

National Institute of Public Health

Šrobárova 48, 100 42 Praha 10, Czech Republic



Annual Report 2012

National Institute of Public Health

Praha, 2013

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1. Mission of the National Institute of Public Health

The National Institute of Public Health (NIPH) has been established by the Ministry of Health as a top-level national agency for research, development, reference, and methodological activities in the domain of public health protection and promotion.

The main terms of reference of the NIPH are:

- Epidemiological analysis of infectious diseases incidence, monitoring characteristics and diversity of microbial agents
- Psychosocial determinants of health
- Environmental health risks
- Occupational health risks
- Health risks from exposure to chemicals in consumer products
- Food safety and health risks of nutrition
- Monitoring environmental impact on human health

The mission of the NIPH is being accomplished mainly through its methodological and reference activities. Within the NIPH there are several dozen national reference laboratories and centers that conduct complex laboratory analyses and evaluations for the purposes of public health protection. The role of some national reference laboratories has been defined by EU regulations while other reference laboratories constitute a methodological basis for public health activities that are guaranteed at the country level.

The research conducted at the NIPH provides a basis for professional activities. The NIPH has been involved in a wide range of international research projects. Since the studies in the area of health promotion and protection are often highly costly, the emphasis is very much on sharing knowledge with other research teams. This approach makes it possible for the NIPH to gain access to top-level technologies that are unavailable in the Czech Republic and to know-how generated by much higher numbers of researchers than available at the NIPH or even in the whole country. It is a challenge for the NIPH to involve more young professionals in research and to increase the number of publications in scientific journals with a high impact factor.

2. Basic Information on the National Institute of Public Health

Director General: Jitka Sosnovcová, MChem

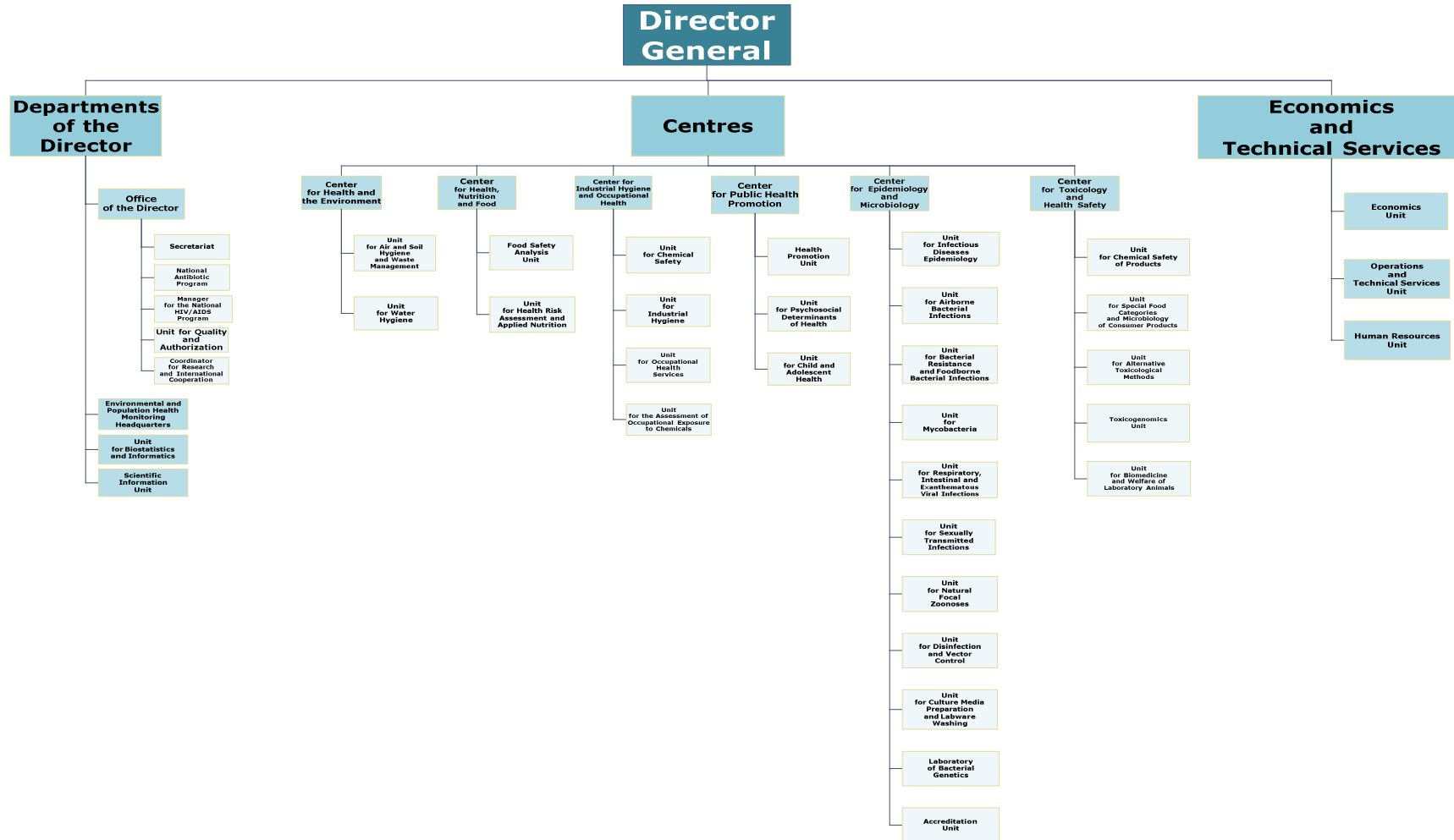
Contact: zdravust@szu.cz

Staff: 438 employees, of them 340 women

55% of employees are tertiary education graduates.

The Institute works with a budget of about CZK 316 million (≈ € 13 million).

Organizational Structure of the National Institute of Public Health in 2012



3. Research Centers and Other Specialized Departments

3.1. Centre for Epidemiology and Microbiology

Head: Pavla Křížová, M.D. Ph.D.

Contact: krizova@szu.cz

Staff: 137 employees

3.1.1. Mission of the Centre

The mission of the Centre for Epidemiology and Microbiology (CEM) is to conduct a wide range of activities in the area of epidemiology and microbiology. The CEM has been significantly involved in the international cooperation, including active participation in the European networks, EU working groups and WHO networks for infectious diseases reporting. The CEM has also been engaged in both national and international surveillance programs and research projects.

The CEM laboratories, including 25 national reference laboratories (NRL), participate in surveillance programs for infectious diseases at both national and international level, carry out highly specialized tests for various clinical settings in the Czech Republic, and engage in implementing new methods and improving the existing procedures in the collaborative microbiology laboratories in the Czech Republic by providing training and checking results of other laboratories. All NRLs need to be accredited to ISO 17025 and ISO 15189 by the Czech Accreditation Institute. The CEM laboratories successfully participate in the international external quality assessment schemes (EQAS, OECD, LabNet, INSTAND, EDQM, QCMD, WHO, Syphilis Serology Proficiency Testing Program, EQA-EMV, Koch Institute, Berlin). Based on the decision of the Ministry of Health of the Czech Republic, the National Reference Centre for Healthcare-Associated Infections (NRC HAI) has been newly added to the CEM.

The External Quality Assessment Scheme in Medical Microbiology organized by the CEM Accreditation Centre of the National Institute of Public Health (CEM AC NIPH) has been accredited to ČSN EN ISO/IEC 17043 since 2010 by the Czech Accreditation Institute under registration number 7001 as part of the NIPH Proficiency Testing Expert Group. Thirty-four proficiency testing areas have been listed for the specialty Medical Microbiology. Most CEM NRLs have been involved in organizing the EQAS.

In 2012, the NIPH has been appointed by the European Centre for Disease Prevention and Control (ECDC) a Coordinating Competent Body (CCB) represented by the NIPH director. Thus, the NIPH has become the main input and output point for the communication with the ECDC and plays a coordinator role in the completion of ECDC tasks. The CCB activities are performed by the CEM. The CCB has its national coordinator. Most ECDC tasks are performed by the NIPH using its own sources and some of them are completed in cooperation with other institutions and bodies. To solve professional, technical, and strategic issues in various areas, 11 National Focal Points for Diseases Groups and 7 National Focal Points for Public Health Functions were nominated. In 2012, the NIPH was granted the status of an ECDC training point for the European Public Health Microbiology (EUPHEM) program.

