1. **VISION**

Continuous improvement of health care and quality of life of people with diabetes, aimed at achieving the quality and length of life of healthy persons throughout the Republic of Croatia, regardless of the place of residence.

Health promotion, prevention and treatment of diabetes and its complications by means of an intensified organizational, professional and scientific approach.

2. **MISSION**

Preparation, initiation and evaluation of comprehensive programs for early treatment of diabetes and its complications, early detection and control, with self-monitoring of patients with diabetes and the aid of the community as a major component.

Increased awareness of the general population and among health professionals of current possibilities and future needs in the prevention of diabetes and its complications.

Organization of education on the approach and treatment of persons with diabetes of all ages and of their families, friends, coworkers and health care teams.
Implementation of health care of children with diabetes by professionals educated in diabetes treatment and work with children, as well as ensuring that their families are provided with the necessary social, economic and emotional support.

Implementation of health care of pregnant women with diabetes by professionals educated in the treatment of diabetes in pregnancy.

Further development of health care, educational and research activities of the existing centers of excellence aimed at persons with diabetes and founding of new centers of excellence where there is the need and potential centers.

Promotion of independence, equity and self-care for all people with diabetes.

Solving all possible barriers to comprehensive inclusion of people with diabetes in the society.

Introduction of efficient measures for the prevention of diabetes complications:

1. reduction of diabetic comas by 90% at the national level (deadline – by the end of 2004)
2. reduction in hospital days of diabetic patients to a double number of hospital days of the general population (deadline – by the end of 2004)
3. reduction in sick-leave days of diabetic patients to a double number of the standard anticipated for the Republic of Croatia (deadline – by the end of 2004)
4. reduction in low extremity amputations due to diabetes by 30% (deadline – by the end of 2006)
5. reduction in blindness caused by diabetes by 30% (deadline – by the end of 2006)
6. reduction in the number of patients with chronic renal insufficiency due to diabetes by 30% (deadline – by the end of 2006)
7. bring the outcome of pregnancies in women with diabetes closer to the one in healthy women (deadline – by the end of 2004)
8. reduction in morbidity and mortality from coronary heart diseases in patients with diabetes through programs of early detection and reduction of risk factors.

Organization of follow-up and control of health care of persons with diabetes, treatment and self-care as well as laboratory tests in the diagnosis, using modern information technology in quality evaluation.

Improvement of cooperation with international, and particularly European institutions and World Health Organization (WHO) on research programs dealing with professional and educational work, and development of national and regional networks, with active partnership with organizations of people with diabetes.

Initiation of urgent health activities in accordance with the WHO strategy «Health for All», with joint activities of WHO and International Diabetes Federation – Europe (IDF(EU)) aimed at accelerating, motivating and implementing the set goals.

3. PERFORMERS OF DIABETES CARE MEASURES IN THE REPUBLIC OF CROATIA

3.1. Reference Center for Diabetes Care

The Reference Center of the Ministry of Health is a health institution or part of a health institution appointed by the Minister of Health, based on the proposal by the National Health Council and an expert medical association's opinion, and under the provisions of the Act on Health Care and criteria defined by the By-law on Criteria for the Appointment of a Reference Center of the Ministry of Health. These criteria are described in the By-law on Criteria for the Appointment of a Reference Center of the Ministry of Health (Official Gazette No. 33/94, 34/97).

A reference center follows, studies and improves conditions in the area of its interest, offers professional-methodologic help, establishes doctrinary measures for the diagnosis and treatment of particular diseases, evaluates and gives opinion on the methods, procedures and programs of work in the part of health care of its interest, and follows professional training of health professionals.

With the aim to achieve as good an organization and quality of work as possible, and the chief mission of having properly treated and satisfied patient, the Vuk Vrhovac University Clinic has started a process of establishing a system of quality control.
Such a system includes all components of the work process in the University Clinic (professional work, medical and nonmedical personnel, computerization, technical system and laboratories), inhouse work processes and quality control, and, owing to interlaboratory cooperation, especially at the European level, international processes of quality control.

The work of a reference center is performed through diabetology team work.

