Securities and shares sold	561				
2.	Interest	562				
3.	Exchange rate losses	563	37		34	
4.	Fair value revaluation expense	564				
5.	Other financial costs	569				

III.	Transfer costs					
1.	Transfer expenditure of selected central government	571				
2.	Transfer costs of selected local governments	572				
V.	Income tax					
1.	Income tax	591				
2.	Additional income tax levies	595				
B.	TOTAL REVENUES		368 952	3 467	373 497	4 308
I.	Income from operations		117 026	3 467	79 944	4 308
1.	Revenue from the sale of own products	601				
2.	Revenue from the sale of services	602	112 245	3 462	75 946	4 304
3.	Rental income	603				
4.	Revenue from goods sold	604				
8.	Other income from own performance	609				
9.	Contractual penalties and default interest	641				
10.	Other fines and penalties	642				
11.	Proceeds from disposal of receivables	643				
12.	Proceeds from the sale of materials	644				
13.	Proceeds from the sale of intangible fixed assets	645				
14.	Proceeds from the sale of tangible fixed assets other than land	646			45	
15.	Proceeds from the sale of land	647				
16.	Drawdown of funds	648	1 688			
17.	Other operating income	649	3 094	4	3 953	3

II.	Financial returns		10		1	
1.	Proceeds from the sale of securities and shares	661				
2.	Interest	662				
3.	Exchange rate gains	663	10		1	
4.	Fair value gains on remeasurement	664				
6.	Other financial income	669				
IV.	Revenue from transfers		251 915		293 551	
1.	Transfer revenue of selected central government	671	251 915		293 551	
2.	Transfer revenue of selected local governments	672				
C.	ECONOMIC RESULT					
1.	Profit before tax	-	12 710	224	52	-1 603
2.	Profit or loss for the current financial year	-	12 710	224	52	-1 603

Status and Movement of Assets and Liabilities

Tangible and intangible fixed assets

Accounts 028 and 029 showed an asset disposal of CZK 1,772,891.63 in 2022, mainly IT equipment, PCs, NTBs, stimulators and positioning beds were purchased. The assets were purchased with grant funding in accordance with the budget and grant rules. Accounts 018 and 019 showed a disposal of assets worth CZK 356,940.03. Licences were purchased. Account 013 software showed a disposal of CZK 0, the software purchased was worth a total of CZK 4,455,539.24

Stocks

As of 1 January 2022, the balance in the 112/000 account of the Clinic's material amounted to CZK 0. In 2022, the current year turnover in accounts 112 linen/wear from the opening balance 1/2022 from CZK 189,561.37 to CZK 72,988.13 at the end of 2022, cleaning, drugstore, hygiene from CZK 53,830.66 to CZK 102,659.95, an increase in maintenance from CZK 290.40 to CZK 37,772.05, office supplies from CZK 35,674.08 to CZK 214,375.59, and no change in the balance of CZK 136.25 in medical supplies.

In account 132, from the incidental activity (hospitality), the actual balance for the accounting of inventories in method B was CZK 30,636.04. These are the stocks of the café and the food preparation room.

An allowance of CZK 33,568 was made for books in stock.

Claims

The balance of account No 311 as at 31.12.2022 was CZK 211,234.19. The balance of account 315 - other receivables from operating activities was CZK 12,121 as at January 2022 and the new balance at the end of 2022 was CZK 0. The accounts receivable asset account showed a decrease compared to 2021 from CZK 12,775,586.22 to CZK 9,039,592.91 as of 31 December 2022. The Organization does not record any overdue receivables, is not conducting any enforcement or insolvency proceedings, and has not assigned any receivables for collection.

Commitments

Liabilities to health insurance companies, social security institutions and employees were settled in due time.

Accrual accounts

Deferred expenditure - the balance of account 383 as at 31 December 2022 was CZK 116,047. This item relates to the expenditure of unbilled supplies of goods - e.g. medicines and supplies of services - water, sewerage, gas, security, MRI service, food, etc. Deferred income - the balance of account No. 384 as at 31.12.2022 was CZK 0. Deferred expenses - the balance of account No. 381 as at 31.12.2022 was CZK 803,071.45. Compared to 2021(CZK 106,896.17) there was an increase. Deferred income - the balance of account 385 was CZK 0 as at 31. 12. 2022.

