The Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, appointed by the Ministry of Health (MoH) decision (class: UP/I-510-01/13-01/13 UR: 534-10-1-1-2/5-13-12, Zagreb, November 5, 2013) for the third 5-year term from 2013, is active in the frame of the Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, performing the most challenging tasks and activities in the four main fields of gerontologic-public health service. The gerontologic-public health service is defined by the Act on Amendments to the Act on Healthcare (Official Gazette 85/2006, 126/2006), where Measures for the Gerontologic-Public Health Service are listed and gerontologic-public health teams defined on the basis of the Amendments to the Public Health Network (Official Gazette 113/2015) and National Strategy of Healthcare Development 2012-2020 (Official Gazette 156/2013, 24/2014).

Gerontologic-Public Health Service includes the following four main fields:

1. Monitoring, study, evaluation, planning, projection and reporting on healthcare needs and functional ability of early old age (65-74 age group), middle old age (75-84 age group) and deep old age (≥85 age group) persons; implementation of the GeroS/CEZIH project for monitoring and evaluation of healthcare needs and functional ability of gerontologic and geriatric insurees through the respective Registry with a Sub-Registry of Centenarians and Sub-Registry of Patients with Alzheimer Disease and Other Types of Dementia.

2. Coordination, professional-methodological assistance, instructions, education and re-education of healthcare providers/co-providers for the elderly in institutional and extra-institutional care for the elderly; continuous education in gerontology, geriatrics and geriatric care through gerontologic panels, gerontologic courses, schools, workshops, congresses and symposia with interdisciplinary gerontologic approach.


4. Research and publishing gerontologic-public health activities.
Continuous gerontologic-public health analysis of monitoring and evaluation of healthcare needs and functional ability of the elderly – Croatia and City of Zagreb 2014-2016

Within the first field of the gerontologic-public health activity of the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, individual and targeted studies and evaluations of healthcare needs and functional ability of the elderly are conducted in particular Croatian counties and the City of Zagreb. The needs recorded in Croatia are analyzed in comparison with other European countries and according to the monitored prevalence of morbidity, mortality, life expectancy, potential years of life lost, and causes of hospitalization relative to the prevalence of the causes of hospitalization and geriatric consumption during days of hospital stay in Croatia and City of Zagreb, along with evaluation of the healthcare service provided, especially at the primary healthcare level where the geriatric patient is recorded and at old people’s homes implementing the program of four-grade geriatric healthcare with category protocol.

In order to enable efficient performance of the most challenging tasks and activities in the scope of the gerontologic-public health service of the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, an innovative computerized gerontologic model project GeroS/CEZIH for monitoring and evaluation of healthcare needs and functional ability of gerontologic and geriatric patients was launched in 2014-2016.

Selected indicators identified in the first field of gerontologic-public health service 2014-2016

1. Structure of target gerontologic-public health indicators for elderly population according to Croatian counties.
2. Gerontologic-public health indicators from the Sub-Registry of Centenarians for Croatia and City of Zagreb.
3. Gerontologic-public health analysis based on gerontologic database of the Sub-Registry of Patients with Alzheimer Disease and Other Types of Dementia.
4. Gerontologic-public health analysis of healthcare needs and functional ability of the elderly in old people's homes.
5. Old people's homes and other social care providers in Croatia, 2014-2016.
6. List no. 1 and no. 4 of records on elderly users of old people's home accommodation according to Croatian counties and City of Zagreb, 2014-2016.
7. Gerontologic-public health indicators at selected old people's homes (Croatia, 2014) analyzed via List no. 1 for monitoring of healthcare needs of the elderly.
8. Indicators obtained by focused monitoring and evaluation of healthcare needs and functional ability of gerontologic and geriatric insurees via innovative computerized gerontologic program GeroS/CEZIH/panels for geriatric insurees taking more than three medicines, physical inactivity, obesity, malnutrition (web service NRS 2002), alcoholism, smoking, primary and secondary diagnoses in geriatric patient, and category protocol of four grades of geriatric healthcare (Dogma ap.).
9. Implementation of the four-grade geriatric healthcare program with nursing documentation and category protocol at old people's homes.
10. Analysis of the implementation of the four-grade geriatric healthcare program category protocol at old people's homes in Croatia and City of Zagreb, initiated on November 6, 2014 at the 23rd GeroS/CEZIH Gerontologic Workshop.

12. Analysis of gerontologic-public health indicators collected by use of the Questionnaire on Monitoring of Quality Indicators at Old People's Homes, Croatia, 2015-2016.


ABRIDGED REPORT 2014

1. During 2014, the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health performed professional tasks and activities involving the four defined fields of gerontologic-public health service, in line with the National Strategy of Healthcare Development 2012-2020, adopted in 2012. Accordingly, the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, takes active part in the organization and continuous activities of Gerontologic Panels (GP) providing education in healthcare gerontology, intended primarily for family medicine teams and 'geriatric' nurses, as well as other professionals involved in healthcare of the elderly.

- **GP 189 (February 18, 2014):** Isokinetic diagnosis and rehabilitation in prevention and treatment of musculo-articular disorders in geriatric patients
  Lecturer: Slobodan Kuvalja, MD

- **GP 190 (March 18, 2014):** New concepts in stroke prevention, diagnosis, treatment and rehabilitation in the elderly
  Lecturer: Academician Vida Demarin

- **GP 191 (April 7, 2014 – World Health Day):** Role of prevention and diagnosis of vector-borne infections in the elderly
  Lecturers: Prof. Antoinette Kajić-Rak, MD, PhD; Prof. Jasmina Vraneš, MD, PhD; Tatjana Vilibić-Čavlek, MD, PhD

- **GP 192 (May 20, 2014):** Characteristics of thermoregulation in geriatrics
  Lecturer: Prof. Zijad Duraković, MD, PhD

- **GP 193 (June 12, 2014):** Biomarkers of aging and DNA coagulation test for active and healthy aging
  Lecturers: Prof. Gordan Lauč, PhD; Prof. Dragan Primorac, PhD

- **GP 194 (September 30, 2014):** Early detection of Alzheimer disease in geriatric patients
  Lecturers: Academician Vida Demarin; Prof. Ninoslav Mimića, PhD

- **GP 195 (November 18, 2014):** New concepts on the mechanisms of aging
  Lecturer: Prof. Ivica Rubelj, PhD

2. In 2014, the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part as a professional partner in designing integrated gerontologic programs and projects, as follows:
• *curriculum* of the **Postgraduate Study in Gerontology and Geriatrics** at Andrija Štampar School of Public Health, School of Medicine, University of Zagreb;

• **Alma Mater Europaea with Eurasmus** (agreement on scientific and professional collaboration between Alma Mater Europaea – Maribor European Center and Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, concluded on March 13, 2014);

• proposal for introduction and developing the program of a new occupation of **GERONTOLOGICAL CAREGIVERS** as auxiliary healthcare workers in geriatric healthcare, with the Public Open University as the main carrier;

• Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, is leader of the **Coordinating Task Force for Development of the Protocol for Early Detection of Alzheimer Disease**, consisting of a variety of professionals, including gerontologists, professionals from Department of Gerontology, Dr Andrija Štampar Teaching Institute of Public Health (as leader of the Coordinating Task Force), geriatricians, Croatian Society of Gerontology and Geriatrics, psychogeriatricians, Croatian Society for Alzheimer Disease and Advanced Age Psychiatry of the Croatian Medical Association, neuroscientists, psychiatrists, neurologists, 'geriatric' nurses, social workers, physiotherapists, gerontologic nutritionists, patient family members taking the very demanding role of gerontological caregivers as auxiliary healthcare workers, and gerontologic dental medicine doctors. Establishment of the Task Force was followed by development of geroprophylactic measures including early detection of Alzheimer disease with educational Guide for Early Detection of Alzheimer Disease and continuous re-education on all target groups in the scope of care for patients suffering from Alzheimer disease. The main aim of the project model **PROTOCOL FOR EARLY DETECTION OF ALZHEIMER DISEASE** is promotion of geroprophylactic measures of prevention and functional ability preservation (according to patient mental and physical status) in institutional and extra-institutional care for the elderly, with special reference to psychogeriatric patients with Alzheimer disease;

• in 2014, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, initiated and in collaboration with the Croatian Society of Gerontology and Geriatrics, Croatian Medical Association developed joint objectives of geriatric healthcare computerization at all three levels, from general/family medicine and geriatric healthcare at old people's homes through prolonged treatment of geriatric patients and home-visiting service, home care and palliative care to the services provided by Gerontology Center, e.g., extra-institutional care of geriatric insurees, services provided by gerontologic dentistry and gerontological caregivers. They all will be linked together in **GEROS** (GeroS, a subsystem created for introducing the gerontologic-public health indicators in CEZIH to enable monitoring and evaluation of gerontologic and geriatric healthcare needs), while the most relevant healthcare segments will be incorporated in the eFile. It will ensure efficiency and appropriateness in the entire healthcare system, along with availability, control and evaluation of the care provided to geriatric insurees, as well as more rational use of the gropart geriatric healthcare utilization. Having this in mind, the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, in coordination with a team of various professionals involved in healthcare of the elderly discussed the issue at 35 gerontologic workshops and established the methods of monitoring and meeting healthcare and social needs of the elderly in the community, ranging from the
City of Zagreb districts through Croatian counties taking into account their specificities to the Republic of Croatia as a whole. Special emphasis was put on the structural aspect (working process, and determination, monitoring and evaluation of indicators) of the current state in institutional (old people's homes, hospitals for prolonged treatment, day-hospitals for the elderly, palliative/geriatric care) and extra-institutional care for the elderly (+65).

4. The following activities were launched by the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, led by Assist. Prof. Spomenka Tomek-Roksandić, MD, PhD:

- structurally included in the first European doctoral study in gerontology. In partnership with the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Alma Mater Europaea Austria – European Academy of Science and Arts from Salzburg in collaboration with Alma Mater Europaea Slovenia, have developed curriculum of the EUROPEAN DOCTORAL STUDY IN SOCIAL GERONTOLOGY, anticipated to start in Salzburg, Austria, in spring 2015. The Social Gerontology study is a breakthrough for the European society, gerontology, and international collaboration across Europe, and great acknowledgment to Croatian gerontology;
- Active participation of the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia in respective education of residents in epidemiology and 6th year medical students, as well as in the postgraduate nursing study in gerontology, geriatrics and geriatric healthcare at the School of Medicine, University of Zagreb;
- Croatian dietary guidelines for the elderly were presented at the Nutritional Screening Implementation Conference: Optimal Nutritional Care for All, held on November 4-5, 2014 in Brussels.

5. In 2014, professionals from the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, published a number of professional and scientific papers on gerontology and geriatrics topics in professional and scientific journals and books. The following articles appeared in the scientific journal Periodicum biologorum in 2014:

- Program of primary, secondary and tertiary prevention for the elderly and Gerontology public health management in Croatia;
- active participation in the regular scientific meeting EKONOMSKA POLITIKA HRVATSKJE ZA 2015. GODINU (Economic Policy of Croatia in 2015) with presentation on the gerontologic topic entitled The elderly as a usable potential for development of the Croatian economy, and at the First International Congress of Primary Healthcare – Renaissance of Primary Healthcare with the presentation entitled The main role of primary healthcare in healthcare of the elderly.
ABRIDGED REPORT 2015

1. In 2015, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part in the organization and continuous activities of Gerontologic Panels aimed at education in healthcare gerontology intended primarily for family medicine teams, family medicine physicians, 'geriatric' nurses and other professionals involved in healthcare for the elderly. The following Gerontologic Panels (GP) and meetings were held in 2015:

- GP 196 (February 17, 2015): Diagnosis and treatment of skin diseases during aging
  Lecturer: Prof. Mirna Šitum, MD, PhD
- GP 197 (March 10, 2015): Diagnosis and treatment of breast cancer in elderly women
  Lecturer: Prof. Boris Brkljačić, MD, PhD
- 13th Gerontology Symposium (April 20, 2015, on the occasion of the World Health Day): Role of nutritional screening via NRS web service and GeroS
- GP 198 (May 22, 2015): Healthcare of the elderly; Department of Gerontology – Zagreb model of excellence and extra-institutional care for the elderly, with guidelines for appropriate nutrition for the elderly
  Lecturers: Assist. Prof. Spomenka Tomek-Roksandić, MD, PhD; Višnja Fortuna, MS; Assist. Prof. Darija Vranešić-Bender, PhD
- GP 199 (September 29, 2015): Active healthy aging in healthcare of the elderly
  Lecturers: Assist. Prof. Spomenka Tomek-Roksandić, MD, PhD; Višnja Fortuna, MS
- 14th Gerontology Symposium (October 5, 2015): Healthcare priorities in healthcare of the elderly, with topics and lecturers from the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia: Healthcare of the elderly in Croatia – gerontology-public health management (Assist. Prof. Spomenka Tomek-Roksandić, MD, PhD); Program of primary, secondary and tertiary prevention measures for the elderly (Nada Tomasović-Mrčela, PhD); Four-grade geriatric healthcare program with nursing documentation and general/family medicine category protocol at old people's homes (Marica Lukić, back.med.techn.)
- Gerontologic workshop/creativity workshop (November 19, 2015): Quality of healthcare and social care of the elderly
  Lecturer: Professor Emeritus Ana Stavljenić-Rukavina
- Scientific meeting (November 11-13, 2015): Economic policy of Croatia in 2016; on the topic: Rationalization of geriatric consumption – establishment of GeroS
  Lecturer: Assist. Prof. Spomenka Tomek-Roksandić, MD, PhD, and co-workers at the panel discussion on Digital Economy
- Gerontologic creativity workshop (November 27-29, 2015): Scientific meeting Health and Healthcare 2015-2030; on the topic: GeroS inextricably linked with CEZIH in healthcare of the elderly
  Lecturer: Assist. Prof. Spomenka Tomek-Roksandić, MD, PhD, and co-workers

2. Department of Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, is actively included in the gerontology, geriatrics and geriatric healthcare education for 6th year medical students, and in postgraduate nursing study in Zagreb, Split, Rijeka and Pula. Reference Center for Healthcare of the Elderly, Ministry of Health,
Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part in designing *curriculum* of the postgraduate study in gerontology and geriatrics at Andrija Štampar School of Public Health, School of Medicine, University of Zagreb.

3. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health takes active part as a professional partner in the proposal of introduction and development of the program for a new occupation of GERONTOLOGICAL CAREGIVERS as auxiliary nursing healthcare workers in geriatric healthcare, with the Public Open University as the main carrier (program duration: 1600 hours).

4. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part in development of the professional *program for residency in geriatrics, announced in Official Gazette 116/2015*. According to UEMS, geriatrics is medical residency engaged in the treatment, diagnosis and rehabilitation of diseased elderly individuals, and in prevention of disease development in the elderly. The new By-Law on Physician Residency (Official Gazette 100/2011, 133/2011, 54/2012, 49/2013, 139/2014) recognizes and includes this residency in the list of residencies in the Republic of Croatia. The anticipated duration of this residency is 60 months (5 years), while the program of residency consists of the common internist trunk, duration of 22 months (including cardiology, gastroenterology, endocrinology and diabetology, pulmonology, nephrology, hematology, transfusion medicine, allergology and clinical immunology, rheumatology, intensive and emergency medicine, internist oncology, clinical pharmacology and toxicology, and infectious diseases) and geriatrics of 33 months (including general internal medicine, specificities of invasive diagnostic, therapeutic and interventional procedures, and therapeutic outcomes in geriatric patients, neuro-geriatrics, psycho-geriatrics, general/family medicine, physical medicine and rehabilitation in geriatrics, orthopedics and traumatology in geriatrics, geriatric endocrinology, geriatric oncology and radiotherapy, gerontologic-public health activity, fundamentals of quality assurance system in geriatrics, use of epidemiology in geriatrics, palliative care in geriatrics, and geroprophylactic measures for appropriate nutrition in geriatrics). Resident in geriatrics has to pass the Geriatrics postgraduate residency exam. The entire program of residency as regulated by the By-Law should be performed in healthcare institutions, companies involved in healthcare activities, specialist offices, medical schools, and bodies authorized by the minister of health for internist training in line with the By-Law on Physician Residency. In the scope of residency in geriatrics, resident must complete the Geriatrics postgraduate residency study as part of the postgraduate study in geriatrics. During residency, resident is obliged to attend continuous education courses for physicians.

5. Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, was involved in the organization of the 13th Gerontology Symposium on the occasion of the World Health Day, which took place on April 20, 2015 in the Old Town Hall, on the topic of The role of nutritional
screening via NRS 2002 web service and GeroS. The follopart lecturers held their presentations at the Symposium: Prof. Antoinette Kaić-Rak, PhD, Prof. Neven Ljubičić, PhD – The role of nutritional status in the elderly; Prof. Željko Krznaric, PhD – Malnutrition and sarcopenia in geriatric patients; Prof. Darija Vranešić Bender, PhD – Croatian model of successful nutritional guidelines for the elderly; Tajana Pavić, PhD – Nutritional evaluation of geriatric patients via NRS 2002 web service; Assist. Prof. Spomenka Tomek-Roksandić, PhD, Dunja Durut Beslač, MS – Rationalization of geriatric healthcare utilization by the introduction of GeroS; and Prof. Stjepan Orešković, PhD – The impact of food quality used by the elderly on the gropart geriatric healthcare utilization. In conclusion, the role of modern technology in healthy, active and productive aging as exemplified by the use of NRS 2002 web service and GeroS for nutritional screening in the elderly was highlighted.

6. Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, and Teaching Institute of Public Health of the Primorje-Gorski Kotar County, under the auspices of Mrs. Kolinda Grabar Kitarović, President of the Republic of Croatia, took active part in the organization of the Gerontology Symposium in Opatija, held on October 5, 2015, under the title Healthcare Priorities in the Care of the Elderly. More than 30 lectures were held at this meeting intended for all kinds of professionals involved in the field of gerontology, in which experts in healthcare of the elderly presented the main health and social problems and healthcare priorities necessary to upgrade health status and quality of life in the elderly.

7. In 2015, evaluation of the implementation of the Four-Grade Geriatric Healthcare Program with Nursing Documentation and General/Family Medicine Category Protocol at Old People's Homes was performed at the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health. The Program ensures respective activities provided by family medicine physicians and even inclusion of an increased number of nurses depending on healthcare needs of individual geriatric patients accommodated in old people's homes, thus determining the category of geriatric insuree for implementation of fourth-grade geriatric healthcare indicated by the patient health state and functional disablement. The Four-Grade Geriatric Healthcare Program was presented to be applied in old people's homes where healthcare is predominantly provided at primary healthcare level, in particular by teams consisting of general/family medicine physician and an appropriate number of nurses, depending on the healthcare needs and functional ability of geriatric insurees in old people's homes.

- The main indicator for determination of the minimal healthcare staffing standard per number of geriatric insurees accommodated in old people's home residential and nursing parts is defined on the basis of determination of functional ability relative to physical mobility and mental independence of the geriatric patient/insuree as old people's home user. This indicator serves as a basis to determine the geriatric insuree category, thus establishing the grade of geriatric healthcare required. Determination of functional ability of geriatric insuree (in addition to determination of healthcare status and characteristics of unfavorable health
behavior) is the main criterion for admitting the individual to the residential or nursing part of the old people's home. This criterion dictates the category of the elderly user/geriatric insuree for designing the algorithm of services and extent of healthcare measures and procedures to be provided by the general/family medicine team with geriatric healthcare, offered at the specific primary healthcare level in old people's homes.

- **The healthcare staffing standard of the number of nurses per geriatric insuree is determined by the main criterion, i.e. determination of geriatric insuree functional ability, along with his/her health status and characteristics of unfavorable health behavior. In this way, use of the geriatric healthcare protocol is directed according to the geriatric patient/old people's home user category.**
  
  Determination of geriatric insuree functional ability implies determination of **physical mobility and mental independence** according to the uniformly defined evaluation, i.e. the mentioned main determinant categories of geriatric insurees determine the four grades of geriatric care, ranging from first (minimal) grade to fourth (maximal) grade, which are consistent with the European geriatric standards in residential and nursing parts of old people's homes. In the first phase of developing the Program of General/Family Medicine with Geriatric Healthcare, the multidisciplinary executive healthcare team proposed staffing standard for the team of family medicine physician and nurses, emphasizing necessary inclusion of physiotherapist and caregiver for the elderly. 
  
