NATIONAL STRATEGY FOR PREVENTION OF ORAL DISEASES IN CHILDREN FROM 0 TO 14 YEARS OLD AGE IN THE REPUBLIC OF MACEDONIA FOR THE PERIOD 2008–2018

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Abstract

Human principles and the fundamental values are the main principles stipulated in the Constitution of Republic of Macedonia. The Government of the Republic of Macedonia, within its program objectives, implementing the laws in the country, the international standards and the global health care as the worlds objective of the Constitution of WHO.

According to the information received through the health monitoring system, as well as the results from target and selective studies, they have shown that the condition of oral health, especially the condition with the dental caries is serious health problem of all groups. The alarm was activated by the state of increase of the caries incidence, showing a value of DMFT = 6.88 in children at 12 years of age, which is considered as a high value compared to the WHO recommendations for oral health (DMFT = 3).

The experience from the developed countries, as well as the knowledge based on scientific and professional evidence in RM, prove that this disease may be successfully prevented, eliminated and eradicated by conduction of primary preventive measures.

The program objectives of the National Strategy for prevention of oral deseases are shared in short term, medium term and long term objectives, which aim is eradication of the caries. The Strategy include a prevention of periodontal disease and orthodontic anomalies.

The prevention of the caries will be performed by using a five preventive measures: 1. mechanical and chemical control of the dental plaque 2. Discipline of sugar take regime 3. Application of fluorides (systemic and topical) 4. sealing fissures and cavities 5. Education and motivation for sustainability of oral health.

In the frame of the Strategy, we planed a dental dispensarisation of children through registering data in the patients file, as propose by WHO, and arrangement of preventive teams and professional assistance of paediatrics and gynecologists.

The evaluation of the effects from the preventive program shall be performed two years from the initiation of the program implementation and the follow-up evaluations shall be performed every year, on the representative sample from the group of children at 6, 8 and 12 years of age covered with the program.

The statistical data processing shall be presented at professional and scientific forums and published in the annual report of WHO.

Key words: national strategy, caries prevention.

Preface

Humane principles and fundamental values are the main principles stipulated in the Constitution of our country. These are also the basis for the right of all citizens of Macedonia to be able to exercise their right to health, as determined by law. The Government of the Republic of Macedonia, within its programme objec-
tives, implementing the laws in the country, international standards and global health care as the world objective of the Constitution of WHO, makes efforts in the direction of providing systematic care for the overall health of all citizens in Macedonia.

Vision: An educated, highly-motivated population with preserved health

Introduction

According to the information received through the health monitoring system, as well as the results from target and selective studies, it has been shown that the condition of oral health, especially the condition with dental caries, is a serious health problem of all groups. The fact that the incidence of caries in children is increasing is an alarming notion and imposes an urgent change of priorities, i.e. preventive rather than curative. The fact that there is not one country in the world that is rich enough to bear the costs of the continuous rehabilitation of its population as opposed to the incomparably limited costs of prevention which provides exceptional benefits to oral health was the motive behind the study of the state of oral health of 12-year-old children and the work on the above-mentioned strategy. The cross-section study for 2007, realised by a team of experts assigned by the Ministry of Health, as a genuinely measurable indicator and standard, as determined by WHO, estimated the DMFT-index (an average of extracted and treated carious teeth in children), indicating a value of 6.88 in children at 12 years of age, which is considered a high value compared to the WHO recommendations for oral health (DMFT < 3).

The experience of the developed countries, as well as knowledge based on scientific and professional evidence in Macedonia, shows that this disease may be successfully prevented, eliminated and eradicated by primary preventive measures.

In order to realize caries prevention through the stated measures as one of the strategic objectives for oral health, the Ministry of Health, in cooperation with the Ministry of Education, the Ministry of Labour and Social Policy and the Ministry of Local Self-government began the preparation of a National Strategy for the prevention of oral diseases in children from 0–14 years of age in the Republic of Macedonia, with special attention to children with disabilities. This will enable the realisation of the objectives determined in the Programme and the improvement of the general health status of the population of the country. At the same time, we shall approximate to the oral health standards and the standard of quality of life recommended and adopted in the EU-countries and WHO with the strategic goals and the framework policy, "HEALTH FOR ALL IN THE 21st CENTURY".

The health strategy determines the status of preventive dental healthcare in the Republic of Macedonia, which incorporates the following:

Preventive dental protection of children from 0–14 years of age shall continue to be provided by the Public Health Institutions, by the establishment of a network of institutions for oral health prevention, which shall be funded by public funds. Therefore, a plan shall be elaborated for the issue of providing premises, equipment, personnel and a package of offered services, furthermore, a geographical distribution of the current specialists in preventive and paediatric dentistry shall be conducted, in consideration of the fact that at the moment they are present only in the larger cities of the country. Dentists shall operate within a team together with a dental nurse, and they shall perform additional training of nurses in preventive dental protection.