Taxes and reserves

The organisation ended 2022 with a profit. There are no tax arrears as at the balance sheet date of 2022. Due to assessed tax losses from previous years, according to the NIMH's tax advisor, NIMH had no assessed corporate income tax liability. No provision for litigation has been made as NIMH does not record litigation from which potential liabilities could arise.

Funds

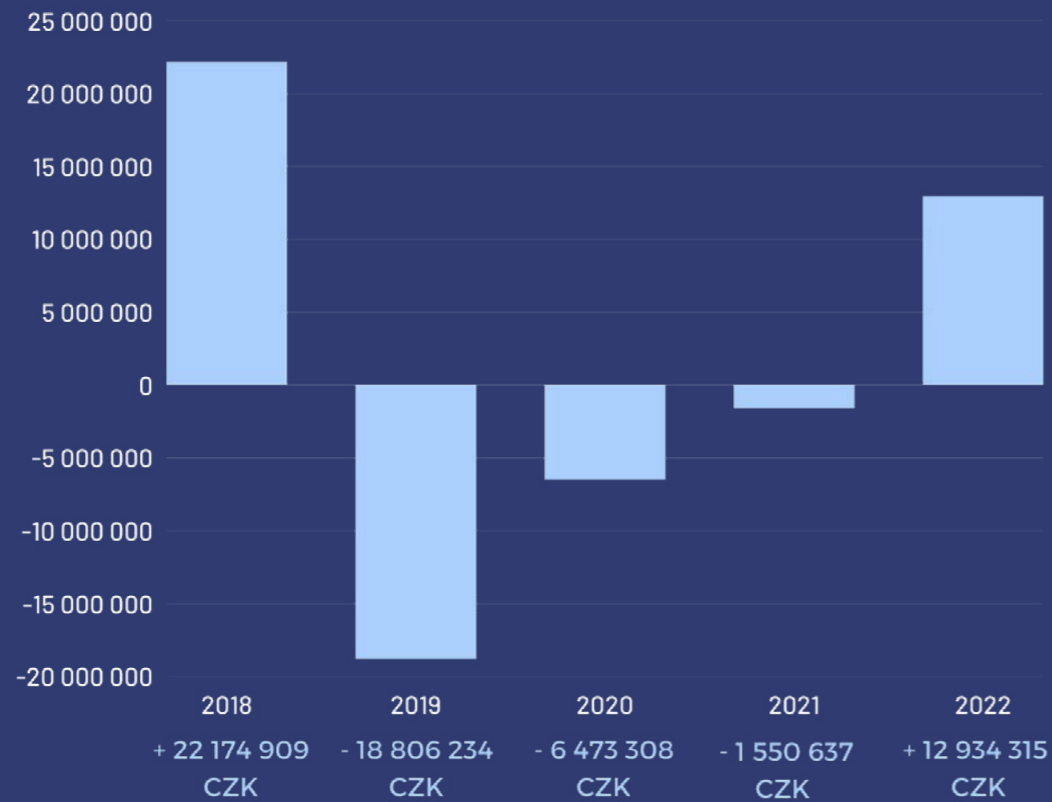
The reserve fund formed from the improved economic result had a balance of CZK 11,543,876.84 as of 31 December 2022, compared to the previous period (CZK 14,782,258.15), which was reduced due to partial coverage of the deteriorated economic result of the previous period in the amount of CZK 3,238,381.31.

As of 31 December 2022, the asset reproduction fund, investment fund had a balance of CZK 9,431,846.35, a slight decrease compared to the previous period (CZK 10,086,274.23). In 2022, we applied the use of the fund to purchase necessary investments with a total value of CZK 1001957.20.