  Nursing documentation of geriatric healthcare was modified according to the selected Roper-Juchli model, implying document collection, sorting, storage and evaluation. It is so designed as to enable nurses to assess geriatric patient condition and make relevant conclusions, diagnose the problem, and determine the amount of nursing care for individual geriatric insuree, thus improving the quality of geriatric healthcare. Education of nurses was planned in all old people's homes all over Croatia, in collaboration with regional Gerontology Centers.


9. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part in designing the project model of Nutritional Gerontologic Standards for Menus at Old People's Homes and Gerontology Center. In the frame of GeroS inseparably linked with CEZIH (a project aiming at introduction of gerontology-public health indicators in CEZIH for monitoring and evaluation of gerontologic and geriatric healthcare needs), the role of malnutrition as a frequent issue in the elderly, in deep old age in particular, was emphasized, along with the role of regular nutritional status assessment within healthcare of the elderly. The deep old age group (+85) is the
fastest growing old age group with ever-greater prevalence of multimorbidity and functional disablement, especially when compared with early and middle old age groups.

- Institutionalized geriatric patients (with comorbidity) in nursing parts of old people's homes, hospitalized elderly, and welfare users are at a higher risk of malnutrition. Gerontology-public health indicators collected at Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, revealed malnutrition in 38.2% of users of the selected old people's homes, **pointing to necessary intervention with gerontology-public health measures including use of gerontologic nutritional standards in line with the Guidelines for Appropriate Nutrition of the Elderly (Lijec Vjesn. 2011;133:1-10).**

- The priority mission of the project model of implementation of the gerontologic nutritional standards for menus in old people's homes and gerontology centers is promotion of health and healthcare of the elderly and use of gero-prophylactic measures for protection of health and functional ability of the elderly in order to reduce multimorbidity caused by preventable diseases, to prevent polypharmacy and to rationalize geriatric healthcare utilization through the application of Guidelines for Appropriate Nutrition of the Elderly in institutional and extra-institutional gerontologic healthcare.

- **In this process, the use of NRS 2002 web service via GeroS inseparably linked with CEZIH is of utmost importance** in primary healthcare for determination of nutritional status of gerontologic insurees and geriatric patients, to serve as a basis for appropriate menus made at old people's homes. The risk factors and comorbidity in advanced age correlating with inappropriate and irregular nutrition have been scientifically demonstrated. The gerontology-public health indicators of hospitalization utilization and morbidity in the elderly point to the need of implementing gerontologic nutritional standards and guidelines for appropriate nutrition through development of respective menus at old people's homes and Gerontologic Centers, as well as in the field of health tourism for the elderly.

- The project will enable the use of gero-prophylactic program including gerontologic nutritional standards for menus, hygienic surveillance of surfaces for food preparation, and control of nutritive values and microbiological characteristics of food at old people's homes. Necessary is continuous re-education of professional staff in healthcare of the elderly on appropriate nutrition in old age, led by the Supreme Gerontology-Public Health Management of the Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, in the field of the co-implementing coordinating activity in providing interdisciplinary services for implementation of the gerontologic nutritional standards for menus at old people's homes.

- It is necessary to establish systematic control of implementation of guidelines for appropriate nutrition in the elderly, food safety and quality, and hand and surface hygiene on preparing food in old people's homes. Assessment of food quality in old people's homes (energy and nutritive evaluation), microbiological analysis of food, and control of working surface hygiene (food preparing) will be performed through periodical nutritional-gerontologic and microbiological surveillance in old people's homes. Gero-prophylaxis in institutional and extra-institutional care can be upgraded by continuous monitoring and studying healthcare needs and functional ability of the elderly, as well as by individualized gerontologic approach that includes
implementation of the Guidelines for Appropriate Nutrition of the Elderly through development of the model menus in old people's homes and Gerontology Centers as a mode of extra-institutional care for the elderly.

10. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part in the World Health Organization (WHO) gerontologic workshop held on July 9-10, 2015 in Bratislava, entitled Workshop and Consultation Age-Friendly Environments in Europe (AFEE), attended by representatives of the following countries: Croatia, Czech Republic, Slovakia and Slovenia. The topic of Centers of Gerontology – Institute of Public Health and Gerontology Centers in Croatia, prepared by Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, aroused high interest of the WHO Workshop participants. Results were presented of the successful Croatian model of extra-institutional care for the elderly through Gerontology Centers, Centers of Healthcare Gerontology of the Public Health Institute, and GeroS/CEZIH project for monitoring and evaluation of healthcare needs and functional ability of the elderly, aiming at promotion of healthy active aging within healthcare of the elderly. The participants of the Workshop and Consultation Age-Friendly Environments in Europe (Bratislava, 2015) showed great interest in the GeroS project (as a CEZIH subsystem for monitoring and evaluation of healthcare needs and functional ability of gerontologic insurees and geriatric patients), which connects all those involved in providing healthcare and welfare services for the elderly, as well as in the gerontologic-public health indicators in extra-institutional care for the elderly (Gerontology Centers, 2004-2015) in Croatia.

11. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part in the program entitled Eco-Smart Housing for Elderly (Eko-pametno stanovanje za starije), held in Trieste, May 14, 2015, attended by representatives of the following countries: Italy, France, Spain, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, and Serbia. The WIDER EU project supports innovative projects directed to inter-sector collaboration, energy efficiency, and launching and development of new products for eco-smart housing solutions for the elderly, within the concept of active and independent aging. Our gerontologic team presented the topic of Gerontology Centers (extra-institutional care) – Croatian model of successful practice and smart housing for elderly, highlighting the major role of Gerontology Centers (extra-institutional care) in eco-smart housing solutions for the population older than 65, with necessary individualized gerontologic approach focused on functional ability of the elderly.

ABBREVIATED REPORT 2016

1. In 2016, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part in the organization and continuous gerontologic educational activity through Gerontologic Panels, providing education in gerontology primarily intended for family medicine teams and geriatric nurses, as well as other professionals involved in healthcare of the elderly. The following gerontologic panels were held in 2016:

- **Gerontologic creativity workshop, February 23, 2016: Basic guidelines of geriatric pharmacotherapy**
  Lecturer: Academician Zijad Duraković, MD

- **Gerontologic creativity workshop, March 22, 2016: Role of primary healthcare in palliative care of the elderly**
  Lecturer: Matija Rimac, MD, Palliative Care MAS

- **Gerontologic creativity workshop, April 26, 2016: Truths and prejudices on vitamins and minerals for the elderly**
  Lecturer: Prof. Marica Medić-Šarić, PhD, Phar M

- **Gerontologic creativity workshop, May 20, 2016: Gero-prophylaxis and healthcare recognition of abuse of the elderly**
  Lecturers: Assist. Prof. Spomenka Tomek-Roksandić, MD, PhD, Višnja Fortuna, MS, Prof. Silvia Rusac, PhD

- **200th Jubilee Gerontology Panel, December 13, 2016 – Second promotion of the first university textbook Alzheimer's Disease and Other Dementias – Early Detection and Healthcare**
  Lecturers: Assist. Prof. Spomenka Tomek-Roksandić, MD, PhD, Prof. Ninoslav Mimica, MD, PhD, Marija Kušan Jukić, MD, PhD

2. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health was active in interdisciplinary and inter-sector synergy for implementation of scientific and professional achievements in healthcare of the elderly with examples of successful and good practice in gerontologic care for the elderly; in 2016, in coordination with Dental Polyclinic in Zagreb, took part in the activities focused on providing appropriate gerontologic-dental services. Gerontologic dental medicine doctors took active part with 5 lectures and 4 posters at the 3rd Croatian Gerontologic and Geriatric Congress with International Participation. A pilot project entitled Compulsory Oral Cavity Examinations and Management in the Elderly is under way, planning to perform initial geronto-dental examination of oral cavity in individuals aged >65 with filling-out the healthcare questionnaire (geronto-dental card, plan of treatments required, user education with brochures on oral health, geronto-dental counseling at Dental Polyclinic in Zagreb (no referral slip required), control examination in 6-12 months with control of the treatments performed, and report on dental follow up examinations). Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health in coordination with Dental Polyclinic in Zagreb has established regular collaboration in the field of geronto-dental
medicine with a number of old people's homes, e.g., Maksimir, Sveta Ana, Pešćenica, Park, Trešnjevka, Centar, Sveti Josip, and Ksaver, where examinations are performed and lectures on geronto-dental medicine topics held.

3. The invited lecture **Socio-economic and geronto-technological innovative programs contributing to the development of silver economy**, held by Assist. Prof. Spomenka Tomek-Roksandić, MD, PhD at 24th traditional scientific meeting **ECONOMIC POLICY OF CROATIA IN 2017 and published in the book by Croatian economists**, is of utmost importance for the inter-sector approach in healthcare of the elderly.

4. In 2016, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part in the education in gerontology, **geriatrics and geriatric healthcare** for 6th year medical students and at postgraduate nursing study, School of Medicine, University of Zagreb and School of Medicine, University of Split.

5. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health took active part in developing the curriculum for two programs of the Postgraduate Study in Gerontology and Geriatrics at Andrija Stampar School of Public Health, School of Medicine, University of Zagreb and Zagreb University Hospital Center.

THIRD CROATIAN GERONTOLOGIC AND GERIATRIC CONGRESS WITH INTERNATIONAL PARTICIPATION

6. The prestigious 3rd Croatian Gerontologic and Geriatric Congress with International Participation was held on November 15-17, 2016 in Opatija, attended by 650 participants from Croatia and abroad. The main Congress organizers were Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health and Croatian Society of Gerontology and Geriatrics of the Croatian Medical Association. There were 120 lectures and 87 posters presented by the leading experts in gerontology and geriatrics from Croatia, Switzerland, Austria, Sweden, Norway, and from the countries bordering on Croatia. Besides the main organizers, the following entities took part in the organization of the 3rd Croatian Gerontologic and Geriatric Congress with International Participation, held on November 15-17, 2016 in Opatija, Grand Hotel Adriatic: Zagreb City Office for Health; Zagreb City Office for Social Protection and People with Disabilities; Croatian Academy of Sciences and Arts, Department of Medical Sciences; and University of Zagreb.

- The relevance of the 3rd Croatian Gerontologic and Geriatric Congress with International Participation was confirmed by the great interest of scientists and professionals from various fields involved in healthcare of the elderly, in particular healthcare and social welfare of the elderly in Croatia.
Experiences and results collected in Croatian and international gerontologic studies were presented at the 3rd Croatian Gerontologic and Geriatric Congress with International Participation, in particular referring to the following five main Congress topics: 1. Gerontology in Europe and Croatia – interdisciplinary approach in healthcare of the elderly with development of geroprophylaxis; 2. Geriatrics and geriatric healthcare in Croatia and Europe with examples from daily practice and projection of geriatric healthcare; 3. Gerontologic dental medicine; 4. Economic development, retirement funds and geronto-technology; and 5. Scientific concepts on the theories of aging. Invited lecturers at the Congress were Academician Zijad Duraković; Prof. Nenad Bogdanović, PhD; Prof. Davor Pavuna, PhD; Ivana Radman, PhD; Prof. Željko Krznarić, PhD; Prof. Nikica Gabrić, PhD; Academician Vida Demarin; Prof. Velimir Šimunić, PhD; Prof. Mirko Petrović, PhD; Prof. Marjeta Mišigoj-Duraković, PhD; Prof. Tonko Vlak, PhD; Sani Pogorilić, PhD; Prof. Aleksandar Štulhofer, PhD; Prof. Adnan Ćatović, PhD; Irena Dželetović Milošević, MD; Slavens Radovanović, BA; and other eminent experts from Croatia and other European countries.

The great professional interest in the Congress was confirmed by 120 presentations and 87 posters in gerontology, accepted by affirmative reviews, focused on the main topics of the 3rd Croatian Gerontologic and Geriatric Congress with International Participation, elaborating gerontologic and/or geriatric issues and proposing possible solutions in gerontologic practice. It could be perceived as a result of professional approach and co-responsibility for solving gerontologic and geriatric priority problems, tasks and duties in healthcare of the elderly in everyday interdisciplinary, healthcare and social welfare services, and inter-sector gerontologic-public health service. As gerontologic and geriatric services are highly interdisciplinary and inter-sectoral ones, the high interest of Congress participants from various fields dealing with health and healthcare of the elderly is quite understandable. The Congress was attended by gerontologists, geriatricians, ‘geriatric’ nurses, social workers, public health specialists, epidemiologists, specialists in social gerontology, internal medicine, gastroenterology, family medicine, psychiatry and psycho-geriatrics, geriatric healthcare, cardiology, orthopedics, physical medicine, gerontologic dental medicine, geronto-psychology, geronto-pharmacology, neuro-geriatrics, ecology, informatics, infectious diseases and microbiology, theology, geriatric oncology, ophthalmology, medical biochemistry, geronto-anthropology, gerontologic nutrition science, biology, sociology, physics, surgery, radiology, geronto-technology, management and rights of the elderly, pathology, geronto-dermatovenereology, geronto-kinesiology, physiotherapy, health tourism for the elderly, occupational therapy for the elderly, pharmacists, sanitary engineer, rehabilitators, professionals in geronto-economics, business and enterprise, insurance funds and gerontogogics, architecture and smart housing for the elderly.

At the 3rd Croatian Gerontologic and Geriatric Congress with International Participation, 650 participants from a great variety of professions showed high interest in improving health state of the elderly, as well as the systems of healthcare, social welfare, economics, insurance funds, education, tourism and science in the frame of applied gerontology. The program of this prestigious gerontologic congress included presentations by renowned experts in the fields of gerontology, geriatrics and geriatric healthcare from Croatia and other European countries, in particular pointing to the current gerontologic-public health priorities, genetics of aging, gerontologic and geriatric services, theories of aging, prevalence of healthcare needs and functional disablement of the elderly according to Croatian counties and regions of Europe,
programs of primary, secondary, tertiary and quaternary prevention for the elderly, with program and guide for active healthy aging in geroprophylaxis of risk factors for diseased aging and for promotion of active, healthy and productive aging. It also included gerontologic standards, algorithms, guidelines, diagnosis, treatment, geriatric healthcare and rehabilitation of hospitalized geriatric patients, in family medicine, in nursing homes, day hospitals and day-care centers for the elderly and patients suffering from Alzheimer's disease, and imperative development of extra-institutional care for the elderly through the activities of Gerontology Centers. The program emphasized the standards set by the Gerontology-Public Health Service/Centers of Healthcare Gerontology at Institutes of Public Health in Croatian counties and the City of Zagreb.