Team (adults):
- a diabetologist or internist with a completed 1st category course
- a nurse
- a dietitian
- a podiatrist
- a psychologist

Team (children):
- a pediatrician diabetologist and endocrinologist or a pediatrician with a completed postgraduate course in diabetology
- a nurse
- a dietitian
- a podiatrist
- a psychologist

Team (pregnant women):
- a trained gynecologist
- an internist – diabetologist
- a pediatrician – neonatologist
- a nurse
- a dietitian

An ophthalmologist, a neurologist and an angiologist must be included in the team at a reference center, and the possibility of performing electrocardiography (ECG) is mandatory.

3.3. County Center for Health Care of Persons with Diabetes

The leading institution in a county from the methodologic, scientific and professional points of view, coming before all centers in the county.

Team (adults):
- a diabetologist or an internist with a completed 1st category course
- a nurse
- a dietitian
- a podiatrist
- a psychologist

Team (children):
- a pediatrician diabetologist and endocrinologist or a pediatrician with a completed postgraduate course in diabetology
- a nurse
- a dietitian
- a podiatrist
- a psychologist
- an educator

Team (pregnant women):
- a trained gynecologist
- an internist – diabetologist
- a pediatrician – neonatologist
- a nurse
- a dietitian

An ophthalmologist, a neurologist and an angiologist are required as consultants, and, in case there are no such specialists, the county center should rely on the regional center.

3.4. Center for Health Care of Persons with Diabetes

The second center in a county which takes care of persons with diabetes.

The teams are the same as in the county center, except for coordination, which is performed by the county center.

3.5. Family physician’s clinic

Family physician, a physician of the first contact, is specifically trained in general medicine and, together with his/her team (a nurse, a field nurse), provides
comprehensive and continuous health care to the given population, the family being treated as a basic unit of health risk.

A family medicine physician is specifically and professionally trained in observing the social, psychologic and biologic effects on health behavior of individuals, family and entire population under its care, and in dedicating a major part of his/her activities to the prevention of the disease and promotion of health.

Team:
- a physician specialized in general medicine
- a nurse
- a field nurse on an area level (responsible for the communication between the physician and associations)

3.6. Societies of the Croatian Medical Association

- Croatian Society for Diabetes and Metabolic Diseases of the Croatian Medical Association
- Croatian Pediatric Society of the Croatian Medical Association
- Croatian Society for Perinatal Medicine of the Croatian Medical Association

3.7. Association of Diabetes Societies of the Republic of Croatia

The Croatian Association of Diabetes Societies initiates and participates in bringing together persons with diabetes in local societies throughout Croatia, in order to introduce them with the problems of diabetes and teach them how to cope with them through different activities. By their participation in the prevention and education of people with diabetes, the lay societies help in achieving better diabetes control and contribute to better quality of life of persons with diabetes and their families.

3.8. Diabetes Society

The societies primarily bring together persons with diabetes, carry out different activities and actions engaging activists – volunteer members of the societies. These activities are carried out in cooperation with local sponsors, companies, schools, other related societies and humanitarian organizations.

According to pediatricians’ recommendation, societies of parents of children with diabetes and societies of adolescents with diabetes should be included.

3.9. Croatian Pharmaceutical Society

Basic characteristics of pharmaceutical care related to diabetes are counseling on healthy lifestyle, recognizing risk factors aimed at early diabetes detection, counseling on correct use of prescribed drugs, and participation in the follow-up of treatment course with the aim to improve the outcome of therapy and contribute to the quality of life of persons with diabetes.

3.10. Public Health Institute of the Republic of Croatia

The Public Health Institute of the Republic of Croatia and other Public Health Institutes participate, together with the Reference Center, in the registration, reporting and evaluation of the implementation of health care measures according to the existing legal acts, including preventive measures. They perform analysis of the epidemiologic situation, prepare and publish annual publications on the incidence, prevalence and mortality from diabetes in the Republic of Croatia. They keep Diabetes Register in cooperation with the Reference Center.

3.11. Ministry of Health of the Republic of Croatia

By enacting acts and by-laws, the Ministry defines the plan and program of health care measures within basic health insurance. The implementation of health care measures ensures the right to health care of persons ensured at primary health insurance level, defines subjects responsible for the implementation of these measures and method of their implementation.