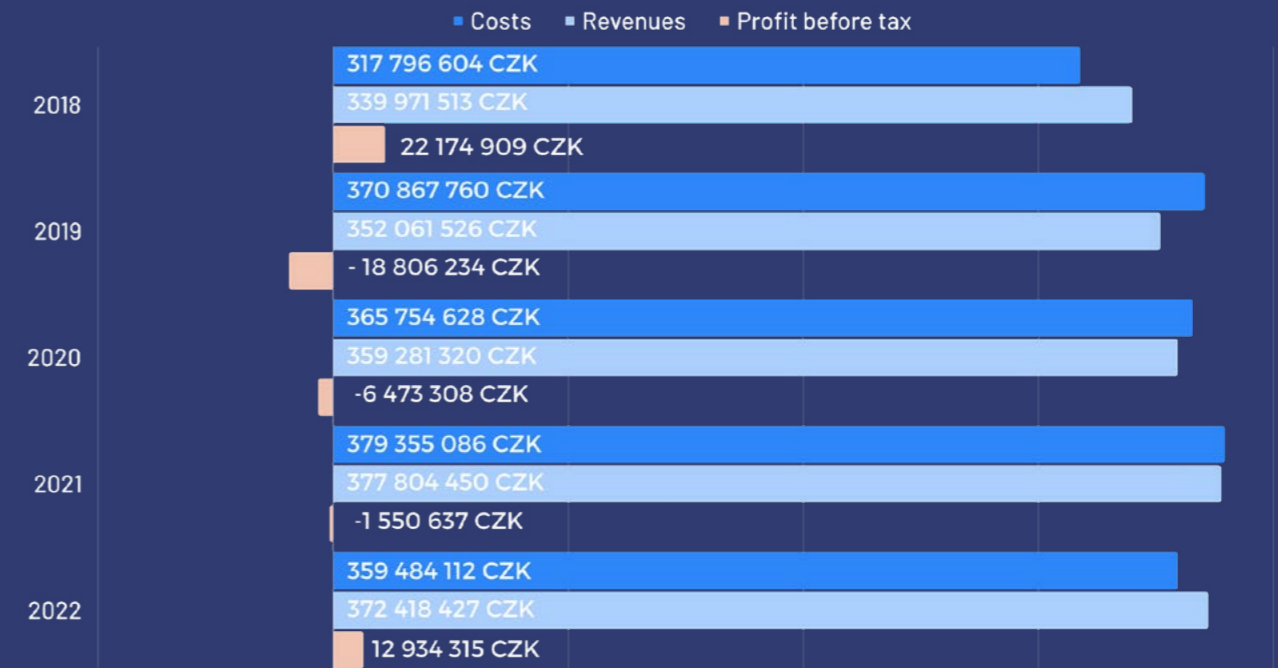
Comparison of Institutional and Grant Funding over the Last 4 Years

Year	Institutional support (IPO - RVO)	Operating allowance	Other forms of institutional support	Total IF	Grant funding (cleared subsidies)	Total transfer settlement	% of Grants	% IF
2022	48 280 254,00	25 000 000,00	0,00	73 280 254,00	178 634 796,00	251 915 050,00	70,91%	29,09%
2021	49 406 773,00	50 000 000,00	11 132 511,13	110 539 284,13	183 012 186,00	293 551 470,00	62,34%	37,66%
2020	53 300 387,00	18 600 000,00	55 754 261,00	127 654 648,00	161 955 479,00	289 610 127,00	55,92%	44,08%
2019	27 864 790,00	25 000 000,00	49 236 000,00	102 100 790,00	160 955 070,00	263 055 860,00	61,19%	38,81%