3.1.2. Research Projects in 2012

- ECDC/2012/038 –EpiConcept
- Analysis of Mobile Genetic Elements Carrying Metallo-Beta-Lactamase Genes in the Czech Republic
- Study of the usability of meningococcal vaccines designed using reverse vaccinology methods in the Czech Republic
- Effect of long-term asymptomatic *Toxoplasma gondii* infection on the immune and clinical condition of HIV-positive patients
- Mapping natural foci of zoonoses transmissible to humans and evaluation of their change in relation to the climate modifications
- Molecular typing of syphilis-causing strains in the Czech Republic and detection of mutations leading to macrolide resistance
- Virological and genetic characteristics of influenza A viruses in relation to the clinical severity of infection
- Selected ion flow tube mass spectrometry studies of volatile compounds emitted by bacterial cultures
- Temporal and spatial patterns of links between weather and cardiovascular diseases
- Development and practical testing of biocides with the focus on improving their efficacy and widening the range of application.
- Development of technology for sensitive and quantitative detection of human immunodeficiency virus (HIV) and optimization of PCR-based diagnostic methods
- Prevalence and the epidemiology of hepatitis E virus in the Czech Republic: serological and molecular biological study
- Tick-borne neuroinfection - clinical manifestations and diagnosis.

3.1.3. Selected Publications in 2012

- ZIEG, J., DUŠEK, J., MAREJKOVÁ, M., LIMROVÁ, P., BLAŽEK, D., PAVLÍČEK, P., et al. Fatal case of diarrhea-associated hemolytic uremic syndrome with severe neurologic involvement. *Pediatrics international*. 2012, 54(1), 166-167. ISSN 1328-8067.
- MARA, K., DECOROSI, F., VITI, C., GIOVANNETTI, L., PAPALEO, M.C., MAIDA, I., PERRIN, E., FONDI, M., VANEECHOUTTE, M., NEMEC, A. et al. Molecular and phenotypic characterization of *Acinetobacter* strains able to degrade diesel fuel. *Research in microbiology*. 2012, 163(3), 161-172. ISSN 0923-2508.
- KŘÍŽOVÁ, L., BONNIN, R.A., NORDMANN, P., NEMEC, A., POIREL, L. Characterization of a multidrug-resistant *Acinetobacter baumannii* strain carrying the blaNDM-1 and blaOXA-23 carbapenemase genes from the Czech Republic. *Journal of antimicrobial chemotherapy*. 2012, 67(6), 1550-1552. ISSN 0305-7453.
- ZANDER, E., NEMEC, A., SEIFERT, H., HIGGINS, P.G. Association between β -lactamase encoding blaOXA-51 variants and DiversiLab rep-PCR based typing of *Acinetobacter baumannii*. *Journal of clinical microbiology*. 2012, 50(6), 1900-1904. ISSN 0095-1137.

- SHESTIVSKA, V., ŠPANĚL, P., DRYAHINA, K., SOVOVÁ, K., SMITH, D., MUSÍLEK, M., NEMEC, A. Variability in concentrations of volatile metabolites emitted by genotypically different strains of *Pseudomonas aeruginosa*. *Journal of applied microbiology*. 2012, 113(3), 701-713. ISSN 1364-5072.
- SMET, A., BOYEN, F., PASMANS, F., BUTAYE, P., MARTENS, A., NEMEC, A., et al. OXA-23-producing *Acinetobacter* species from horses: a public health hazard? *Journal of antimicrobial chemotherapy*. 2012, 67(12), 3009-3010. ISSN 0305-7453.
- NEMEC, A., KŘÍŽOVÁ, L. Carbapenem-resistant *Acinetobacter baumannii* carrying the NDM-1 gene, Czech Republic, 2011. *Eurosurveillance*. 2012, 17(11), pii=20121. ISSN 1560-7917.
- ŘEHULKA, J., MAREJKOVÁ, M., PETRÁŠ, P. Edwardsiellosis in farmed rainbow trout (*Oncorhynchus mykiss*). *Aquaculture research*. 2012, 43(11), 1628-1634. ISSN 1355-557X.
- RŮŽIČKOVÁ, V., PANTŮČEK, R., PETRÁŠ, P., MACHOVÁ, I., KOSTÝLKOVÁ, K., DOŠKAŘ, J. Major clonal lineages in impetigo *Staphylococcus aureus* strains isolated in Czech and Slovak maternity hospitals. *International journal of medical microbiology*. 2012, 302(6), 237-241. ISSN 1438-4221.
- KUNTOVÁ, L., PANTŮČEK, R., RÁJOVÁ, J., RŮŽIČKOVÁ, V., PETRÁŠ, P., MAŠLAŇOVÁ, I., et al. Characteristics and distribution of plasmids in a clonally diverse set of methicillin-resistant *Staphylococcus aureus* strains. *Archives of microbiology*. 2012, 194(7), 607-614. ISSN 0302-8933.
- KURKELA, S., PEBODY, R., KAFATOS, G., ANDREWS, N., BARBARA, C., BRUZZONE, B., BUTUR, D., CAPLINSKAS, S., DAVIDKIN, I., HATZAKIS, A., HELLENBRAND, W., HESKETH, L., NARDONE, A., NĚMEČEK, V., et al. Comparative hepatitis A seroepidemiology in 10 European countries. *Epidemiology and infection*. 2012, 140(12), 2172-2181. ISSN 0950-2688.
- KŘÍŽ, B., MALÝ, M., BENEŠ, Č., DANIEL, M. Epidemiology of tick-borne encephalitis in the Czech Republic 1970-2008. *Vector-borne zoonotic diseases*. 2012, 12(11), 994-999. ISSN 1530-3667.
- THEYS, K., DEFORCHE, K., VERCAUTEREN, J., LIBIN, P., VAN DE VIJVER, D.A.M.C., ALBERT, J., ASJO, B., CAMACHO, R., BALOTTA, C., BRŮČKOVÁ, M., et al. Treatment-associated polymorphisms in protease are significantly associated with higher viral load and lower CD4 count in newly diagnosed drug-naive HIV-1 infected patients. *Retrovirology*. 2012, 9, č. článku 81. ISSN 1742-4690.
- RODRIGUEZ-GRANGER, J., ALVARGONZALEZ, J.C., BERARDI, A., BERNER, R., KUNZE, M., HUFNAGEL, M., MELIN, P., DECHEVA, A., OREFICI, G., POYART, C., TELFORD, J., EFSTRATIOU, A., KILLIAN, M., KŘÍŽOVÁ, P., et al. Prevention of group B streptococcal neonatal disease revisited. The DEVANI European project. *European journal of clinical microbiology and infectious diseases*. 2012, 31(9), 2097-2104. ISSN 0934-9723.
- SCHLEGEL, M., RADOSA, L., ROSENFELD, U.M., SCHMIDT, S., TRIEBENBACHER, C., LÖHR, P.W., FUCHS, D., HEROLDOVÁ, M., JÁNOVÁ, E., STANKO, M., MOŠANSKÝ, L., FRIČOVÁ, J., PEJČOCH, M., et al. Broad geographical distribution and high genetic diversity of shrew-borne Seewis hantavirus in Central Europe. *Virus genes*. 2012, 45(1), 48-55. ISSN 0920-8569.