3.12. Reference Center for Health Care of Pregnant Women with Diabetes and Society for Perinatal Medicine of the Croatian Medical Association - in the making

Reference Center for Diabetes in Pregnancy at the University Department of Gynecology and Obstetrics of the Zagreb University Hospital Center and Vuk Vrhovac University Clinic for Diabetes, Endocrinology
and Metabolic Diseases has been planned for the treatment of all pregnant women with diabetes and complications of diabetes and pregnancy as well as their education and research. It would also keep the Register of Diabetes in Pregnancy. The Reference Center would coordinate the work of regional centers in Osijek, Rijeka, Split and Zagreb.

4. PROGRAM OF THE IMPLEMENTATION OF HEALTH CARE

4.1. Adoption of healthier lifestyle with special reference to healthy diet

POPULATION: The entire population, and especially the youth

Motivation for adopting healthier lifestyle – healthy diet, keeping desired body weight, physical activity appropriate for a person’s age, non-smoking, with special attention paid to education on proper diet and necessity of keeping desired body weight. Participation in the activities aimed at reduction of risk factors (leaflets, brochures, individual and group programs).

Performers: A selected team of general/family medicine and the responsible team of physicians in charge of school children, the Public Health Institute of the Republic of Croatia and other Public Health Institutes in cooperation with specialist-counseling and hospital activities, pharmacists, Ministry of Education, Ministry of Science and Technology, and Ministry of Health.

Participants: Child day care centers, schools, university schools, employers, Croatian Red Cross, mass media.

4.2. Early diabetes detection

POPULATION: Persons at an increased risk

Screening, verification of diagnosis by means of blood and urine glucose testing, testing of urine acetone following a test breakfast and oral glucose tolerance test (OGTT).

4.2.1. Screening within systematic check-ups.

4.2.2. Early detection in persons at a higher risk for the development of diabetes: positive family history, previously established glucose intolerance, gestational diabetes, persons older than 45, obese, patients with hypertension and/or hyperlipidemia, persons who had increased glycemic values measured in stress situations (myocardial infarction, burns, traumas, infections, operations), and other persons suspected for diabetes.

Performers: A selected team of general/family medicine, and specialist-counseling activities.

4.3. Health care of population at increased risk: positive family history, previously established glucose intolerance, gestational diabetes, those older than 45, obese, patients with hypertension and/or hyperlipidemia, persons who had increased glycemic values measured in stress situations (myocardial infarction, burns, traumas, infections, operations), and other persons suspected for diabetes. Individual counseling and group work (about 20 patients) are aimed at changing life-threatening habits and adopting healthier lifestyle.

POPULATION: Persons at an increased risk

Education and motivation for changing life-threatening habits and adopting healthier lifestyle (non-smoking, healthy diet, regular physical activity, improvement of mental health).

Performers: Day care centers, schools, university schools, selected team of general/family medicine with the participation of field nurses, Public Health Institute, and societies.

4.4. Development of expert contents for written material and audiovisual means

POPULATION: General population, children and adolescents, parents and persons at an increased risk, pregnant women, all patients

Education and motivation for changing life-threatening habits and adopting healthier lifestyle.

Performers: Public Health Institutes in cooperation with the Vuk Vrhovac University Clinic Reference Center, Reference Center for Diabetes in Pregnancy

By means of leaflets, brochures, books, audio and video cassettes.

Participants: diabetic associations, day hospital

4.5. Diagnosis, treatment and rehabilitation based on medical indications and in accordance with current medical knowledge and doctrinal attitudes, in line with clinical recommendations for the diagnosis and treatment of diabetes of the Ministry of Health.

POPULATION: All persons with diabetes

Performers: A selected team of general/family medicine, specialist-counseling and hospital activities, pharmacists.

Participants: Day hospital

4.6. Health education

4.6.1. Health education of persons with diabetes is performed through courses in groups of some 20 patients, offering training in self-care and giving individual counseling. It includes education of children and adolescents, their families – individually, education in small groups, workshops for children and parents, workshops in camps for children.

Children with diabetes

Summer educational-recreational camps (meeting peers with the same disease, refreshing and expanding knowledge, taking over responsibility and becoming independent, carrying out self-monitoring in a safe environment, separating from parents; activities – education – knowledge quizzes, group work, competitive games, discussions; sports activities and entertainment).