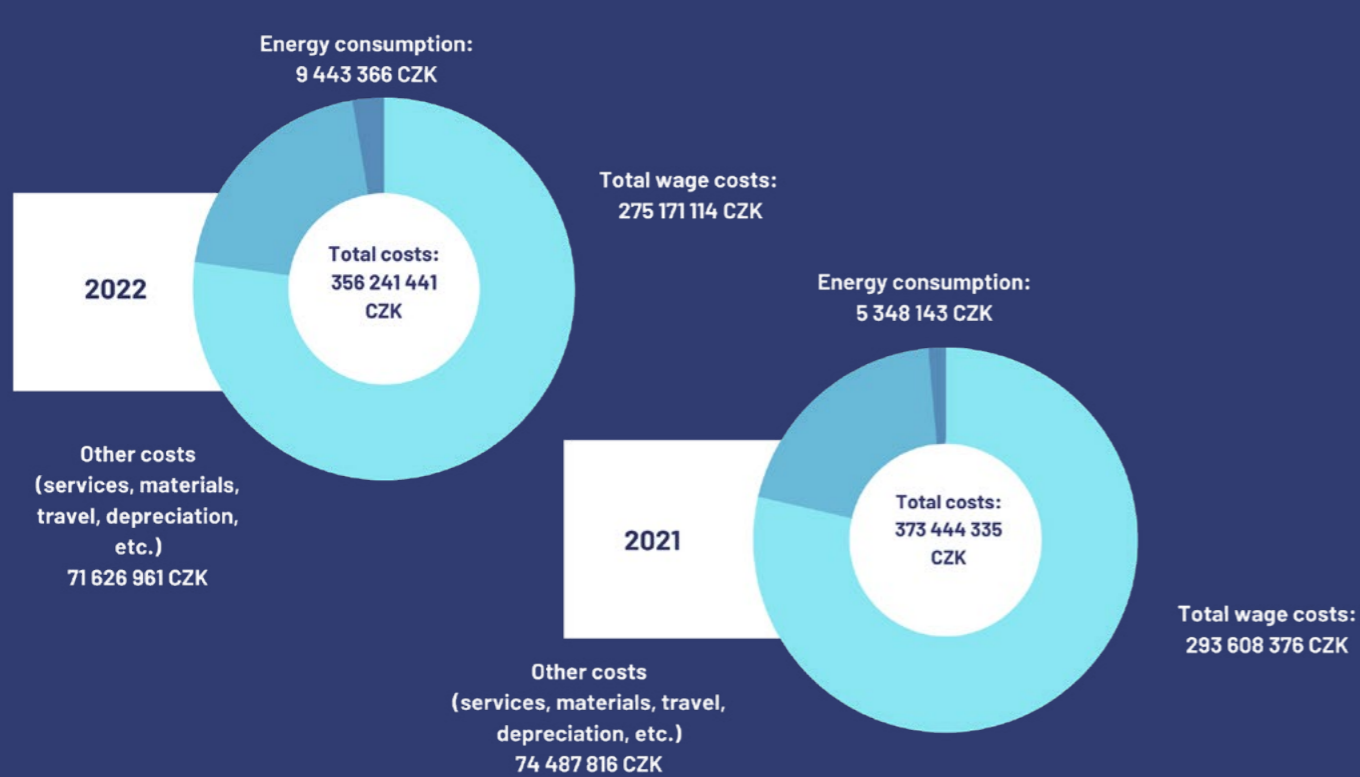
Development of NIMH's Financial Performance Graph, pre-tax amounts