- KUBÁNEK, M., ŠRAMKO, M., BERENOVÁ, D., HULÍNSKÁ, D., HRBÁČKOVÁ, H., MALUŠKOVÁ, J., et al. Detection of *Borrelia burgdorferi* sensu lato in endomyocardial biopsy specimens in individuals with recent-onset dilated cardiomyopathy. *European journal of heart failure*. 2012, 14(6), 588-596. ISSN 1388-9842.
- BOSÁK, J., LEIBLOVÁ, P., ŠMARDA, J., DĚDIČOVÁ, D., ŠMAJS, D. Novel colicin F-Y of *Yersinia frederiksenii* inhibits pathogenic *Yersinia* strains via YiuR-mediated reception, tonB import, and cell membrane pore formation. *Journal of bacteriology*. 2012, 194(8), 1950-1959. ISSN 0021-9193.
- VOTÝPKA, J., KASAP, O.E., VOLF, P., KODYM, P., ALTEN, B. Risk factors for cutaneous leishmaniasis in the Cukurova region, Turkey. *Transactions of the Royal Society of Tropical Medicine and Hygiene*. 2012, 106(3), 186-190. ISSN 0035-9203.
- KURBATOVA, E.V., CAVANAUGH, J.S., SHAH, N.S., WRIGHT, A., KIM, H., METCHOCK, B., VAN DEUN, A., BARRERA, L., BOULAHBAL, F., RICHTER, E., MARTIN-CASABONA, N., ARIAS, F., ZEMANOVÁ, I., et al. Rifampicin-resistant *Mycobacterium tuberculosis*: susceptibility to isoniazid and other anti-tuberculosis drugs. *International journal of tuberculosis and lung disease*. 2012, 16(3), 355-357. ISSN 1027-3719.
- FRYNTA, D., ELIÁŠOVÁ, B., FRAŇKOVÁ, M., AULICKÝ, R., RÖDL, P., STEJSKAL, V. Production of UV-light-detectable faeces from house mice (*Mus musculus domesticus*) after consumption of encapsulated fluorescent pigment in monitoring bait. *Pest management science*. 2012, 68(3), 355-361. ISSN 1526-498X.
- DANIEL, M., STEKOLNIKOV, A. A. Chigger mites (Acari, Trombiculidae) of Turkey. *Zootaxa*. 2012, 3216, 1-104. ISSN 1175-5326.
- VAŇOUSOVÁ, D., ZÁKOUCKÁ, H., JILICH, D., ROZSYPAL, H., STAŇKOVÁ, M., ŽUFANOVÁ, S., et al. First detection of *Chlamydia trachomatis* LGV biovar in the Czech Republic, 2010-2011. *Eurosurveillance*. 2012, 17(2), s. 20055. ISSN 1560-7917.
- CLAUS, H., JÖRDENS, M., KRÍŽOVÁ, P., MUSÍLEK, M., JARVA, H., PAWLIK, M.C., et al. Capsule null locus meningococci: typing of antigens used in an investigational multicomponent meningococcus serogroup B vaccine. *Vaccine*. 2012, 30(2), 155-160. ISSN 0264-410X.
- JILICH, D., HAVLÍČKOVÁ, M., VESELÝ, D., ROZSYPAL, H., JIŘINCOVÁ, H., STAŇKOVÁ, M., KYNČL, J., MALÝ, M., et al. Immunogenicity and safety of pandemic H1N1 2009 influenza vaccine for HIV-1 patients. *Acta virologica*. 2012, 56(4), 349-351. ISSN 0001-723X.
- FLASAROVÁ, M., POSPÍŠILOVÁ, P., MIKALOVÁ, L., VALIŠOVÁ, Z., DASTYCHOVÁ, E., STRNADEL, R., KUKLOVÁ, I., WOZNICOVÁ, V., ZÁKOUCKÁ, H., et al. Sequencing-based molecular typing of *Treponema pallidum* strains in the Czech Republic: all identified genotypes are related to the sequence of the SS14 strain. *Acta dermato-venerologica*. 2012, 92(6), 669-674. ISSN 0001-5555.
- SLANÝ, M., JEŽEK, P., FIŠEROVÁ, V., BODNÁROVÁ, M., ŠTORK, J., HAVELKOVÁ, M., et al. *Mycobacterium marinum* infections in humans and tracing of its possible environmental sources. *Canadian journal of microbiology*. 2012, 58(1), 39-44. ISSN 0008-4166.

- MELTER, O., ARVAND, M., VOTÝPKA, J., HULÍNSKÁ, D. Bartonella quintana transmission from mite to family with high socioeconomic status. *Emerging infectious diseases*. 2012, 18(1), 163-165. ISSN 1080-6040.
- RYBA, S., TÁČNER, J., HAVLÍČKOVÁ, M., STOPKA, P. Stability of influenza virus as evaluated by integrity of its RNA. *Acta virologica*. 2012, 56(2), 125-128. ISSN 0001-723X.
- MAREJKOVÁ, M., ROHÁČOVÁ, H., REISINGEROVÁ, M., PETRÁŠ, P. An imported case of bloody diarrhea in the Czech Republic caused by a hybrid enteroaggregative hemorrhagic *Escherichia coli* (EAHEC) O104:H4 strain associated with the large outbreak in Germany, May 2011. *Folia microbiologica*. 2012, 57(2), 85-89. ISSN 0015-5632.
- ARIENTOVÁ, S., SCHRAMLOVÁ, J., AMBROŽOVÁ, H., MAREŠOVÁ, V., HOLUB, M. Electron microscopy in the diagnosis of viral gastroenteritis in hospitalised children in the Czech Republic. *Folia microbiologica*. 2012, 57(3), 177-182. ISSN 0015-5632.
- VAŇOUSOVÁ, D., ČERNÝ, R., ZÁKOUCKÁ, H., KOZNER, P., JILICH, D., LISÝ, J., et al. Neurosyphilis. *Česká a slovenská neurologie a neurochirurgie*. 2012, 75(3), 297-302. ISSN: 1210-7859. (In Czech)

3.2. Centre for Industrial Hygiene and Occupational Health

Head: Michael Vít, M.D. Ph.D. (since 18 November 2012)

Beatrica Dlouhá, M.D. (until 17 November 2012)

Contact: michael.vit@szu.cz

Staff: 53 employees

3.2.1. Mission of the Centre

The Centre for Industrial Hygiene and Occupational Health of the NIPH acts as a scientific, research, and expert basis of the Ministry of Health of the Czech Republic and State Public Health Inspection in the area of health protection and promotion at work. It focuses primarily on health risk assessment of chemical, physical, and psychosocial hazards in the workplace and protection from this risk.

The activities of the Centre in 2012 included complex laboratory analyses for the purposes of research, reference, and expert opinion, provision of background information, analyses helpful in problem solving, and cooperation in EU legislation transposition in the area of work safety and health protection at work into the national legislative system and in its implementation into practice in the Czech Republic.

3.2.2. Research Projects in 2012

- The role of adrenergic signaling and oxidative stress in molecular mechanisms of cardioprotection induced by chronic hypoxia
- Degradation products of protein adducts in urine as a new type of biomarkers in toxicology

- Studying optimal development longitudinally: potential of Prague and Brno studies on lifespan development
- Development of an inspection toolkit for targeted interventions on occupational health and safety (psychosocial risks)

3.2.3. Selected Publications in 2012

- EHLER, E., RIDZOŇ, P., NAKLÁDALOVÁ, M., URBAN, Pavel, MAZANEC, R., FENCLOVÁ, Zdenka, MATULOVÁ, H., OTRUBA, P., LATTA, J. Neurophysiological diagnosis of the ulnar nerve damage at the elbow. *Česká a slovenská neurologie a neurochirurgie*. 2012, 75(3), 320-325. ISSN 1210-7859. (in Czech)
- EHLER, E., RIDZOŇ, P., NAKLÁDALOVÁ, M., URBAN, Pavel, MAZANEC, R., LATTA, J. Motor neurography of the ulnar nerve – differences between the recordings from ADM and FDI. *Česká a slovenská neurologie a neurochirurgie*. 2012, 75(4), 513. ISSN 1210-7859. (in Czech)
- EHLER, E., RIDZOŇ, P., URBAN, Pavel, MAZANEC, R., NAKLÁDALOVÁ, M., PROCHÁZKA, Bohumír, LATTA, J. Ulnar nerve conduction studies - differences in registration from ADM or FDI. *European journal of neurology*. 2012, 19(Suppl.1), 787. ISSN 1351-7859.
- FENCLOVÁ, Zdenka, URBAN, Pavel, PELCLOVÁ, D., NAVRÁTIL, T. Neurological occupational diseases in the Czech Republic in 1994-2009. *Česká a slovenská neurologie a neurochirurgie*. 2012, 75(1), 70-74. ISSN 1210-7859. (in Czech)
- FENCLOVÁ, Zdenka, URBAN, Pavel, PELCLOVÁ, D., VOŘÍŠKOVÁ, Michaela, HAVLOVÁ, Dana. Occupational diseases reported in the Czech Republic in 2011. *Praktický lékař*. 2012, 92(4), 214-220. ISSN 0032-6739. (in Czech)
- JIRÁSKOVÁ, A., NOVOTNÝ, J., NOVOTNÝ, L., VODIČKA, P., PARDINI, B., NACCARATI, A., SCHWERTNER, H.A., HUBÁČEK, J.A., PUNČOCHÁŘOVÁ, L., ŠMERHOVSKÝ, Zdeněk, VÍTEK, L. Association of serum bilirubin and promoter variations in the HMOX1 and UGT1A1 genes with sporadic colorectal cancer. *International journal of cancer*. 2012, 131(7), 1549-1555. ISSN 0020-7136.
- JIŘÍK, V., PEKÁREK, Luděk, JANOUT, V., TOMÁŠKOVÁ, H. Association between childhood leukaemia and exposure to power-frequency magnetic fields in Middle Europe. *Biomedical and environmental sciences*. 2012, 25(5), 597-601. ISSN 0895-3988.
- KRÁLÍKOVÁ, E., KOŽENÁ, Ludmila, RAMEŠ, J. Results of Bortner and Eysenck questionnaire in the fifth grade students at the 1st Medical School, Charles University. *Československá psychologie*. 2012, 56(2), 97-105. ISSN 0009-062X. (in Czech)
- LINHART, I., MRÁZ, Jaroslav, DABROWSKÁ, Ludmila, MALIŠ, M., KROUŽELKA, J., KOŘÍNEK, M. Vinylphenylmercapturic acids in human urine as biomarkers of styrene ring oxidation. *Toxicology letters*. 2012, 213(2), 260-265. ISSN 0378-4274.
- LINHART, I., MRÁZ, Jaroslav, HANZLÍKOVÁ, Iveta, ŠILHÁNKOVÁ, A., FRANTÍK, Emil, HIML, M. Carcinogenic 3-nitrobenzanthrone but not 2-nitrobenzanthrone is metabolised to an unusual mercapturic acid in rats. *Toxicology letters*. 2012, 208(3), 246-253. ISSN 0378-4274.
- NECKÁŘ, J., BOUDÍKOVÁ, A., MANDÍKOVÁ, P., ŠTĚRBA, M., POPELOVÁ, O., MIKŠÍK, I., DABROWSKÁ, Ludmila, MRÁZ, Jaroslav, GERŠL, V., KOLÁŘ, F. Protective effects of dexrazoxane against acute ischaemia/reperfusion injury of rat hearts.