- The main topics of the Congress ensured coverage of all those narrower fields of gerontologic and geriatric services, expected to prove useful and successful for all participants through the exchange of knowledge and skills, concepts and know-how in solving gerontologic-public health and geriatric issues in practice. The aim and purpose was to promote healthcare of the elderly, exchange of empirical knowledge with examples of good practice among various professionals involved in gerontologic and geriatric services, and to guide and stimulate further development of gerontology, geriatrics and geriatric healthcare as a profession.

UNIVERSITY READING: TEXTBOOK ALZHEIMER'S DISEASE AND OTHER DEMENTIAS – EARLY DETECTION AND TREATMENT

- At the 3rd Croatian Gerontologic and Geriatric Congress with International Participation, the university textbook entitled Alzheimer's Disease and Other Dementias – Early Detection and Treatment was first presented to the audience. This valuable textbook resulted from interdisciplinary collaboration and synergistic efforts of 73 coauthors-professionals from various fields involved in healthcare of the elderly. Alzheimer's Disease and Other Dementias – Early Detection and Treatment is the first university textbook on Alzheimer's disease developed through interdisciplinary gerontologic approach by coauthors from various professions involved in care for psychogeriatric patients with Alzheimer's disease and other dementias, and in the promotion of active healthy aging. The textbook will serve for education and continuous re-education in gerontology, geriatrics, geriatric healthcare and psychogeriatrics as a priority, and is intended for medical students, postgraduate students in geriatrics, psychiatry, public health, epidemiology, gerontology, specialist of general/family medicine, geriatricians, psychogeriatricians, psychologists, neurologists, nurses, social workers, physiotherapists, gerontologic nutritionists, geronto-dental medicine doctors, geronto-kinesiologists, geronto-managers and lawyers involved in healthcare of the elderly.

TENTH GERONTOLOGIC BOOK GERONTOLOGIC-PUBLIC HEALTH INDICATORS OF HEALTH STATE IN THE ELDERLY IN CROATIA AND CITY OF ZAGREB 2014-2016/2011 CENSUS

- At the 3rd Croatian Gerontologic and Geriatric Congress with International Participation, the gerontologic book entitled Gerontologic-Public Health Indicators of Health State in the Elderly in Croatia and City of Zagreb 2014-2016/2011 Census was
first presented to the audience. The book offers comprehensive gerontologic health-statistical documentation on evaluated healthcare needs and causes of functional disablement in target groups of the elderly and structure of gerontologic and geriatric care utilization. Results obtained by use of GeroS/CEZIH are presented in the book for the first time. This book will undoubtedly serve as a reference source for development of gerontologic programs, gerontologic-public health standards and algorithms crucial for all those involved in healthcare of the elderly. The book *Gerontologic-Public Health Indicators of Health State in the Elderly in Croatia and City of Zagreb 2014-2016/2011 Census* is the result of long-standing interdisciplinary collaboration of 852 professionals engaged in healthcare of the elderly from health and social aspects.

**Main conclusions of the 3rd Croatian Gerontologic and Geriatric Congress with International Participation**

- Fast implementation to enable utilization of the GeroS/CEZIH information system in gerontology and geriatrics as the priority support in the collection, searching and management of gerontologic-public health data and information for promotion of healthcare of the elderly, and the system enabling interactive digital management of the gerontology state-of-the-art. The main purpose of GeroS/CEZIH is to computerize monitoring and evaluation of outcomes of all healthcare and social welfare services provided per individual gerontologic and geriatric insuree. Currently there is no direct data exchange between the healthcare and social welfare systems, thus it is just GeroS/CEZIH that connects the two systems, providing its users integrated insight into data relevant for care of gerontologic and geriatric insuree across all three healthcare levels, and in old people's homes and foster families within social welfare. GeroS/CEZIH extends digitally available data set on gerontologic and geriatric insuree through computerization of files entered by physicians, social workers, nurses, physiotherapists, occupational therapy and palliative care files and related processes, and ensures prompt and efficient availability of substantial information and changes to all those involved in healthcare of the elderly, according to their authorization and tasks within the system. GeroS/CEZIH has been established primarily to enable monitoring of therapeutic outcomes in geriatric patients, geroprophylaxis, correction and improvement of current standards and norms in gerontology, geriatrics and geriatric healthcare, and rationalization of the growing geriatric utilization and working hours of various professionals included in the interdisciplinary team.

- Efficient, available, appropriate and evaluating gerontologic-public health and geriatric service across the four regular gerontologic-public health fields is necessary in healthcare of the elderly.

- For promotion of the gerontologic-public health service, proper connections and collaboration are necessary among the three levels of gerontologic-public health management as a process of planning, monitoring, organizing, evaluating and proposing healthcare measures and procedures in healthcare of the elderly, aiming at promotion of healthcare of the elderly, in order to ensure geriatric and gerontologic healthcare and to influence development of positive marketing-economic healthcare state policy, performed through three levels of planning. The basic level of gerontologic-public health management includes general/family medicine offices, old people's homes, gerontologic centers, nursing institutions, geriatric
hospitals/prolonged treatment, psychogeriatrics and other specialist consultation services, geronto-dental medicine, etc. These also serve as a source of data on gerontologic insurees or geriatric patients, and perform the operational level of planning. The medium level of gerontologic-public health management includes county/regional Centers for Healthcare Gerontology at Institutes of Public Health, responsible for coordination with those performing monitoring of healthcare needs. They perform tactical level of planning. The highest level of gerontologic-public health management includes Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, which performs strategic level of planning according to the principle 'from top to bottom', and vice versa. Educational benefit of the Congress lies in the interdisciplinary and inter-sectoral synergy aiming at the application of scientific concepts primarily through exchange of experiences and examples of good and successful practice in gerontologic care for the elderly.

- The importance of amendment to the components of the "4 I" geriatric syndrome (immobility, loss of independence, instability and incontinence) with the fifth component (unfavorable therapeutic outcome with polypharmacy) for individual geriatric patient via GeroS/CEZIH was underlined.

- National guidelines for healthcare of the elderly 2016-2025 should be developed as a recognizable Croatian gerontologic model consistent with European documents.