Demographic data – According to the statistical data received from the State Statistics Office for 2005 (evaluation of the population in RM, 30.06.2005), and from the evaluation made by the team of experts, there is a total of 423,378 children at the age of 0 to 14 years, of whom 29,864 are aged 6 years.

At the moment, 75 specialists in paediatric and preventive dentistry and 55 general dentists work in the Health Sector in the Republic of Macedonia.

Condition of oral health – According to the epidemiologic examinations from the cross-section analysis, the condition of oral health in the Republic of Macedonia is alarming, and is presented by the following measuring indicators:

- Children at the age of 6 years without caries – 16.87%.
- DMFT in children at the age of 12–6.88% (very high compared to the recommendations of WHO for oral health (DMFT < 3).
● Prevalence of orthodontic anomalies in children at 6 and 12 years of age – 28.17% (6 years old) and 48% 9 (12 years old).

● Index of gingival haemorrhage in children at 15 years of age (CPITN) – present in five sextants.

Data regarding the amount of fluorine in drinking water
None of the water supply facilities in Macedonia provide fluorination of the water, and also none of them use naturally fluoridated drinking water. According to the data from the fluorine map of the Republic of Macedonia, prepared by the State Health Protection Authority of the Republic of Macedonia and the Faculty of Stomatology, the concentrations of fluorine in drinking water are below 0.3 mg/F per litre of water, which, from a preventive aspect, is an insignificant amount. In certain regions of the country, there are water supply facilities (mainly village wells and taps) with fluoride concentrations above optimal level, which indicated the occurrence of endemic fluorosis. These local water supply systems are no longer in use and they have been replaced with a Central Utility Water Supply Facility, and no longer pose a risk of endemic fluorosis.

Programme objectives and programme strategy

Program objectives

Short term objectives – After two years of the implementation of the Prevention Programme, we expect a reduction of caries in first molars of 70%.

Medium-term objectives – Children at 6 years of age without caries – an increase of 35% in the percentage of children without caries, after five years of the implementation; a reduction of the values of the DMFT index in 12-year-old children from 6.88 to 3, after five years of implementation of the programme; a decrease in the number of gingival haemorrhage sextants after five years of implementation of the Programme.

Long term objectives – Eradication of caries of the permanent teeth in children at the age of 12.

Strategic fields of the Programme

Caries prevention

1. Mechanical and chemical control of dental plaque
The basic precondition for the occurrence of dental caries is the presence of dental plaque. Dental plaque may be controlled in two ways: mechanically (brushing teeth at least twice a day) and chemically by application of preparations based on chlorhexidine in patients with a high risk of caries.

2. Application of fluorides (endogenous and exogenous)
Fluoride provides efficient reduction of caries incidence, without any harmful effect on the child’s health (WHO position). Due to the fact that water in Macedonia is not fluorinated, the endogenous fluorine prophylaxis will be conducted by intake of fluorine tablets and fluorinated milk. Children consuming fluorinated milk must not take fluorine tablets. In order to accomplish maximal effect from the fluorine prophylaxis, apart from the endogenous, exogenous fluorine prophylaxis will also be conducted.

3. Discipline of sugar-intake regime
The significant correlation between dental caries and refined carbohydrates intake has been proved by many longitudinal studies. Therefore, it is necessary to apply a sugar intake regime. For that purpose, special training will be provided for children, parents and teachers. Apart from the nutrition specialist, a dentist will also participate in the process of preparing menus in pre-school institutions and schools.

4. Sealing fissures and cavities
Fluoride protects smooth dental surfaces, but not cavities and fissures, which need sealing. Sealing will be conducted with glass ionomer cement with a high fluoride concentration. Bearing in mind the real financial capacities of the country, in this phase sealing will be conducted on the first permanent molars immediately after their eruption. According to the State Statistics Office, in Macedonia there are currently approximately 27,000 children at the age of 6, who will be encompassed by this procedure.
5. Education and motivation for sustainability of oral health

Dental health education of the population is one of the main preventive measures and it is an imperative for implementation of the remaining primary preventive methods. Education is a completely directed, planned and active process of the establishment of an adequate attitude towards one’s own and of collective health.

Dental health education will be performed through the following methods –
- Individual communication,
- Group information,
- Social and educational systems,
- Publication of information through the media.

Dental health education will be performed by members of the dental team (dentist, dental hygiene technician and dental nurse). The Ministry of Education, the Ministry of Labour and Social Policy and the Ministry of Local Self-Government will provide for health education through the teachers’ curricula.

Prevention of periodontal disease

The prevention of periodontal disease in children will be focused on the prevention of gingival inflammations. It will be accomplished by exercising the primary preventive measures which prevent the occurrence of dental caries.

The paedodontists will conduct monitoring of the condition of periodontal health by registering gingival haemorrhage (CPITN).

Prevention of orthodontic anomalies

The prevention of orthodontic anomalies will be performed by early detection of teeth-jaw discrepancies and referral for further interventive orthodontic treatment. By application of the primary preventive measures, we also expect a reduction in the incidence of orthodontic anomalies.