Canadian journal of physiology and pharmacology. 2012, 90(9), 1303-1310. ISSN 0008-4212.

- SLÝŠKOVÁ, J., NACCARATI, A., PARDINI, B., POLÁKOVÁ, V., VODIČKOVÁ, Ludmila, ŠMERHOVSKÝ, Zdeněk, LEVÝ, M., LIPSKÁ, L., LIŠKA, V., VODIČKA, P. Differences in nucleotide excision repair capacity between newly diagnosed colorectal cancer patients and healthy controls. *Mutagenesis*. 2012, 27(2), 225-232. ISSN 0267-8357.
- TOMÁŠKOVÁ, H., JIRÁK, Z., ŠPLÍCHALOVÁ, A., URBAN, Pavel. Cancer incidence in Czech black coal miners in association with coalworkers' pneumoconiosis. *International journal of occupational medicine and environmental health*. 2012, 25(2), 137-144. ISSN 1232-1087.

3.3. Center for Public Health Promotion

Head: Marie Nejedlá, M.D. (since 21 May 2013)

Věra Kernová, M.D. (until 18 May 2013)

Contact: marie.nejedla@szu.cz

Staff: 38 employees

3.3.1. Mission of the Centre

The Centre has the mission to conduct professional, guidance, research, education, reference, coordination, expert opinion, counseling, and consultation activities in the areas of health promotion, primary prevention of chronic non-communicable diseases, and health of children and adolescents. The Centre has been involved primarily in policy making, law making, and providing background information to adopt position on bills and health protection and promotion strategies. Specialists of the Centre participate in professional committees and other bodies, contribute to professional discussions, etc.. Researchers of the Centre have been involved in the completion of national projects (supported by the Internal Grant Agency of the Ministry of Health of the Czech Republic IGA, Science Foundation of the Czech Republic GA ČR, and Grant Agency of the Academy of Sciences of the Czech Republic GA AV ČR), international projects, and health promotion intervention projects supported by the Ministry of Agriculture and the Ministry of Education, Youth, and Sports. Both undergraduate lecturers (particularly at the 3rd Faculty of Medicine, Charles University) and postgraduate lecturers of the Centre have been involved in education and supervision activities, accredited training courses, and workshops.

3.3.2. Research Projects in 2012

- Optimizing delivery of health care interventions
- Tackling the gradient: Applying public health policies to effectively reduce health inequalities amongst families and children
- Monitoring alcohol and tobacco consumption
- CROSSING BRIDGES - Developing methodologies and building capacity to advance the implementation of HiAP and achieve health equity

- EQUITY ACTION- Joint Action on Health Inequalities
- Developing Competencies for Health Promotion Capacity Building in Europe
- Good practice on brief interventions to address alcohol use disorders in primary health care, workplace health services, emergency care, and social services
- Studying optimal development longitudinally: potential of Prague and Brno studies on life-span development

3.3.3. Selected Publications in 2012

- GALLUZZO, L., SCAFATO, E., MARTIRE, S., ANDERSON, P., COLOM, J., SEGURA, L., MCNEILL, A., SOVINOVA, H., et al. Alcohol and older people. The European project VINTAGE: Good health into older age. Design, methods and major results. *Annali dell'Istituto superiore di sanità*. 2012, 48(3), 221-231. ISSN 0021-2571.
- PALACIO-VIEIRA, J., SEGURA, L., GUAL, A., COLOM, J., AHLSTRÖM, S., RADOŠ KRNEL, S., MCNEILL, A., SOVINOVA, H., et al. Good practices for the prevention of alcohol harmful use amongst the elderly in Europe, the VINTAGE project. *Annali dell'Istituto superiore di sanità*. 2012, 48(3), 248-255. ISSN 0021-2571.
- VIGNEROVÁ, J., PAULOVÁ, M., SHIVER, L.H., RIEDLOVÁ, J., SCHNEIDEROVÁ, D., et al. The prevalence of wasting in Czech infants: a comparison of the WHO child growth standards and the Czech growth references. *Maternal and child nutrition*. 2012, 8(2), 249-258. ISSN 1740-8695.
- MAREŠ, J., KEBZA, V. Evidence-based psychology. *Československá psychologie*. 2012, 56(2), 178-193. ISSN 0009-062X. (In Czech)

3.4. Centre for Toxicology and Health Safety

Head: Dagmar Jírová, M.D. Ph.D.

Contact: jirova@szu.cz

Staff: 58 employees

3.4.1. Mission of the Centre

Research activities of the Centre are focused on the areas covered by Act No. 258/2000 on public health protection and related regulations addressing the safety requirements for consumer products and their ingredients. Toxicological endpoints such as local toxicity (skin and eye irritation, skin absorption and penetration, and skin sensitization), organ system toxicity such as acute and repeat dose toxicity, genotoxicity, mutagenicity, carcinogenicity, inhalation toxicity, microbiological safety, and others are investigated in relation to the expected route of exposure. The toxicological evaluation is accompanied by top chemical analyses identifying chemical contaminants in consumer products such as food contact materials, toys, children products, cosmetics, food additives, special categories of food, food, medical devices, chemicals and chemical preparations, and other materials coming into contact with the human body. Toxicological methods comprise primarily alternative toxicological methods in vitro avoiding animal experiments, including QSAR applications. According to Directive 2010/63/EU on the protection of animals used for scientific purposes, the Centre was nominated as a suitable laboratory to carry out validation studies and became

part of the European Union Network of Laboratories for the Validation of Alternative Methods (EU-NETVAL).

Experts of the Centre for Toxicology and Health Safety of the NIPH represent the Czech Republic in a number of scientific, expert, and regulatory bodies of the European Commission and of the Council of Europe in the area of consumer products. The national reference centers and laboratories and their experts assist the Ministry of Health in harmonization of the legislation, they support decision making of the Ministry of Health by scientific expertise and by laboratory analyses and participate in the in-market control conducted by control authorities in the Czech Republic.

Research units of the Centre are integral parts of the NIPH reference centers and laboratories. They develop new test methods, conduct validation of these methods, cooperate on a national and international basis with other scientific institutes and laboratories (in particular JRC: Joint Research Centre of the EC), participate in national and international research projects and in ring tests and proficiency tests organized by the national or international accreditation and standardization bodies, such as CEN, ISO, EDQM, and others. The NIPH, namely the Centre for Toxicology and Health Safety, is recognized and nominated by the Czech Institute for Standards as the center for technical standardization in the area of cosmetics and children products. Laboratories of the Centre are accredited to ČSN EN ISO/IEC 17025 and conduct a number of physical, chemical, microbiological, and toxicological tests on request from control authorities, companies, organizations including NGOs, consumer associations, or associations of manufacturers and/or private subjects.

Activities of the Centre also cover basic research in the area of personalized medicine, e.g. evaluation of tools for predictive testing, investigation of mechanisms of action of anticancer drugs, and search for markers useful in individualized therapy of human cancers. For such research, facilities equipped with genetic analyzers, real-time PCR and DNA sequencing instruments, tissue culture laboratories, and laboratories certified for the manipulation of genetically modified organisms are routinely used.

Professional expertise of scientific units and reference laboratories is provided to new scientists and health professionals during their undergraduate and postgraduate education, training courses and consultations.