Accordingly, the educational role of the prestigious 3rd Croatian Gerontologic and Geriatric Congress with International Participation at the national, regional and European levels is crucial, in particular through exchange of experiences and examples of good and successful practice in healthcare of the elderly in both institutional and extra-institutional care for the elderly, with evaluation of therapeutic procedures and outcomes, and of overall gerontologic rehabilitation with the use of geroprophylactic measures. This points to the need of continuous education in gerontology, geriatrics and geriatric healthcare of all professionals included in the interdisciplinary gerontologic team involved in healthcare of the elderly.


8. The first university textbook entitled Alzheimer's Disease and Other Dementias – Early Detection and Treatment was presented at the 200th Jubilee Gerontology Panel held on December 13, 2016 in the Croatian Medical Association. Reviewers: Academician Zijad Duraković, and Prof. Zdravko Ebling, PhD; Editors: Assist. Prof. Špomenka Tomek-Roksandić, PhD, Prof. Ninoslav Mimica, PhD, Marija Kušan Jukić, PhD, and Anda Raič, BA on behalf of Medicinska naklada, the printing house, emphasized the structure represented by 73 authors as an interdisciplinary team consisting of professionals and scientists in gerontology, included in development of this first but comprehensive textbook in the field. The university textbook Alzheimer's Disease and Other Dementias – Early Detection and Treatment has 32 chapters: 9 chapters – introductory topics; 19 chapters – specific topics; appendix with educational tests of knowledge about Alzheimer's disease and illustrated examples from practice of early detection of Alzheimer's disease. Gerontology as the latest scientific discipline and geriatrics as the most prestigious medical residency according to UEMS demonstrate that educational system should respond to the current interest market of
developing novel specialist interdisciplinary gerontologic professions, which in turn requires obligatory university reading, here exemplified by the first such textbook in Croatia, *Alzheimer's Disease and Other Dementias – Early Detection and Treatment*. The textbook will serve for education and continuous re-education of various professionals already involved or to be involved in healthcare of geriatric and psychogeriatric patients with Alzheimer's disease. It is the first university textbook on the topic that was lacking in the Croatian required university reading on the topic, which will contribute considerably to development of gerontology and geriatrics, psychogeriatrics in particular, as well as to specialist training in general/family medicine. The textbook is intended for medical students, postgraduate students in geriatrics, psychiatry, public health, epidemiology, gerontology, specialists in general/family medicine, geriatricians, psychogeriatricians, psychologists, neurologists, geriatric nurses, social workers, physiotherapists, gerontologic nutritionists, gerontologic dental medicine doctors, geronto-kinesiologists, occupational therapists for the elderly, geronto-managers, and lawyers involved in healthcare of the elderly.

9. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health published the gerontologic book entitled *Gerontologic-Public Health Indicators of Health State in the Elderly in Croatia and City of Zagreb 2014-2016/2011 Census*, first presented at the 3rd Croatian Gerontologic and Geriatric Congress with International Participation, held in Opatija. Members of the Croatian Society of Gerontology and Geriatrics of the Croatian Medical Association participated in writing this valuable book, which has 18 chapters offering graphic, tabular and textual presentation and description of all gerontologic-public health statistical healthcare indicators in the elderly in Croatia and City of Zagreb in relation to demographic structure of aging, functional ability and healthcare needs of the elderly as identified in the GeroS/CEZIH implementation program model, rate of hospitalization and utilization of hospital days in early, middle and deep old age, along with the causes of most frequent diseases and prevalence of particular disease groups according to acute and chronic treatment, residence, catchment population of geriatric patients, mortality indicators per cause of death in early, middle and deep old age, category protocol for implementation of the four grades of geriatric healthcare, use of questionnaire on quality indicators at old people's homes, examples of good gerontologic and geriatric practice in healthcare of the elderly from old people's homes, institutions for home care, gerontologic centers – extra-institutional care for the elderly to foundations, societies and clubs for the elderly, geroprophylactic programs of primary, secondary, tertiary and quaternary prevention for the elderly, gerontologic standards and algorithms, professional and EU gerontologic projects, glossaries in gerontology and geriatrics, gerontologic-public health indicators from the registry of retired healthcare professionals (physicians and nurses), examples of good group family medicine practice for the elderly, indicators of vaccination in the elderly in 2016, utilization of medicines in individuals older than 65, initial gerontologic-public health indicators provided by CEZIH at the primary healthcare level, list of 850 professionals providing gerontologic and geriatric healthcare as co-worker or partner in gerontologic-public health service in Croatia, and 9 tests in fundamentals of gerontology and geriatrics with a list of CROSBI professional and scientific gerontologic publications. The 10th gerontologic book has been reviewed by Prof. Emeritus Ana Stavljenić-Rukavina, with editors Zvonimir Šostar, MD, and Prof. Krunoslav Capak, MD, PhD, since the book appeared in 2016 through the partnership of the Croatian Institute of Public Health and Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia.
10. In 2016, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, continued promoting the programs of gerontologic-public health service, in particular the following ones:

- integrated gerontologic programs, programs of measures and procedures for promotion of health and healthcare of the elderly, including the Program of Primary, Secondary, Tertiary and Quaternary Prevention for the Elderly, implementation and evaluation of the Program of Four Grades of Geriatric Healthcare with Category Protocol: Implementation of the GeroS/CEZIH Program (for panels, taking more than 3 drugs in the elderly, unfavorable health behavior/physical and mental inactivity, alcoholism, smoking, dependence, nutritional status/malnutrition, obesity/NRS 2002 web service, treatment outcome), geronto-dental medicine measures, use of guidelines and tests in healthcare of the elderly, and monitoring of quality indicators in healthcare of the elderly. Use and evaluation of the Questionnaire on Monitoring of Quality Indicators at Old People's Homes in 2016 is aimed at identifying, monitoring, evaluating, assuring and improving the quality in healthcare and social welfare of the elderly. The aim and purpose of the published gerontologic tests (http://www.stampar.hr/hr/testovi-iz-zdravstveneg-gerontologije), e.g., Test of Knowledge about Alzheimer's Disease and Other Dementias, is to promote timely detection of focused gerontologic and geriatric problems in daily routine, and education and re-education of various professionals in healthcare of the elderly included in the interdisciplinary gerontologic team (physicians specialists in public health/epidemiology and in general/family medicine re-educated in gerontology, 'geriatric' nurses re-educated in geriatric healthcare, social workers, occupational therapists, gerontologic dental medicine doctors, geronto-psychologists, geronto-psychiatrists, geronto-kinesiologists, etc.).

11. In 2016, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, supplemented the program of geroprophylaxis measures with quaternary prevention for the elderly. According to gerontology glossary, the objective of quaternary prevention for the elderly is to avoid excessive medical interventions, unnecessary medication and long-term hospital stay, and to coordinate professional intervention in healthcare of the elderly with the possible therapeutic outcome and occurrence of polypharmacy, objectively determined indication and healthcare need of the elderly, with due consent given by the elderly. Quaternary prevention, which in particular refers to the individual gerontologic approach to geriatric patient (OM097 panel CEZIH), does not only reduce unnecessary medication but also helps establish better relationship between the physician and an elderly patient, with mutual confidence that is crucial for patient compliance with medication. On the incentive from the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, two diagnostic-therapeutic procedures (DTP) have been included which refer specifically to insurees aged >65 and can be charged to the Croatian Institute of Health Insurance (CIHI) by general/family medicine physicians; these are DTP OM099 Revision of therapy in all patients aged >65 using 3 or more prescription drugs; and DTP OM097 Revision of drugs for insuree aged >65 using 3 or more prescription drugs. Revision of medications within the domain of quaternary prevention greatly contributes to improved quality of gerontologic and geriatric healthcare.

12. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia has continuously contributed to the promotion of geroprophylaxis and specific
primary healthcare at old people’s homes. The main goal is to prevent the geriatric ‘domino effect’ which as a rule occurs in geriatric patients. In these patients, geroprophylactic measures should be applied in order to prevent disease complications, functional disablement, and development of the "4 I” geriatric syndrome (immobility, loss of independence, instability and incontinence) with the fifth component of unfavorable therapeutic outcome with polypharmacy, which will be monitored via panels on GeroS defined CEZIH/determinants.

13. Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia participated in the implementation of the Program of Four Grades of Geriatric Healthcare with Category Protocol defined by nursing geriatric documentation, generally performed by the computer application Dogma/monitored by GeroS/CEZIH.

- Out of 148 category protocols sent to old people's homes across Croatian counties and City of Zagreb, 31 filled-out category protocols were received in response. Analysis of the category protocols received in 2016 according to grades of geriatric healthcare showed the following: 1500 (33.18%) users were in grade I, 1003 (22.19%) users in grade II, 1258 (27.83%) in grade III, and 760 (16.81%) users in grade IV geriatric healthcare, yielding a total of 4521 users. Providing efficient and efficacious, evaluated geriatric healthcare in both institutional and extra-institutional geriatric care will be rationalized and improved through GeroS/CEZIH.


16. In 2016, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Croatian Society of Gerontology and Geriatrics of the Croatian Medical Association, and Croatian Institute of Health Insurance continued working on the process of computerization of healthcare of the elderly via GeroS/CEZIH, at all three levels from general/family medicine and geriatric healthcare at old people's homes through long-term treatment of geriatric patients, home-visiting service, geriatric healthcare at home and palliative-geriatric care to the service provided by Gerontology
Center as extra-institutional care for geriatric insurees, gerontologic dental medicine service and gerontological caregivers.

- The GeroS/CEZIH project has been recognized by European project funds as a project model of integrated care for the elderly with multimorbidity (Horizon 2020, SELFIE Sustainable intEgrated care modeLs for Multi-Morbidity: Delivery, Financing and performance 2015-209), and in EU project (Europe 2020, European innovation Partnership on Active and Healthy Aging – Reference Site).
- In 2016, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia participated in the implementation and evaluation of the innovative project of NRS 2002 web service as a component of the GeroS/CEZIH program. From the geroprophylaxis standpoint, implementation of the NRS 2002 web service is of utmost importance for timely recognition of risk factors for malnutrition in gerontologic insurees and geriatric patients.
- Following the programs of evaluation of nutritional status of the elderly (2016), a project model of gerontologic nutritional standards for menus at old people's homes and Gerontology Center will be designed using the Croatian professional guidelines for nutrition of the elderly. The project will ensure implementation of geroprophylactic programs that include Nutritional-Gerontologic Standards for Menus and for surveillance of surface hygiene (surface for food preparation), and control of nutritive values and microbiological characteristics of food in old people's homes, aiming at promotion of health of the elderly using the Croatian professional guideline for nutrition of the elderly.
- In 2016, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia took active part as a professional partner in the implementation of the project of introducing a new occupation of GERONTOLOGICAL CAREGIVERS as auxiliary healthcare workers in geriatric healthcare, with the Public Open University from Zagreb as the main carrier (program duration: 1600 hours).
- In 2016, Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia included was actively included in the projects and sub-projects of smart housing for the elderly and 'silver economy', which also are of great importance.
- Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health, in collaboration with the Zagreb-Centar Health Center is partner in the project European Innovation Partnership on Active and Health Aging.
- The project of issuing the university textbook entitled Alzheimer's Disease and Other Dementias – Early Detection and Treatment (2015-2016).

17. **Plan of activities and tasks of the Reference Center for Healthcare of the Elderly, Ministry of Health, Republic of Croatia, Department of Public Health Gerontology, Dr Andrija Štampar Teaching Institute of Public Health in 2017-2018:**

- Continuing performing the most complex tasks and activities related to selected indicators in the first field of regular gerontologic-public health service (2017-2018).
• Gerontologic-public health analysis of the structure of target indicators on elderly population in early, middle and deep old age according to Croatian counties and City of Zagreb.

• Evaluation of implementation of the program of four grades of geriatric healthcare with nursing documentation and category protocol in old people's homes in Croatia and City of Zagreb, 2017-2018.

• Implementation of the program of four grades of geriatric healthcare with nursing documentation and category protocol in old people's homes in Croatia and City of Zagreb, 2017-2018.

• Implementation of the Questionnaire on Monitoring of Quality Indicators at Old People's Homes, Croatia, 2017-2018.

• Gerontologic-public health analyses based on gerontologic database of the Sub-registry of Patients with Alzheimer's Disease and Other Dementias.

• Professional-methodological assistance in coordination and gerontologic education – gerontologic panels, gerontologic workshops and creative workshops, symposia, courses, 2017-2018.

• Introducing additional gerontologic parameters via panels from GeroS/CEZIH for monitoring and evaluation of healthcare needs and functional ability of gerontologic insurees and geriatric patients.

• Continuing the GeroS/CEZIH project in the frame of the EU SELFIE project, 2017-2018.

• Continuing partnership on the project European Innovation Partnership on Active and Healthy Aging, 2017-2018.

• Developing project model of nutritional-gerontologic standards for menus and working surface hygiene in old people's homes, 2017-2018.

• Conducting the program from the first university textbook Alzheimer's Disease and Other Dementias – Early Detection and Treatment.

• Conducting the socioeconomic and geronto-technological innovative programs as a contribution to development of 'silver economy', 2017-2018.


• Continuing work on the submitted project entitled Silver Economy in collaboration with Public Open University from Zagreb, with the aim to contribute to economy growth through employments in the field of care for the elderly.

• Development/supplementation and evaluation of gerontologic-public health tests and guidelines, 2017-2018.

• Continuing activities to improve the contents of the tests in healthcare gerontology (www.stampar.hr/gerontologija), 2017-2018.

• Supplementing the recommended measures for healthcare of the elderly at exposure to cold weather/low air temperatures, 2017-2018.

• Supplementing the recommended measures for healthcare of the elderly at exposure to high air temperatures (>30 °C), 2017-2018.

• Continuing gerontologic-public health activities of the Department of Public Health Gerontology as a partner on EU projects, 2017-2018.

• Supplementation and promotion of the program of basic geroprophylactic measures in primary, secondary, tertiary and quaternary prevention for the elderly, 2017-2018.