

REVIEW ARTICLE

HISTORY AND WORK OF THE DEPARTMENT OF MILITARY INTERNAL MEDICINE

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Summary

The purpose of this work is to give a brief overview on history and main directions of work at the Department of Military Internal Medicine (DMIM). Chiefs (commanders) of the department are presented in chronological order together with tasks they had to deal with during a given period of time. A close cooperation of the DMIM with civilian hospital departments is pointed out, mainly in the areas of therapeutic and preventive care together with education. A departmental contribution to the development of the Military Medical Service is specified in detail, particularly surgical and non-surgical casualties support.

Key words: military internal medicine; organization; personal data; general and special activities; cardiology and metabolic intensive care; peritoneal dialysis; Elsikol; bone marrow transplantation; life island

LIST OF ABBREVIATIONS

ACR – Army of the Czech Republic;
DMH – Department of Military Hygiene;
DMIM – Department of Military Internal Medicine;
DMIMMH – Department of Military Internal Medicine and Military Hygiene;
DMS – Department of Military Surgery;
FH – Faculty Hospital;
FM – Faculty of Medicine;
FMHS – Faculty of Military Health Sciences;

ICU – intensive care unit;
MMA – Military Medical Academy;
UD – University of Defence;
WMD – weapons of mass destruction

INTRODUCTION

The primary mission of the Military Medical Service in a potential war is to save health and life of the highest number of wounded and sick. In the war waged in the most modern way, with latest assets and technology, when different types of health affections of surgical and non-surgical profile can occur, it is a huge and enormously difficult task to accomplish this mission. Thus, a level of the Military Medical Service is of strategic importance indeed. Throughout its existence, activities of the Department of Military Internal Medicine (DMIM) have been designed and

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carried out with the aim to ensure maximum possible medical support under specific combat situations and conditions.

Historical notes

DMIM was established at the foundation of the Military Medical Academy (MMA) in 1951. The MMA was established after transformation of the former Faculty of Medicine (FM) in Hradec Králové into a military university. In the first years after its constitution, the MMA had all theoretical and clinical departments the same as the former faculties of medicine in our republic.

Since that time, a great number of significant organizational changes in the Military Medical Service and military higher education have been accomplished. However, two key clinical departments, essential for development of immediate medical support to the wounded and sick in combat: the DMIM and the Department of Military Surgery (DMS), have formed the backbone of the Military Medical Service.

The first organizational change in training of doctors for the army was accomplished in the 70s of the last century. In Hradec Králové, the civilian FM was renewed and the MMA was transformed into Jan Evangelista Purkyně Military Medical Research and

Postgraduate Institute (JEP MMRPI). Only two clinical workplaces, particularly the DMIM and the DMS, remained integral parts of this institute.

The first chief of the DMIM was Col. Prof. Viliam Jurkovič, M.D., D.Sc. He headed the department from 1952 to 1969 till the time he was forced to emigrate. Prof. Jurkovič was not only an excellent internist and cardiologist but also a scientist, a teacher and a conceptually thinking doctor. As a matter of fact, he laid foundations of military internal medicine as an independent subdiscipline of internal medicine with his book "Basics of hospital and field medicine" and through teaching of undergraduates and doctors. This subdiscipline was systematically and specially focused on combat health support to the wounded and sick. Prof. Jurkovič got the recognition for this conception not only at home but also abroad. He regularly read lectures, among others at the university in Strasbourg, and was appointed to the professorship in internal medicine (1965) by the French President de Gaulle at this university.

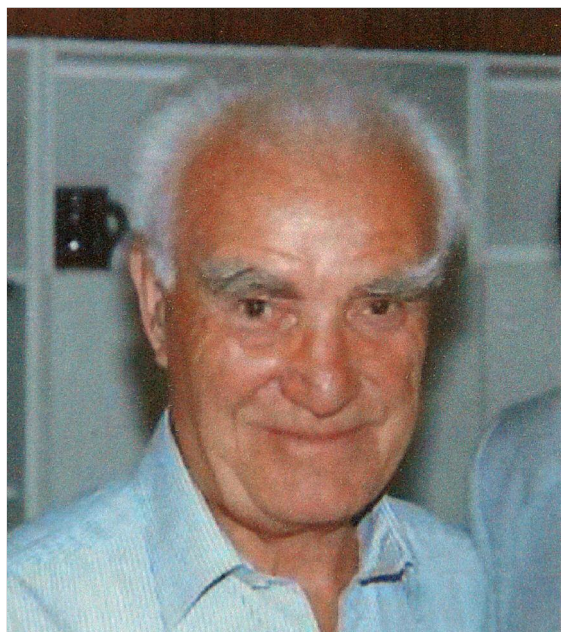


Figure 1. Prof. Viliam Jurkovič, M.D., D.Sc.
Head of the DMIM in years 1952 – 1969