3.4.2. Research Projects in 2012

- Molecular-biological and histopathological characteristics of tumor infiltrating lymphocytes as instrument of prediction of risk of early colorectal cancer recurrence
- Rationalization of strategy of oncological treatment of radically inoperable colorectal liver metastases
- Aqueous nanodispersions for functional surface treatment
- Role of caspase-2 in apoptosis induction by taxanes in breast cancer cells
- DNA repair and sporadic colorectal cancer
- Molecular DNA repair characteristics in CRC tumor tissue
- Analysis of the role of genetic factors in pancreatic cancer risk and prognosis
- Centre of drug-dietary supplements interactions and nutrigenetics
- Identification of potential disruptors of endocrine system from products of everyday use

- Study of mechanism of action of biomarkers correlating with breast cancer therapy outcome
- Encapsulated Nanodispersion Biocidal Systems

3.4.3. Selected Publications in 2012

- MOHELNÍKOVÁ-DUCHOŇOVÁ, B., OLIVERIUS, M., HONSOVÁ, E., SOUČEK, P. Evaluation of reference genes and normalization strategy for quantitative real-time PCR in human pancreatic carcinoma. *Disease markers*. 2012, 32(3), 203-210. ISSN 0278-0240.
- HUBACKOVA, M., VACLAVIKOVA, R., EHRLICHOVA, M., MRHALOVA, M., KODET, R., KUBACKOVA, K., et al. Association of superoxide dismutases and NAD(P)H quinone oxidoreductases with prognosis of patients with breast carcinomas. *International journal of cancer*. 2012, 130(2), 338-348. ISSN 0020-7136.
- OTOVA, B., OJIMA, I., VACLAVIKOVA, R., HRDY, J., EHRLICHOVA, M., SOUCEK, P., et.al. Second-generation taxanes effectively suppress subcutaneous rat lymphoma: role of disposition, transport, metabolism, in vitro potency and expression of angiogenesis genes. *Investigational new drugs*. 2012, 30(3), 991-1002. ISSN 0167-6997.
- HLAVATA, I., MOHELNIKOVA-DUCHONOVA, B.,VACLAVIKOVA, R., LISKA, V., PITULE, P., NOVAK, P., et al. The role of ABC transporters in progression and clinical outcome of colorectal cancer. *Mutagenesis*. 2012, 27(2), 187-196. ISSN 0267-8357.
- EHRLICHOVÁ, M., OJIMA, I., CHEN, J., VÁCLAVÍKOVÁ, R., NĚMCOVÁ-FÜRSTOVÁ, V., VOBOŘILOVÁ, J., et al. Transport, metabolism, cytotoxicity and effects of novel taxanes on the cell cycle in MDA-MB-435 and NCI/ADR-RES cells. *Naunyn-Schmiedebergs archives of pharmacology*. 2012, 385(10), 1035-1048. ISSN 0028-1298.
- CERIDONO, M., TELLNER, P., BAUER, D., BARROSO, J., ALÉPÉE, R., CORVI, R., DESMEDT, A., FELLOWS, M.D., GIBBS, N.K., HEISLER, E., JACOBS, A., JÍROVÁ, D., at al. The 3T3 neutral red uptake phototoxicity test: Practical experience and implications for phototoxicity testing - the report of an ECVAM-EFPIA workshop. *Regulatory toxicology and pharmacology*. 2012, 63(3), 480-488. ISSN 0273-2300.
- VACLAVIKOVA, R., EHRLICHOVA, M., HLAVATA, I., PECHA, V., KOZEVIKOVOVA, R., TRNKOVA, M., et al. Detection of frequent ABCB1 polymorphisms by high-resolution melting curve analysis and their effect on breast carcinoma prognosis. *Clinical chemistry and laboratory medicine*. 2012, 50(11), 1999-2007. ISSN 1434-6621.
- JÍRA, D., JANOUŠEK, S., PIKULA, J., VITULA, F., KEJLOVÁ, K. Toxicity hazard of organophosphate insecticide malathion identified by in vitro methods. *Neuroendocrinology letters*. 2012, 33(Suppl. 3), 53-59. ISSN 0172-780X.
- SLÝŠKOVÁ, J., KORENKOVÁ, V., COLLINS, A.R., PROCHÁZKA, P., VODIČKOVÁ, L., ŠVEC, J., LIPSKÁ, L., LEVÝ, M., SCHNEIDEROVÁ, M., LIŠKA, V., HOLUBEC, L., KUMAR,R., SOUČEK, P., et al. Functional, genetic, and epigenetic aspects of base and nucleotide excision repair in colorectal carcinomas. *Clinical cancer research*. 2012, 18(21), 5878. ISSN 1078-0432.
- LO, W.S., LIM, Y.P., CHEN, C.C., HSU, C.C., SOUČEK, P., YUN, C.H., et al. A dual function of the furanocoumarin chalepensin in inhibiting Cyp2a and inducing Cyp2b in

mice: the protein stabilization and receptor-mediated activation. *Archives of toxicology*. 2012, 86(12), 1927-1938. ISSN 0340-5761.

- HOULSTON, R.S., MEMBERS OF COGENT, SOUČEK, P. COGENT (Colorectal cancer GENEtics) revisited. *Mutagenesis*. 2012, 27(2), 143-151. ISSN 0267-8357.
- LANDI, D., GEMIGNANI, F., PARDINI, B., NACCARATI, A., GARRITANO, S., VODIČKA, P., VODIČKOVÁ, L. et al. Identification of candidate genes carrying polymorphisms associated with the risk of colorectal cancer by analyzing the colorectal mutome and microRNAome. *Cancer*. 2012, 118(19), 4670-4680. ISSN 0008-543X.
- GATĚK, J., VRÁNA, D., MELICHAR, B., VAŽAN, P., KOTOČOVÁ, K., KOTOČ, J., et al. Significance of the resection margin and risk factors for close or positive resection margin in patients undergoing breast-conserving surgery. *Journal of BUON*. 2012, 17(3), 452-456. ISSN 1107-0625.
- GATĚK, J., VRÁNA, D., HNÁTEK, L., BAKALA, J., DUDEŠEK, B., DUBEN, J., et al. Sentinel node biopsy and neoadjuvant chemotherapy in the treatment of breast cancer. *Journal of BUON*. 2012, 17(2), 265-270. ISSN 1107-0625.
- NACCARATI, A., POLÁKOVÁ, V., PARDINI, B., VODIČKOVÁ, L., HEMMINKI, K., KUMAR, R., et al. Mutations and polymorphisms in TP53 gene - an overview on the role in colorectal cancer. *Mutagenesis*. 2012, 27(2), 211-218. ISSN 0267-8357.

3.5. Centre for Health and the Environment

Head: Helena Kazmarová, M.D.

Contact: h.kazmarova@szu.cz

Staff: 39 employees

3.5.1. Mission of the Centre

The Centre focuses primarily on the environmental impact on human health, more precisely on its detection, data interpretation and analysis, and identification of remedial measures. The point of departure is the systematic study, and acquisition and assessment of the state-of-the-art knowledge in the areas of (drinking, bottled, and recreational) water management, soil management, waste management, and (indoor and outdoor) air management along with the Centre's own in-depth research into the impact of environmental pollution on human health to make it possible to estimate the exposure of the general population and defined population groups to chemical and biological factors from the environment with more accuracy.

Based on the evidence gathered, health risks are identified and environmental quality requirements are formulated, including bills. NIPH position papers are prepared and new procedures and technologies are tested for health impact, e.g. in drinking water treatment, testing products for use in contact with drinking water, waste hazard assessment, and analysis of old environmental burdens. Studies are conducted to test new technologies in healthcare, social care settings, and old people's homes (VACUMED), anaerobic technologies, etc.. Guidelines for the detection of indoor pollutants and determination of the damage caused by these pollutants to the human body are produced.

The Centre has also been involved in the preparation of background information to develop national regulations, implementation of both normative and non-normative acts of the

European Union and the Council of Europe, and preparation of expert opinion reports for the state administration and decision makers, and participates in professional, intersectoral, and international working groups.

Due to the highly skilled and experienced specialists, the Centre is able to complete, on request, all stages of comprehensive projects that are charged for, starting from the project design, through the completion of actual measurements, to the interpretation outputs in the form of health risk assessment (HRA) or health impact assessment (HIA).

The Centre has been involved in the Environmental Health Monitoring System, administers and maintains the central databases ISID (outdoor air quality data) and Monaro (data on acute respiratory diseases in selected areas), and uses the Information System (IS) PiVo intended for the collection and assessment of drinking water quality data in the Czech Republic. The laboratories of the Centre participate in the Proficiency Testing Expert Group that plays the key role in the quality assurance and organizes interlaboratory proficiency testing programmes. The Trace Element Analysis Group is also part of the Centre and detects trace and toxic elements in environmental, workplace, clinical, and biological samples for the purposes of the monitoring of exposure to toxic and trace elements and of public health protection. The Trace Element Analysis Group cooperates with other professional groups of the Centre for Health and the Environment and of the NIPH.