Weekend workshops for children and adolescents – about 15 adolescent children, twice a year for 2-3 days (expanding knowledge, stimulating independence and taking charge of care of oneself and the disease, motivating for achievement and keeping of good regulation – lectures, practical work, interview with a psychologist).

Workshop for parents – about 7-10 parents twice a year (exchange of experience between parents of children with longterm disease and parents of children with newly detected disease, education, re-education and counseling, age-specific problems in diabetes control, giving educational and social support).

Adults with diabetes

At primary health care level: education in small groups once-twice a month when patients come to their family physician for prescriptions. Program planned in advance, precise meeting time appointed for a group of patients of similar age (patients on diet therapy, oral hypoglycemic agents, insulin), brief education and discussion lasting for 1-1.5 hours, writing prescriptions, glycemia and blood pressure measurements. Evaluation of work and achieved results.

Participants: physician, nurse and field nurse.

At secondary health care level: programs adapted to local conditions lasting continuously for 5 days in the morning (day hospital program), organized courses in the afternoon – within outpatient care.

At tertiary health care level: patients scheduled for hospital admission enter the program of education and disease regulation according to the previously established program, and within it additional examinations and laboratory tests are performed.

POPULATION: All persons with diabetes

Performers: A selected team of general/family medicine and specialist-counseling activities; Society of Pediatric Endocrinology and Diabetology of the Croatian Medical Association.

Participants: associations, pharmacists, day hospital.

4.6.2. Health education of professionals dealing with children and adolescents with diabetes (nursery-school and kindergarten teachers, teachers, coaches)

Education of educators – education of health professionals responsible for the care of children with diabetes (once a year for 2 days, education of teams, lectures, seminars, workshops, knowledge evaluation).

Education of nursery-school and kindergarten teachers, teachers and coaches by lectures held at the University Department of Pediatrics – Rebro, Zagreb
University Hospital Center, seminars under the auspices of the Ministry of Education and courses in child day-care centers.

4.7. Registration, reporting and evaluation of the implementation according to the existing legal acts, including preventive measures and procedures.

POPULATION: all treated persons with diabetes
Performers: executors of measures and procedures.

4.7.1. Keeping Register of Diabetes, analysis of diabetes epidemiology in Croatia, annual publications on the incidence, prevalence and mortality of diabetes in Croatia as well as proposals of necessary measures.
Performers: Reference Center for Diabetes in cooperation with the Public Health Institute of the Republic of Croatia.

4.8. Participation in preventive activities in the community, in accordance with an arranged annual program with Public Health Institute
Promotion of diabetes mortality statistics, disablement criteria for patients with diabetes, and implementation of ICF classification in diabetes information system.
Performers: all those engaged in diabetes (physicians, nurses, pharmacists, associations of persons with diabetes)

5. PROGRAM OF EDUCATIONAL MEASURES
EDUCATION of:
- dietitians
- podiatrists
- general practitioners
- pharmacists
- nurses
- lay persons

6. NORMATIVE SYSTEM OF THE “CROATIAN MODEL” OF HEALTH CARE
Diabetes care team at the level of polyclinical health care:

PHYSICIAN:
- complete medical check-up within polyclinical counseling – 26 min
- counseling – 10 min
- education – 10 min

NURSE:
- counseling on diet during an interview (taking patient’s nutrition history) of a newly registered patient – 20-30 min
- counseling on diet with knowledge testing at control visit – 10 min
- instruction on insulin administration by means of pen syringes – 30 min
- education on self-monitoring of blood and urine using test strips – 10 min
- instructions on hygiene and body care – 10 min
- education on physical activity – 30 min

DIETITIAN
- counseling on nutrition during an interview (taking patient’s nutrition history) of a newly registered patient – 20-30 min
- counseling on nutrition with knowledge testing at control visit – 10 min
- one dietitian cooperates with 4 diabetes care teams (i.e. 25% working time spent in one team)

PODIATRIST
- counseling on the hygiene of the feet, skin, nails, warning about possible noxious external factors, and advising on appropriate footwear – 20 min
- brief examination of the feet – 5 min
- arranges further treatment measures as required in agreement with a physician specialist
- education on appropriate exercises for feet (along with issuing written educational material) – 10 min
- one podiatrist cooperates with 4 diabetes care teams (i.e. 25% working time spent in one team)