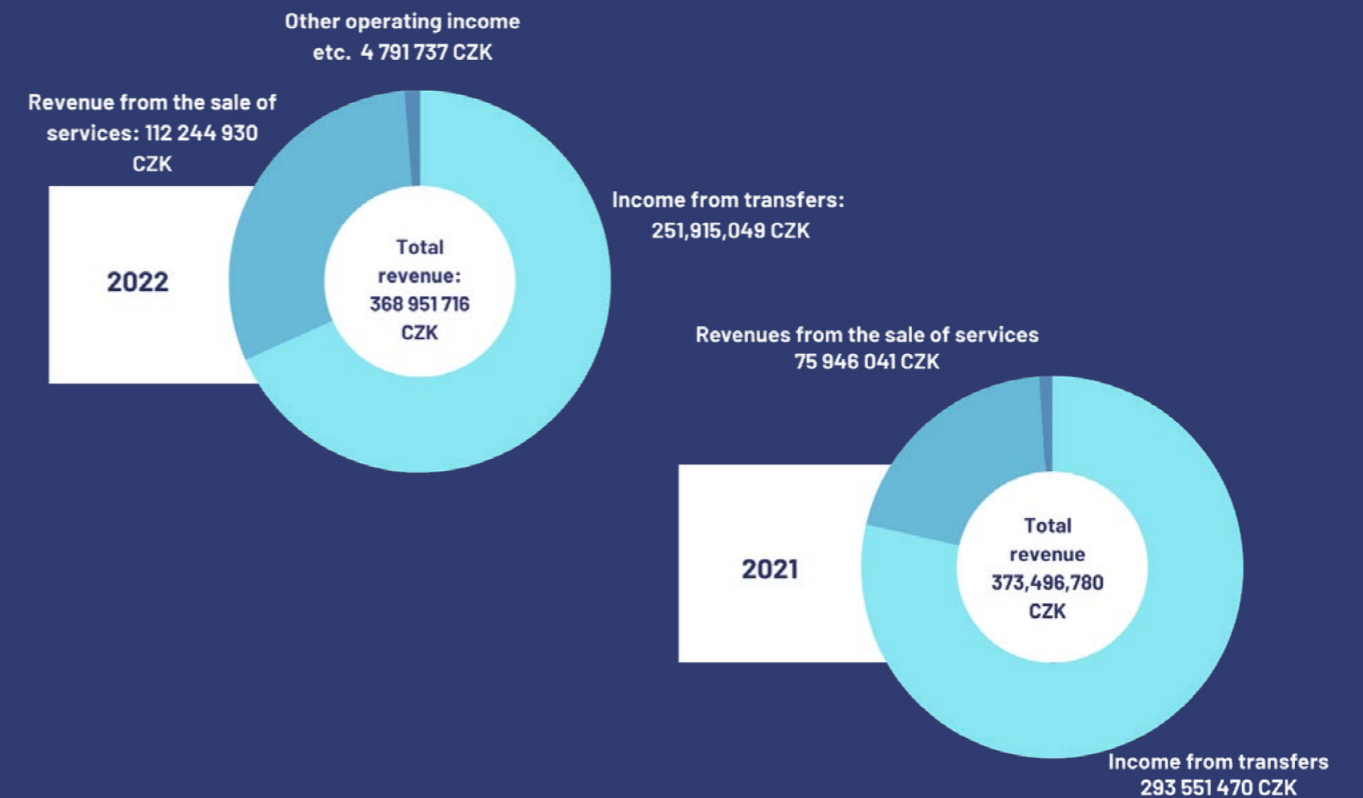
Closer Look at the Development of NIMH's Performance, pre-tax amounts



Comparison of Costs