3.5.2. Research Projects in 2012

- SANCO/2009/C4/04- SINPHONIE- Schools Indoor Pollution and Health: Observatory Network in Europe
- Magnetic speciation of atmospheric PM₁, PM_{2.5}, and PM₁₀ collected at sites with different air quality
- The use of membranes with nanopores for decreasing health risk caused by volatile organic compounds in small water sources
- New methodological approach to the control and evaluation of bathing waters

3.5.3. Selected Publications in 2012

- ZAPOMĚLOVÁ, E., SKÁCELOVÁ, O., PUMANN, P., KOPP, R., JANEČEK, E. Biogeographically interesting planktonic Nostocales (Cyanobacteria) in the Czech Republic and their polyphasic evaluation resulting in taxonomic revisions of *Anabaena bergii* Ostenfeld 1908 (*Chrysochloris* gen. nov.) and *A-tenericaulis* Nygaard 1949 (*Dolichospermum tenericaule* comb. nova). *Hydrobiologia*. 2012, 698(1), 353-365. ISSN 0018-8158.
- SYSALOVÁ, J., SÝKOROVÁ, I., HAVELCOVÁ, M., SZÁKOVÁ, J., TREJTNAROVÁ, H., KOTLÍK, B. Toxicologically important trace elements and organic compounds investigated in size-fractionated urban particulate matter collected near the Prague Highway. *Science of the total environment*. 2012, 437, 127-136. ISSN 0048-9697.
- POMYKAČOVÁ, I., ČADEK, V., SVOBODOVÁ, V., KOŽÍŠEK, F., JELIGOVÁ, H. GC-MS Determination of Trace Amounts of Pharmaceuticals in Drinking Water. *Chemické listy*. 2012, 106(2), 143-148. ISSN 0009-2770. (In Czech)
- ČERNÁ, M., KRŠKOVÁ, A., ČEJCHANOVÁ, M., SPĚVÁČKOVÁ, V. Human biomonitoring in the Czech Republic: an overview. *International journal of hygiene and environmental health*. 2012, 215(2), 109-119. ISSN 1438-4639.

3.6. Centre for Health, Nutrition and Food

Head: Prof. MVDr. Jiří Ruprich, Ph.D.

Contact: jruprich@chpr.szu.cz

Staff: 32 employees

3.6.1. Mission of the Centre

The core mission of the Centre is to conduct professional activities that come within the terms of reference of the public health sector (Ministry of Health of the Czech Republic) but, at the same time, are within the scope of other sectors such as agriculture etc.. Nevertheless, as recommended by the WHO, the leading role in this context needs to be played by the public health sector that has effective tools to prevent health risks associated with food and nutrition. The Centre groups two units: Unit for Health Risk Assessment and Applied Nutrition and Unit for Food Safety Analysis. These two units operate separately from each other as required by Regulation (EC) No 178/2002 of the European Parliament and of the Council. In their daily routine, the professional teams of the Centre provide support primarily to the public health protection authorities in the following areas (1) food safety, (2) independent health risk assessment of dietary exposure, and (3) specific issues in the area of nutrition and health concerning the regulations in force (applied nutrition). In all these areas, the Centre has been involved in international cooperation with the EU member states, third countries, and international organizations including the WHO and OECD.

3.6.2. Research Projects in 2012

- ACROPOLIS - Aggregate and Cumulative Risk of Pesticides: an On-Line Integrated Strategy
- TDS EXPOSURE - Total Diet Study Exposure
- EURRECA (EUROpean Micronutrient RECommendations Aligned) - Harmonising nutrient recommendations across Europe with special focus on vulnerable groups and consumer understanding
- EFSA/DATEX/2009/02-PANKACE - Pilot study in the view of a Pan European dietary survey - Infants and children
- Ochratoxin A – health risk assessment for selected population groups in the Czech Republic
- Implementation of methods for MRSA detection in meat of food animals and methods for effective measures against their spread in the food chain
- Protection systems of quality and safety of dairy products by means of suitable methods applicable in practice

3.6.3. Selected Publications in 2012

- DE KEYZER, W., HUYBRECHTS, I., DEKKERS, A.L.M., GLEEN, A., CRISPIM, S.P., HULSHOF, P.J.M., ANDERSEN, L.F., ŘEHŮRKOVÁ, I., RUPRICH, J., et al. Predicting urinary creatinine excretion and its usefulness to identify incomplete 24 h urine collections. *British journal of nutrition*. 2012, 108(6), 1118-1125. ISSN 0007-1145.

- MALÍŘ, F., OSTRÝ, V., PFOHL-LESZKOWICZ, A., ROUBAL, T. Ochratoxin A exposure biomarkers in the Czech Republic and comparison with foreign countries. *Biomarkers*. 2012, 17(7), 577-589. ISSN 1354-750X.
- OSTRÝ, V., ŠKARKOVÁ, J., RUPRICH, J. Densitometric high-performance thin-layer chromatography method for toxigenicity testing of *Alternaria alternata* strains isolated from foodstuffs. *Journal of planar chromatography - modern TLC*. 2012, 25(5), 388-393. ISSN 0933-4173.
- BOON, P.E., TE BIESEBEEK, J.D., SIOEN, I., HUYBRECHTS, I., MOSCHANDREAS, J., RUPRICH, J., et al. Long-term dietary exposure to lead in young European children: comparing a pan-European approach with a national exposure assessment. *Food additives & contaminants part: A - chemistry analysis control exposure & risk assessment*. 2012, 29(11), 1701-1715. ISSN 1944-0049.
- CRISPIM, S.P., GEELEN, A., DEVRIES, J.H., FREISLING, H., SOUVEREIN, O., HULSHOF, P.J.M., OCKÉ, M.C., BOSHUIZEN, H., ANDERSEN, L.F., RUPRICH, J., et al. Bias in protein and potassium intake collected with 24-h recalls (EPIC-Soft) is rather comparable across European populations. *European journal of nutrition*. 2012, 51(8), 997-1010. ISSN 1436-6207.
- CRISPIM, S.P., GEELEN, A., SIEBELINK, E., HUYBRECHTS, I., LILLEGAARD, I.T., MARGARITIS, I., ŘEHŮRKOVÁ, I., et al. Design aspects of 24 h recall assessments may affect the estimates of protein and potassium intake in dietary surveys. *Public health nutrition*. 2012, 15(7), 1196-1200. ISSN 1368-9800.
- DUŠKOVÁ, M., ŠEDO, O., KŠICOVÁ, K., ZDRÁHAL, Z., KARPÍŠKOVÁ, R. Identification of lactobacilli isolated from food by genotypic methods and MALDI-TOF MS. *International journal of food microbiology*. 2012, 159(2), 107-114. ISSN 0168-1605.
- ŠTÁSTKOVÁ, Z., KARPÍŠKOVÁ, R., GELBÍČOVÁ, T., VAŇÁČ, V., TŮMA, Š., SVĚTLÍKOVÁ, B. Detection of enterotoxigenic genes in *Staphylococcus aureus* isolated from bulk tank cow's milk samples in the Czech Republic. *Acta alimentaria*. 2012, 41(3), 327-333. ISSN 0139-3006.
- HOLUBOVÁ, Z., SOMMER, L., MOOS, M., KUTA, J. Simultaneous determination of metal traces using SPE preconcentration on Amberlite XAD-7 by ICP-MS in environmental water and sample ecotoxicology assessment. *Fresenius environmental bulletin*. 2012, 21(10A), 3127-3135. ISSN 1018-4619.
- HOLUBOVÁ, Z., MOOS, M., SOMMER, L. Simultaneous determination of metal traces by ICP-MS in environmental waters using SPE preconcentration on different polymeric sorbents. *Chemical papers*. 2012, 66(10), 899-906. ISSN 0366-6352.
- ŠTÁSTKOVÁ, Z., KARPÍŠKOVÁ, R., BORKOVCOVÁ, I. Possibilities of detection of staphylococcal enterotoxins. *Chemické listy*. 2012, 106(8), 745-749. ISSN 0009-2770. (In Czech)

3.7. Environmental and Population Health Monitoring Headquarters

Head: Růžena Kubínová, M.D.

Contact: kubinova@szu.cz

Staff: 10 employees

3.7.1. Mission of the Monitoring team

The Environmental and Population Health Monitoring team aims to coordinate activities within the Environmental Health Monitoring System in the Czech Republic and to publish its outputs. The team organizes and processes questionnaire surveys on population health, lifestyles, risk factor prevalence, and influence of environmental and socioeconomic factors on health in the Czech Republic. The team analyzes toxicologically significant levels of chemicals, their metabolites, and other exposure indicators in body fluids and tissues of the Czech population. Environmental and health indicators are processed in accordance with the conclusions of the Fifth Ministerial Conference on Environment and Health held in Parma in 2010. The team has been involved in international projects on population health and the quality of life in relation to population ageing.

3.7.2. Research Projects in 2012

- Consortium to perform human biomonitoring on a European Scale
- DEMOCOPHES - Demonstration of a study to Coordinate and Perform Human Biomonitoring on a European Scale
- HAPIEE (Health, Alcohol and Psychosocial factors In Eastern Europe) Study - Determinants of cardiovascular diseases in Eastern Europe: Longitudinal follow up of a multicenter cohort study
- CHANCES - Consortium on Health and Ageing: Network of Cohorts in Europe and the United States
- EHES - The European Health Examination Survey
- Assessment of outdoor environment factors influencing exposure of children to allergens

3.7.3. Selected Publications in 2012

- ČERNÁ, M., KRŠKOVÁ, A., ČEJCHANOVÁ, M., SPĚVÁČKOVÁ, V. Human biomonitoring in the Czech Republic: an overview. *International journal of hygiene and environmental health*. 2012, 215(2), 109-119. ISSN 1438-4639.
- MIKEŠ, O., ČUPR, P., KOHÚT, L., KRŠKOVÁ, A., ČERNÁ, M. Fifteen years of monitoring of POPs in the breast milk, Czech Republic, 1994-2009: trends and factors. *Environmental science and pollution research*. 2012, 19(6), 1936-1943. ISSN 0944-1344.
- HRUBÁ, F., STRÖMBERG, U., ČERNÁ, M., CHEN, Ch., HARARI, F., HARARI, R., HORVÁT, M., KOPPOVÁ, K., KOS, A., KRŠKOVÁ, A., KRŠNIK, M., LAAMECH, J., LI, Y.F., LÖFMARK, L., LUNDH, T., LUNDSTRÖM, N.G., LYOUSSE, B., MAZEJ, D., OSREDKAR, J., PAWLAS, K., PAWLAS, N., PROKOPOWICZ, A., RENTSCHLER, G.,

SPĚVÁČKOVÁ, V., et al. Blood cadmium, mercury, and lead in children: an international comparison of cities in six European countries, and China, Ecuador, and Morocco. *Environment international*. 2012, 41(1), 29-34. ISSN 0160-4120.

