

**Miklós Zrínyi National Defence University**

**Lajos Kossuth Military Science Faculty**

**Military Science Ph.D. School**

Col. Csilla Suri M.D.

**THE CHANGES IN THE ORGANISATIONAL AND CLINICAL PRINCIPLES OF  
DENTAL AND MAXILLOFACIAL SURGICAL CARE IN THE INTEREST OF  
MEETING NATO REQUIREMENTS**

Summary of Doctoral (PhD) Thesis

**Supervisor:**

Col. Lajos Zsíros M.D. Ph.D.

**2010 Budapest**

## INTRODUCTION

The military organisational principles of dental and maxillofacial surgical care have gone through significant changes over the past decades. Following our NATO accession this transformation process accelerated. Along with the changes in military medical organisational principles the practice of care also requires changing.

My doctoral thesis is concerned with the examination of this issue, the topicality of which has remained unchanged over the decades.

## THE SCIENTIFIC INTERPRETATION OF THE PROBLEM

The prestige of dentistry and maxillofacial surgery has changed a lot over the past decades. One hundred years ago dental health was not deemed significant from a military point of view.

Fifty years ago conditions requiring emergency care, inflammations of dental origin and facial injuries suffered in combat represented a major problem.

Twenty years ago the focus of attention was medical fitness, especially in the case of soldiers with special skills (divers, pilots).

Five to ten years ago the development in medicine brought about a significant change that affected medical fitness. Periodontal diseases, which can be regarded as endemic in Hungary, result in diseases that are the leading causes of death among the Hungarian population.

The social and military medical importance of a healthy set of teeth has to be judged in view of this.

Dental fitness, as part of general medical fitness, plays a decisive role due to the high proportion of dental problems.

Achieving the highest possible standard of medical support is a general objective.

- 1. In my thesis I use statistical methods to examine the role of access to dental care and its effectiveness from the point of view of suitability for the military.*
- 2. Another aim of my thesis is to propose some organisational changes in order to improve the efficiency of preventive dentistry.*
- 3. My thesis is also concerned with defining the tasks and conditions necessary to carry out emergency dental and maxillofacial surgical treatment in a theatre of operations.*

In my doctoral thesis I am planning to deal with the above mentioned hypotheses on the basis of historical surveys and relevant literature, the evaluation of dental and oral surgical statistics as well as my concrete experience in the area of dental and maxillofacial surgical care for the sick and wounded and keeping in mind the NATO guidelines.

## **RESEARCH OBJECTIVES**

1. Starting a dental prevention program in Hungary that meets NATO standards,
2. Determining the optimal level of dental care domestically and in a theatre of operations.

In the interest of this I analyze:

- the dental health of conscripts in the decades before our NATO accession,
- the dental data of the current personnel,
- the maxillofacial surgical cases requiring emergency care.

My aims are the following:

- establishing NATO compatible dental documentation
- introducing dental fitness classification in accordance with the NATO STANAG
- using dental identification of casualties
- formulating a dental and maxillofacial surgical protocol suitable for Role 2 LM.

## **RESEARCH METHODS**

1. Through a historical survey I analyze the dental health of 10.000 young men conscripted between 1975 and 1990.
2. I examine the dental health of 400 persons from the current strength in accordance with the NATO STANAG.
3. I compare the examination results of these 400 persons with the representative data of 450 persons which I collected in a similar way 8 years before.
4. I analyze the dental statistics of years 2007 and 2008 based on 50.000 cases.
5. I collect and analyze data from the area of dental material consumption.

6. I process and analyze the notes on 1.000 injured in-patients treated at the maxillofacial surgical department in the past 20 years,
7. I analyze the life-threatening inflammation cases requiring in-patient treatment at the maxillofacial surgical department.

## **THE STRUCTURE AND SUMMARY OF THE THESIS**

The thesis is divided into four closely related units.

In **Unit 1** I deal with the organisational issues of dental care.

The Medical Service of the Hungarian Defence Forces has made continuous efforts in the interest of achieving and preserving a high level of medical fitness of its personnel. It is true in the area of dental care as well. Between 1975 and 1990 the dental assessment of 10.000 conscripts was carried out, which showed no improvement in dental health over the 15 years. This result was due to the generally bad dental health of the young men conscripted without selection.

Following our NATO accession, the Medical Service of the Hungarian Defence Forces was faced with new tasks. The importance of providing dental care in a theatre of operations was proven during our involvement in peace support operations, since according to the medical reports, the extent to which dental fitness affected suitability for deployment was 25-34%. Enhancing dental fitness, which in turn improves suitability for deployment among Hungarian military personnel is a basic task.

The NATO STANAGs, including NATO dental STANAGs standards help to achieve this, and their introduction and application in Hungary could lead to a significant improvement in suitability for deployment.

**Unit 2** contains the statistical analysis of the dental health of the personnel of the Hungarian Defence Forces.

According to NATO STANAG 2466 Dental Fitness Standards for Military Personnel and a Dental Fitness Classification System, military personnel can be classified into four dental fitness classes. Personnel in classes 1 and 2 can be allowed to deploy abroad. They are the ones who are not expected to require dental treatment within one year. Personnel in classes 3 and 4 must not be allowed to deploy abroad since they are likely to require emergency dental treatment within one year.

Following our NATO accession, the dental fitness classification detailed by NATO STANAG 2466 was tried among the personnel involved in peace operations in 2001 and 2002. The results showed that 75% of the personnel were dentally unfit.

In 2008 a similar survey of 400 persons was carried out and it showed that the proportion had turned round: now 75% of the persons surveyed were found dentally fit according to NATO STANAG 2466. My statistical surveys showed that 7-8 years later dental fitness had significantly improved among the personnel who were planned to be sent off on deployment abroad.