in 2021 and 2022 - Main Activity



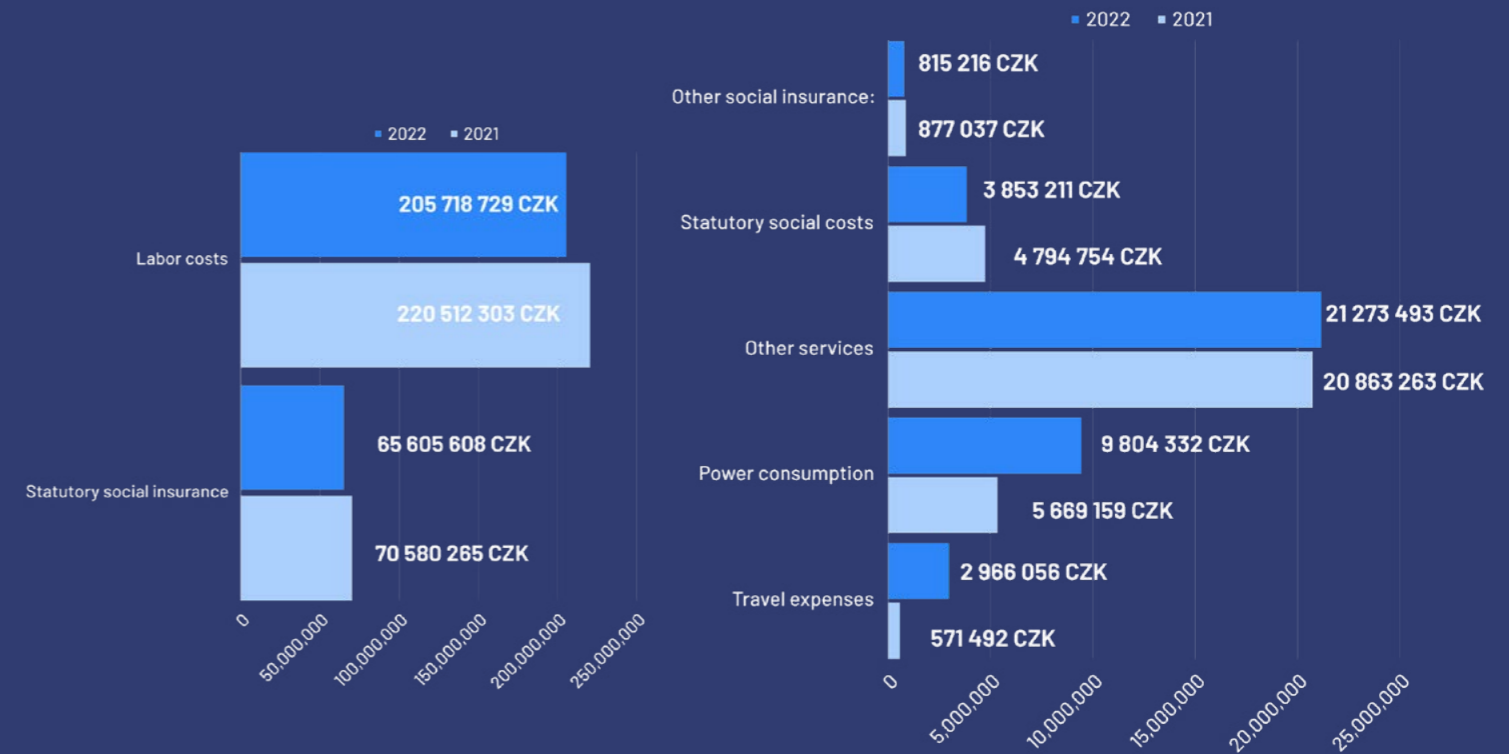
Comparison of Revenues in 2021 and 2022 - Main Activity