- DORYNSKA, A., PAJAK, A., KUBÍNOVÁ, R., MALYUTINA, S., TAMOSIUNAS, A., PIKHART, H., et al. Socioeconomic circumstances, health behaviours and functional limitations in older persons in four Central and Eastern European populations. *Age and ageing*. 2012, 41(6), 728-735. ISSN 0002-0729.
- HUBÁČEK, J.A., PIKHART, H., PEASEY, A., KUBÍNOVÁ, R., BOBAK, M. ADH1B polymorphism, alcohol consumption, and binge drinking in Slavic Caucasians: results from the Czech HAPIEE study. *Alcoholism, clinical and experimental research*. 2012, 36(5), 900-905. ISSN 0145-6008.
- HUBÁČEK, J.A., VIKLICKÝ, O., DLOUHÁ, D., BLOUDIČKOVÁ, S., KUBÍNOVÁ, R., PEASEY, A., et al. The FTO gene polymorphism is associated with end-stage renal disease: two large independent case-control studies in general population. *Nephrology dialysis transplantation*. 2012, 27(3), 1030-1035. ISSN 0931-0509.

3.8. Manager of the National HIV/AIDS Program for the Czech Republic

Head: Džamila Stehlíková, M.D.

Contact: stehlikova@szu.cz

Staff: 1 employee

3.8.1. Mission of the Manager of the National HIV/AIDS Program for the Czech Republic

The HIV/AIDS Manager does not implement HIV interventions but monitors and coordinates the cooperation between the public sector (ministries, administrative offices, health institutions, regional health offices, local government bodies, AIDS centers, professional associations, and other entities) and civil society (including NGOs, representatives of groups at increased risk of HIV infection, and people living with HIV/AIDS) within the context of the National HIV/AIDS Program and the relevant government resolution.

The Manager of the National HIV/AIDS Program has the responsibility for monitoring and evaluating the country's national HIV response and for preparing the national HIV/AIDS M&E Plan.

The Manager of the National HIV/AIDS Program evaluates the available results of biological, epidemiological, and behavioral HIV/AIDS surveillance, monitors indicators of the National HIV/AIDS Program and provides regular international reporting (Global AIDS Response Progress Reporting) for organizations of the United Nations system and other international institutions, in particular the WHO, UNAIDS, ECDC, and UNICEF.

3.8.2. Program Priorities in 2012

The program priorities of the Manager of the National HIV/AIDS Program in 2012 were to evaluate the progress made in meeting the goals of the National HIV/AIDS Program in the Czech Republic in 2008-2012 and, in close cooperation with the Ministry of Health of the Czech Republic, to outline a new mid-term strategy for the National HIV/AIDS Program in

the Czech Republic in 2013-2017 approved by the Government on 20 December 2012 (Government Resolution No. 956).

Another program priority was to adapt the UNAIDS methodology for a comprehensive cost-effectiveness analysis of HIV/AIDS prevention and treatment to the conditions of the Czech Republic.

3.8.3. Relevant results

3.8.3.1. Cost-effectiveness analysis of HIV/AIDS resource allocation

The choice of the HIV/AIDS prevention strategy and public resource allocation is made based on the dynamics of the HIV/AIDS epidemic and trends in HIV transmission in the major vulnerable groups (men who have sex with men, injecting drug users, and commercial sex workers) as well as on the cost-effectiveness of particular prevention measures. The Manager of the National HIV/AIDS Program for the Czech Republic in cooperation with the team of the NIPH National Reference Laboratory for HIV/AIDS conducted a comprehensive cost-effectiveness analysis of HIV/AIDS resource allocation for the period from the late 1980s to 2012, on the instructions of the Minister of Health. For the first time in the history of the fight against HIV/AIDS in the Czech Republic, the data on cost-effectiveness of particular prevention and treatment measures were gathered and processed. The resultant research report was submitted to the Minister of Health and became part of the background information provided to the Government of the Czech Republic for discussion of the National HIV/AIDS Program for 2013-2017.

3.8.3.2. Monitoring and preparation of a research report on compliance with the international commitments of the Czech Republic arising from the UN Political Declaration on HIV/AIDS of 2011 (Global AIDS Response Progress Reporting)

In 2012, two-year behavioral and biological HIV/AIDS surveillance data were processed for the needs of the Global AIDS Response Progress Reporting and evaluation of the compliance with the UN Political Declaration on HIV/AIDS of 2011. The research report is available at the UNAIDS website: [http://www.unaids.org/en/dataanalysis/knowyourresponse/country/progressreports/2012countries/ce_CZ_Narrative_Report\[1\].pdf](http://www.unaids.org/en/dataanalysis/knowyourresponse/country/progressreports/2012countries/ce_CZ_Narrative_Report[1].pdf).

In 2012, the regular monitoring of the compliance with the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia was performed to meet the needs of the ECDC.

3.8.3.3. Research activities

In 2012, the Manager of the National HIV/AIDS Program in the Czech Republic participated in several international research projects. Two of these projects were completed in 2012, ending with the publication of the final research reports.

1. MAIDS - MENTAL HEALTH CARE FOR PEOPLE LIVING WITH HIV/AIDS. The study was conducted in ten Central and Eastern European countries to map the availability of mental health services for people living with HIV/AIDS.
2. HIV Community-Based Testing Practices in Europe (HIV-COBATEST). The study was conducted in 25 countries in Southern, Central, Northern, and Eastern Europe.

3.8.3.4. Education of the professional and general public

In 2012, the Manager of the National HIV/AIDS Program in the Czech Republic participated in a range of workshops, lectures, and conferences on HIV/AIDS prevention intended for pregraduate and postgraduate students, healthcare providers, other professionals, non-governmental sector representatives, and the general public.

3.8.3.5. Cooperation with non-governmental non-profit organizations

The Manager of the National HIV/AIDS Program in the Czech Republic maintains close cooperation with the following non-governmental organizations involved in HIV/AIDS prevention (NGO Forum, Czech AIDS Help Society, Bliss Without Risk, etc.). The Manager of the National HIV/AIDS Program in the Czech Republic provides professional and methodical guidance to The Lighthouse, a hospice setting and the largest center in the Czech Republic that provides voluntary, anonymous, and free HIV testing. The Manager of the National HIV/AIDS Program in the Czech Republic participated in public discussions and meetings with HIV/AIDS-vulnerable population groups including men who have sex with men and people living with HIV/AIDS.

3.9. Unit for Biostatistics and Information

Head: Bohumír Procházka, MSc, PhD.

Contact: pro@szu.cz

Staff: 11 employees

3.9.1. Mission of the Unit

The Unit provides services in the field of IT and biostatistical analyses. It consists of two teams i.e. Biostatistics team and Informatics team.

The Unit priorities cover administration and development of the NIPH computer network and support of research and other NIPH activities in the field of biostatistics i.e. the team is involved in particular projects of the Centers.

3.9.2. Program Priorities in 2012

The Statistics team in cooperation with the National Reference Centre participated in the development, administration and innovation of the nation-wide registries operated by the Ministry of Health of the Czech Republic (Registry of notifiable infectious diseases EpiDat, HIV/AIDS, Acute Respiratory Infections (ARI) Registry, and Pandemics Alert Registry) and activities of the Informatics Advisory Board of the Chief Public Health Officer of CR. Furthermore, the team conducted routine weekly and monthly surveys, many analyses and provided information particularly for MoH. On behalf of NIPH and MoH the team participated in TESS international projects supported by the European Centre for Disease Prevention and Control (ECDC) and team members attended meetings in Stockholm – seat of ECDC.

The Informatics team provides first of all administration of IT network and its components, and the Internet and NIPH Intranet websites administration. During 2012, a hundred of new computers with Windows 7 Prof. operating system and Microsoft Office 10 were installed in three phases.