Dental dispensarization of children

The evaluation of the oral health condition and the need for treatment will be conducted through registering data in the patient’s file, as proposed by WHO.

Data regarding the ordination of the endogenous intake of fluorides will be registered in the health record, in the section for the condition of the teeth, for the purpose of avoiding the possibility of overdose. The information on the endogenous intake of fluorides in pregnant women (from 4 months i.u.) will be registered in the same manner as with children. In cases where the child receives fluorides through the mother’s milk, the data will be entered in the file of the infant.

Preventive team and professional assistance which will participate in the implementation of the programme

In order to accomplish maximal fluorine prophylaxis, the preventive team will be comprised of the following –
- Family gynaecologist,
- Paediatrician,
- Paedodontist.

The gynaecologist will be obliged to treat every pregnant woman from the 4th month i.u. until childbirth with fluorine tablets of 1 mg daily.

The paediatrician will continue administering fluorine tablets to breast-feeding mothers until discontinuation of lactation. From that moment, the paediatrician will be obliged to refer the child to a paedodontist, who will continue with the administration of endogenous fluorine prophylaxis.

Professionals for programme implementation

- All specialists in paediatric and preventive dentistry in the public sector shall comply with the WHO criteria, for the purpose of receiving valid epidemiological data.
- The Public sector shall employ a calibrated and trained team of general practice dentists.
- Kindergarten and school teachers who have completed education covering the follow topics.
  1. Teeth and their function;
  2. Dental plaque and tooth and gum diseases;
  3. Carbohydrates and oral health;
  4. Personal hygiene of teeth and gums;
5. Fluorides and their role in caries prevention;
6. Diet as regards oral health;
7. Dental examinations;
8. Loss of teeth.

After completing their education from 6–9 years of age, children will acquire habits, knowledge and values for the preservation and improvement of oral health.

Evaluation of effects of preventive programme

The first evaluation of the effects of the preventive programme will be performed two years from the initiation of the implementation of the programme, in children at 8 years of age. The follow-up evaluations will take place every year, on a representative sample from the groups of children at 6, 8 and 12 years of age covered by the programme.

The statistical data processing will be conducted using the software system of WHO and the State Health Care Protection.

The results obtained from this preventive programme will be presented at professional and scientific forums in the country and abroad, and they will be published in the annual report of WHO – The World Oral Health Report.

REFERENCES
Национална стратегија за превенција на орални забољувања кај деца од 0–14 години во Република Македонија за периодот од 2008–2018 година

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Координативно тело за изработка и имплементација на Националната стратегија за превенција на орални забољувања кај деца од 0–14 години во РМ

Според хуманите принципи и темелните вредности утврдени со Уставот на Република Македонија, животот и здравјето на луѓето имаат најголема важност. Владата на Република Македонија, во своите програмски определби, доследно ги применаа законите на државата, меѓународните стандарди и глобалната грижа за здравјето како светска цел захраната со Уставот на СОЗ (Светска здравствена организација).

Сознанијата кои се добени преку систематичен мониторинг на здравјето, како и сознанијата добени од целинци и селективни студии, покажаа дека состојбата на оралното здравје, особено на денталното (дентален карнес), е сериозен проблем кај сите испитувани групи. Алармот на активираната состојба на пораст на карнес инциденциата во детската возраст КЕП – индекс = 6,88 кај 12-годишни деца, што е висока вредност според препораките на СОЗ за орално здравје (КЕП = 3).

Искучавањата на развиените земји, особено сознанијата базирани на научни и стручни доци во РМ, упатуваат на факт дека овие забољувања можат да се превенираат, елиминираат, дури и ерадикаираат со контролирана примена на првични превентивни мерки.

Програмските цели на Националната стратегија за превенција на орални забољувања се поделени на краткорочни, среднорочни и долгорочни, при што, крајната цел е ерадикација на карнесот. Во Стратегијата е вклучена и превенција на парodontопатијата и ортодонтичките аномалии.

Превенцијата на карнесот ќе се постигне со првенствен статус на пет превентивни мерки, и тоа: 1. механичка и хемиска контрола на дентален плаќ; 2. дисциплина во несет на шекерите, 3. апликација на флуориди (системски и топикално); 4. Залевање на фисури и јамички и мотивација за одржување на оралното здравје.

Во рамките на имплементацијата на Стратегијата се планира стоматолошка дисипансеризација на децата со нотирање на податоци во картон предложен од СОЗ и анжман на превентивни тимови и кадри, во кои се вклучени и педијатри и гинеколози.

Евалуацијата на ефектите од спроведените активности ќе се врши две години по имплементацијата, а секоја наредна евалуација ќе се врши секоја година на репрезентативен примерок од опфатените деца на 6, 8 и 12-годишна возраст.

Добиените резултати ќе бидат презентирани на стручни и научни форуми и објавени во годишниот извештај на СОЗ.

Клучни зборови: Национална стратегија, превентива на дентален карнес.