According to Order No.449/2008 of the Commander of HDF MMC, the partial results achieved in the area of dental fitness were to be extended over the total strength of the HDF. In 2008 the dental fitness screening of 3291 personnel serving in Hungary yielded similar results to those of the personnel on deployment abroad in 2001 and 2002: 75% of them were found to be dentally unfit. Due to the increasing importance of dental fitness, in the coming years an improvement similar to the improvement seen among personnel deployed abroad, can be expected among the personnel serving at home.

The effectiveness of the dental care for the total strength of the HDF can be increased through the analysis of the recently introduced dental statistical reports.

The plannability of dental material demand is helped by Order No. 449/2008 of the Commander of HDF MMC. According to this dental care can be made more cost effective.

The results achieved in the area of the forensic use of dental records for casualty identification must be extended in harmony with the NATO STANAG.

**Unit 3** is concerned with emergency maxillofacial surgery performed in a theatre of operation.

Emergency maxillofacial surgery is of great importance, especially in a theatre of operations, where a maxillofacial surgeon is only available at ROLE 3 level. Therefore, emergency maxillofacial surgery has to be performed by a dentist. The cases requiring emergency maxillofacial surgery in a theatre of operations can be inflammations of dental origin and injuries.

The importance of inflammations of dental origin requiring emergency treatment is proven by the results of my dental health surveys carried out among the personnel of the Hungarian Defence Forces, which show that the occurrence of dental cases requiring maxillofacial surgery is very likely.

After the analysis of the cases of 56 in-patients at the maxillofacial surgical department, it can be concluded that immediate and expert medical intervention is life-saving in such cases.

The occurrence of head and neck injuries in peace and war is permanently 15% in proportion to injuries of the other regions of the body. This high proportion indicates that maxillofacial injuries have to be reckoned with in a theatre of operations and therefore their emergency treatment must be ensured.

After the analysis of the records of 1001 injured patients who were treated at the Maxillofacial Surgical Department of the Central Military Hospital over 20 years, it can be stated that

despite the more sophisticated protective equipment, injuries of the head and neck region are becoming more and more frequent. Changes can only be seen in the age and sex of the injured persons, the localization of the injury and its seriousness. It follows, that the emergency treatment of maxillofacial injuries must be guaranteed.

Inflammations and injuries of the head and neck region are a serious professional problem for the dentist in the theatre of operations, since he/she is the one who has to provide emergency care. This could be helped by the formulation of a maxillofacial treatment emergency protocol.

**Unit 4** is the summary of conclusions.

It can be concluded that emergency maxillofacial treatment in a theatre of operations is the task of a dentist.

Dentists have to be prepared for providing emergency maxillofacial treatment in an area of operations.

Maxillofacial emergency treatment protocols, which are to be followed in case of inflammations of dental origin and injuries of the head and neck region, provide help for the preparation of dentists.

Maxillofacial emergency treatment protocols define unambiguously the dental and maxillofacial treatment to be performed in an area of operations, thus facilitating the establishment of a Hungarian ROLE 2 LM.

## **NEW SCIENTIFIC ACHIEVEMENTS**

1. I was the first to make a scholarly assessment of dental care among the personnel of the Hungarian Defence Forces over the 35 year period from 1975 to the present.
2. I have designed both an up-to-date dental and maxillofacial screening and patient care system that can be applied in domestic practice and a system for dental fitness testing and classification following NATO guidelines.
3. I have created a new, NATO compatible system of dental and maxillofacial surgical documentation which also encompasses actual dental material consumption.
4. I was the first to make a detailed, scholarly assessment of the inflammatory diseases and injuries of the head and neck region based on a large number of patients within the military health care system.
5. I have formulated the dental, dentoalveolar and maxillofacial emergency treatment protocol to be followed in an area of operations.

## **THE USEFULNESS OF THE RESULTS OF MY RESEARCH**

The changes that have taken place in the dental care of the personnel of the Hungarian Defence Forces facilitate both at home and in an area of operations:

- the implementation of the dental prevention program,
- the enhancement of the effectiveness of dental and maxillofacial surgical care,
- the improvement of dental suitability for deployment.

My research highlights the current problems in the area of the dental care for military personnel and offer guidelines for solutions.

### **Owing to the results of my research the following have been realized:**

1. The dental data of personnel on deployment abroad are reported according to the NATO STANAG.
2. The order of dental screening has been regulated.
3. The course of reporting on dental care and dental material consumption has been determined.
4. A new type of dental register has been issued.
5. The dental care and maxillofacial surgery protocol for ROLE 2 LM has been formulated.

### **Recommendations for the future:**

1. The preparation of dentists to perform emergency maxillofacial surgery within at ROLE 2 LM level should be put into practice.
2. The dentists serving in the Hungarian Defence Forces should complete a dental casualty identification course in accordance with NATO STANAG 2466 in order to be prepared for performing possible tasks in the casualty identification team.
3. Panoramic x-rays should be made available within the Hungarian Defence Forces not only for maxillofacial surgery but also for the screening of personnel at home.
4. The introduction of a computerized system of data registration and record- keeping is inevitable in the future and it should be done as quickly as possible.

**Directions for further research:**

1. Making the most accurate cost estimate possible for dental materials and dental care in the future.
2. The continuous modification of the dental NATO STANAGs as necessary and their adaptation to the Hungarian practice..
3. The examination of the possibility of humanitarian dental care.
4. Using the dental care experience gained within the Hungarian Defence forces in cooperation with other military and civilian organisations and institutions, principally with the Centre for Excellence for Military Medicine and the Defence Medicine Institute of the Miklós Zrínyi National Defence University.