Overview of NIMH's Performance over the Last 5 Years (in CZK)

	2018	2019	2020	2021	2022
material consumption	18 924 540	17 075 844	20 292 486	19 319 986	18 583 873
medicines consumption	2 890 752	2 207 749	3 993 781	3 272 878	3 995 916
power consumption	5 748 996	6 826 903	6 021 458	5 669 159	9 804 332
services	18 197 491	21 000 195	21 423 848	20 863 263	21 273 493
labor costs (gross salaries)	172 248 529	203 424 524	218 619 508	220 512 303	205 718 729
depreciation	29 154 292	26 465 700	16 140 842	31 333 034	20 814 938
other costs	73 522 756	96 074 594	83 256 486	81 657 341	83 288 747
Total costs	317 796 604	370 867 760	365 754 628	379 355 086	359 484 112
income from activity	57 488 206	89 003 800	69 659 931	84 251 946	120 493 020
financial returns	3 629	1 865	11 262	1 033	10 358
income from transfers	282 479 678	263 055 860	289 610 127	293 551 470	251 915 049
revenues in total	339 971 513	352 061 526	359 281 320	377 804 450	372 418 427
the result of management before taxation	22 174 909	-18 806 234	-6 473 308	-1 550 637	12 934 315

Comparison of Costs in 2022 and 2021



Human Resources

Staff and Collaborators as of 31. 12. 2022



415 including parental leave and maternity leave
employees

267
agreements

232
internship

23/244
DPČ/DPP

183
in research

6
ZTP (4 FTE)

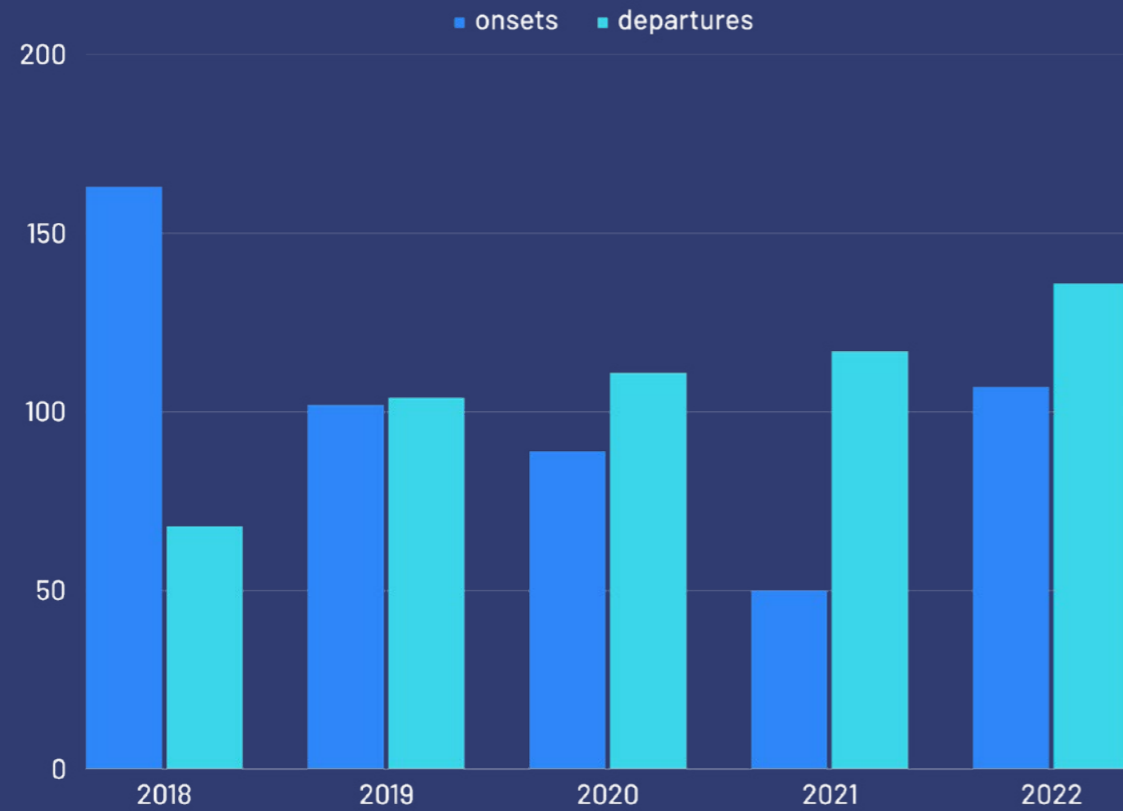
71 % 
women

Salaries 205 718 729 CZK
salaries including other personnel costs

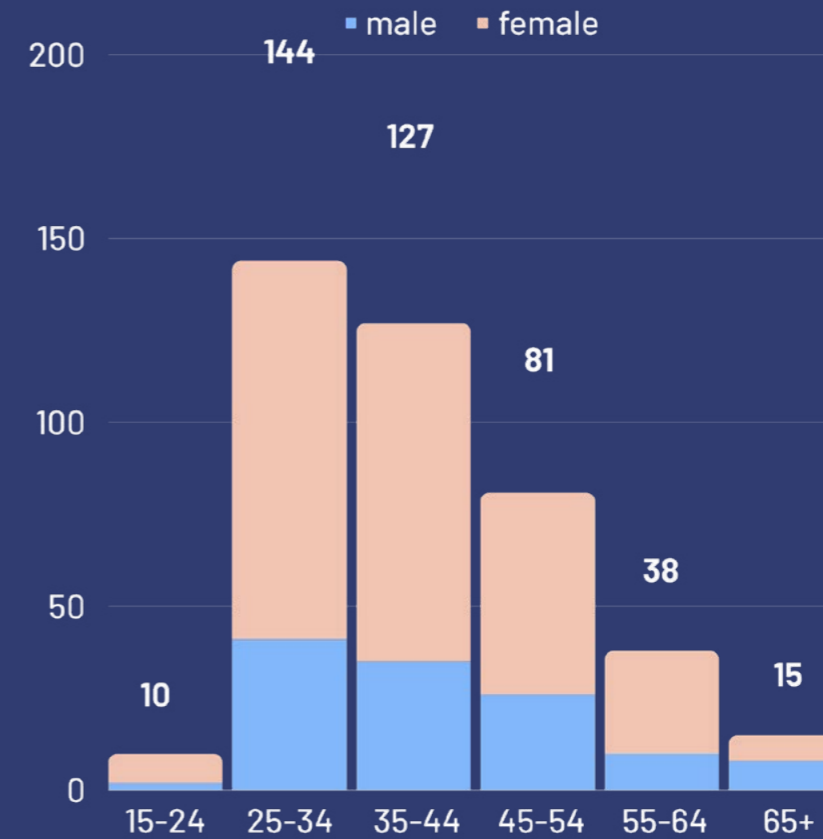
66 420 824 CZK
employer contributions

3 853 211 CZK
contributions to the FKSP

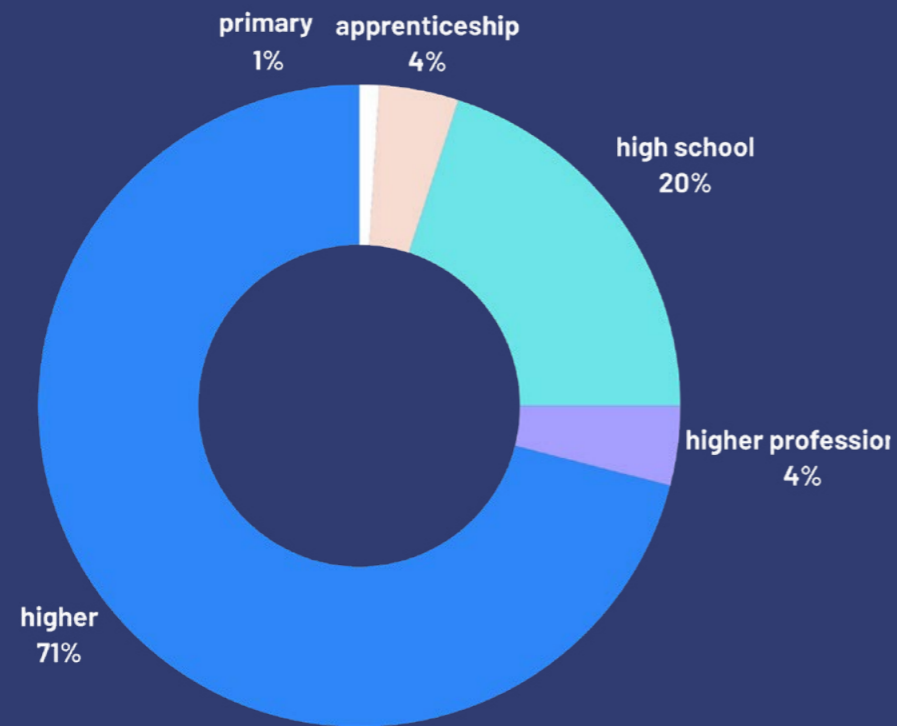
Total Data on the Establishment and Termination of Employment and Service Relationships of Staff



Staff Breakdown by Age and Gender



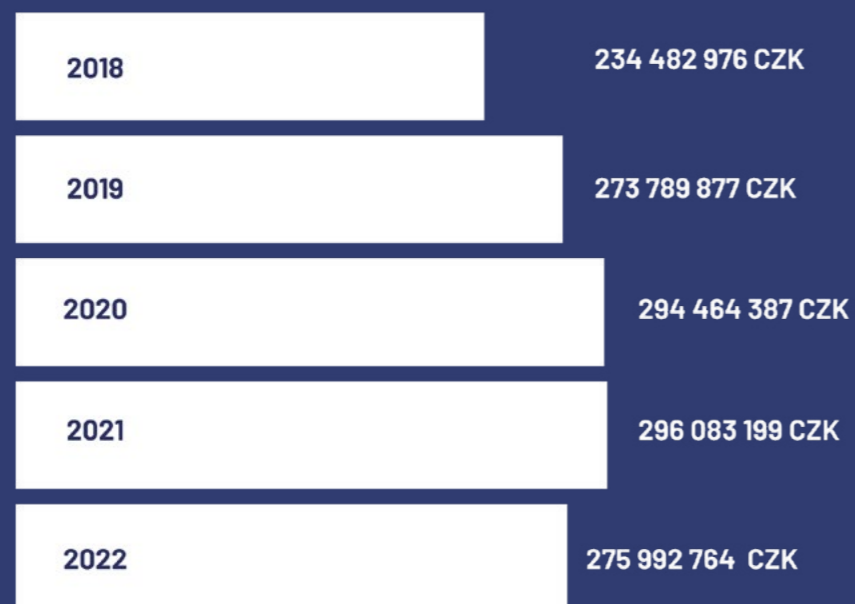
Staff Breakdown by Education



Evolution of Wage Costs over the Last 5 years - Graph



Personnel Costs (including levies)



Average Salary (excluding other personnel costs)



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