3.9.3. Relevant Results in 2012

Members of the Statistics team provided creative support to particular Centers and grant investigators in the field of application of statistical methods and data processing as well as consulting for NIPH and HS or other health organizations.

They also participated in the following projects and tasks:

- space-time analysis of infectious diseases, statistical surveillance of epidemics;
- biomonitoring of PCB and other substances in human milk and blood serum in the Czech population, participation in the COPHES/DEMOCOPHES study;
- surveillance data processing on toxoplasmosis, lyme borreliosis, tick-borne encephalitis;
- exposure analysis within the Registry of Subjects Occupationally Exposed to Carcinogens (REGEX);
- materials for obtaining accreditation of analytical methods;
- toxicology, toxicokinetic and cell physiological modeling studies;
- cooperation with NRL HIV/AIDS and the National HIV/AIDS programme management team on monitoring of HIV/AIDS in the Czech Republic;
- demographic data collection for epidemiological analyses;
- analyses of NIPH survey questionnaires;
- participation on survey and data analysis of integrated monitoring for environmental health impact in CR (HELEN, EHES studies, allergies in children, noise etc.);
- analysis of air pollution data;
- analyses of nation-wide anthropometric data of children (growth, secular trend and obesity).

The Biostatistics team cooperated with the Ministry of Health on the development and administration of nation-wide registries (Registry of notifiable infectious diseases EpiDat, HIV/AIDS, Acute Respiratory Infections (ARI) Registry, and Pandemics Alert Registry). They participated in TESS international projects and attended meetings in Stockholm – seat of ECDC. They were also involved in the NIPH publication activities.

The main activities of the Informatics team included the computer network and its components administration and its development in the future.

3.10. Unit for Quality and Authorization

Head: Věra Chaloupková, M.D.

Contact: chaloup@szu.cz

Staff: 2 employees

3.10.1. Mission of the Unit

The mission of the Unit is to implement the programme for monitoring and quality control of services provided in the field of public health in compliance with Act No. 258/2000 Coll. As laid down by the law, the Unit provides mainly the methodical and organizational support to the Programme of authorization of laboratories for testing and measurement in public health

protection and authorization of persons to carry out health risk assessment in the fields defined by the law on public health protection (PHP). The Ministry of Industry and Trade has notified the European Commission of the Authorization Program and the Unit has been included into the Internal Market Information (IMI) System that links all EU competent authorities in accordance with the IMI Regulation.

Another mission of the Unit in the field of PHP is to cooperate with the Ministry of Health on the development of programmes for quality and effectiveness of health services.

3.10.2. Program Priorities in 2012

The program priority of the Unit was to implement the program of PHP services quality assessment i.e. issuing authorization in compliance with EU legislation on free movement of services as well as to cooperate with MoH on design and development of the basic structure for the assessment of quality and effectiveness of health care services and PHP services to meet the requirements of the health policies of CR and WHO European strategy for the 21st century.

The Unit also actively cooperated with MoH and provided expert advice and comments on legislative, the quality of PHP services and the authorization program.

3.10.3. Relevant Results in 2012

The Unit cooperated with MoH on implementation of the National Quality Policy. It participated in the development of programs on quality and safe services provided by health institutions. The Unit is a board member of the Czech Quality trade mark and is involved in the Quality Control Division of the Quality Council of the Czech Republic within the Ministry of Health and the Ministry of Labor and Social Affairs. The Unit also participated in the development of quality indicators and standards evaluation of the Decree No. 102/2012 Coll. on quality and safety of health services and participated in the authorization procedures and evaluation of persons obtaining authorization in compliance with § 98 Act No.372/2011 Coll.

3.11. Scientific Information Unit

Head: Mgr. Jana Veselá

Contact: jvesela@szu.cz

Staff: 16 employees

3.11.1. Mission of the Unit

The mission of the Scientific Information Unit and Professional Library is to provide library and information services, translation, editing and reprographic services in accordance with NIPH requirements. The Library also provides library and information services to professionals and the general public.

CSI set two priorities in 2012. The first one was to provide up-to-date information from relevant information sources and to extend its provision. Therefore, the Centre continued subscription of all journals and the library stock was supplemented with selected books. The

Centre also provides access to 10 electronic full text and reference databases within four projects of the Ministry of Education, Youth and Sports (Research Information Sources) and the Ministry of Culture (Library Information Services). The Library has received subsidy from the Ministry of Culture (within VISK-3 grant program) for the renewal of obsolete computer equipment in order to provide proper access to information sources and the library system administration. The second priority set was editing activity. The Centre publishes the Central European Journal of Public Health included in the Web of Science citation index and in two editions of Current Contents database. It also participates on publishing of Acta Hygienica, Epidemiologica et Microbiologica journal. The main goal is to maintain quality standards and promote it to increase the number of subscribers.

3.11.2. Relevant Results in 2012

In 2012, the Library provided services to 4,282 users and 11,831 items out of a total of 82,442 library items were borrowed. Within the Virtual Polytechnic Library system CSI provided services as a member library. 532 requests for information retrieval were processed and 42 user profiles were monitored. A total of 574 of requests for information retrieval were processed (citation retrieval outputs were edited in compliance with particular norms). CSI staff members collected, processed and published data on the NIPH professionals publishing activities in 2012 and supplied data to R&D Results Index – a part of the Research and Development and Innovation Information System.

- 378 interlibrary loan requests (66 out of it international interlibrary loan requests) were met. 14,291 users of electronic databases were registered, 18,252 full text articles and 2,396 abstracts were downloaded. The library clients also used 54 e-books available. The library provided access to foreign medical databases and journals (Sage Journals Online, DynaMed, Cochran Collection Plus, Book Citation Index in WoS, Allied and Complementary Medicine);
- Four issues of the Central European Journal of Public Health and Acta Hygienica, Epidemiologica et Microbiologica journal were published, both with increased number of articles. 1/2012 CEJPH dedicated issue published in cooperation with CINDI Fund was devoted to the detrimental impact of smoking on health.

4. International Collaboration

NIPH is one of the founder members of the *International Association of National Public Health Institutes* (IANPHI).

Experts of the internationally acclaimed Institute have joined many international organizations. NIPH professionals are involved in activities of the EU Institutions, Expert Committees and Expert Groups of the European Commission, the Council of the European Union, the Council of Europe and other European organizations (e.g. the European Food Safety Authority, the European Centre for Disease Prevention and Control, the European Chemicals Agency, the Joint Research Centre of the European Commission, the European Centre for the Validation of Alternative Methods etc.). They attend meetings of the Institutions on a regular basis.

In 2012, the Institute made every effort to support NIPH professionals attending congresses, conferences, seminars etc. in order to strengthen cooperation with leading research institutions

abroad, acquire the advanced know-how and exchange recent scientific information and experiences.

NIPH is involved in a long term international cooperation on a wide range of projects of many European and global institutions:

- European Commission – 6. RP, 7. RP, European Cooperation in Science and Technology (COST), DG Health and Consumers, DG Employment, Social Affairs and Inclusion, EUROSTAT
- European Centre for Disease Prevention and Control (ECDC)
- European Public Health Microbiology Training Program (EUPHEM)
- EEA and Norway Grants
- International Union for Health Promotion (IUHPE)
- WHO Reference Laboratory Network
- European Biological Resource Centres Network (EBRCN)
- European Culture Collection Organisation (ECCO)
- World Federation for Culture Collections (WFCC)
- The International Society of Behavioural Medicine
- EuroHealthNet
- European Network for Workplace Health Promotion (ENWHP)
- Global Network of WHO Collaborating Centers in Occupational Health (GOHNET)
- World Federation for Mental Health (WFMH)
- European Health Psychology Society (EHPS)
- European Food Safety Authority Network of Assisting Organizations (EFSA)
- Global Tobacco Surveillance System (GTSS) WHO/CDC
- WHO-Euro BCA (Tobacco, alcohol)
- Society for Mycotoxin Research (SMR)
- European Union Reference Laboratory for Genetically Modified Food and Feed (EURL-GMFF)
- European Network of GMO Laboratories (ENGL)
- International Network on Brief Interventions on Alcohol and Other Drugs (INEBRIA)

5. Publication Activity in 2012

In 2012, the NIPH publication activities were continuously monitored and processed by the Centre of Scientific Information staff and then entered into the NIPH Personal Bibliography Database. In 2013, the respective part of the records will be reported to the database of the VaVaI Information system – R&D Results Index (RIV). Data on publication activities related to research and development projects and plans supported from public funds of the Czech Republic is gathered in the system and made available. 393 bibliographic records of works published in 2012 were processed by March 8, 2013. 23 publications resulting from cooperation of more than one Centre were issued. 85 out of 275 papers accepted for publication appeared in 69 high-impact journals. 13 conference abstracts were published in 7

high-impact journals. The bibliographic records of publication activity of the NIPH professionals in 2012 presented in the NIPH Personal Bibliography are available at <http://www.szu.cz/knihovna/online-katalog>.