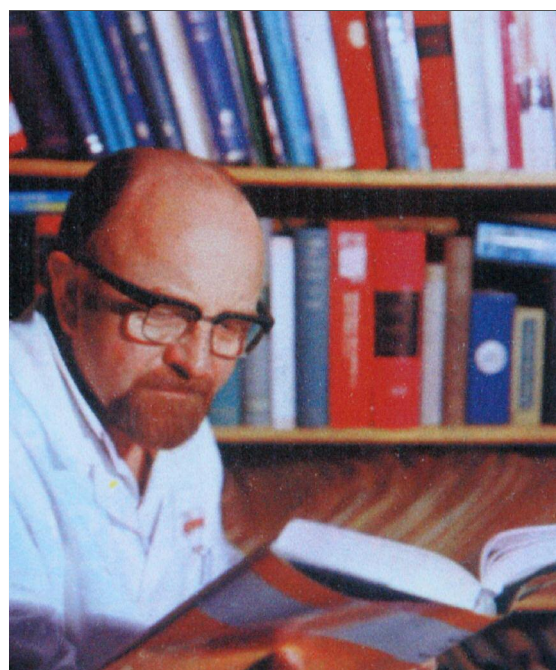


Figure 2. Prof. Jaroslav Mazák, M.D., Ph.D.
Head of the DMIM in years 1969 – 1978

In the years 1969 – 1978, the DMIM and simultaneously a newly established 2nd Department of Internal Medicine of the FM were headed by Col. Prof. Jaroslav Mazák, M.D., Ph.D. Within the time

of his service at the DMIM, work of the department was focused, besides already well-established cardiology, on issues of haematology conditioned by a development of risk and threat of radiation injury and health affection by weapons of mass destruction (WMD).



Figure 3. Prof. Vladimír Pidrman, M.D., D.Sc.
Head of the DMIM in years 1978 – 1992

In 1978, governance of the DMIM and the 2nd Department of Internal Medicine was taken over by Col. Prof. Vladimír Pidrman, M.D., D.Sc. He was not only an outstanding internist and cardiologist, but also an enormously conceptually thinking man. In his days, Prof. Pidraman created optimal conditions for professional grow of all talented doctors. He prudently outlined development of main subdisciplines in the area of internal medicine. Later, many head physicians of internal departments of the FM and outstanding experts of the Faculty Hospital (FH) in Hradec Králové and other internal workplaces in former Czechoslovakia came from this workplace.

Staffing and material equipment of the joint military and civilian workplace enabled to reflect and fully develop new trends in internal medicine in the 70s and 80s.

The DMIM, as one of the first in the republic, started to set up specialized care for patients, which

could not be pursued in full extent at standard internal departments (e.g. building a cardiology intensive care unit, a systematic study of heart rhythm disorders, building a metabolic intensive care unit, peritoneal dialysis, life island, bone marrow transplantation, study on mechanisms of cardiotoxicity).

After the split of Czechoslovakia in 1993, the Czech Republic and the Army of the Czech Republic (ACR) were constituted. This fact led to many principle conceptual and organizational changes within the Military Medical Service, national health system and logically also the DMIM. The DMIM structure was considerably changed and personnel reduced.

Within the years 1992 – 1995, the chief of the DMIM was Col. Prof. Jaroslav Kačerovský, M.D., Ph.D. In this period of time, the DMIM, in organizational respect, was separated from the civilian internal department. Two organizationally independent military and civilian departments were established. The DMIM, however, continued to cooperate with the civilian workplace (2nd Departement of Internal Medicine) which remained the clinical basis for the military department. All doctors of the military department carried on working in the area of therapeutic and preventive care at the 2nd Department of Internal Medicine. Prof. Kačerovský left the army in the year 1995 and left the leading position at the DMIM.

In 1995, Col. Prof. Ladislav Jebavý, M.D., Ph.D. was appointed as the chief of the DMIM and successfully followed-up the work of his predecessors. In 2002, he became a reservist, however, he remained in leading position at the DMIM as a civilian employee of the ACR till 2014. As a chief internist of the ACR he has developed and updated the branch of military internal medicine.

In 2004, another significant organizational change in military education system emerged. The University of Defence (UD) was established in Brno. In Hradec Králové, the MMA was transformed into the Faculty of Military Health Sciences of the UD (FMHS UD). The DMIM has actively carried on its activities within the UD bounds up to the present time.

In 2014, another organizational change occurred, the DMIM and the Department of Military Hygiene (DMH) merged into the Department of Military Internal Medicine and Military Hygiene (DMIMMH).

This newly established department has been headed by Col. Assoc. Prof. Jan Horáček, M.D., Ph.D.

Characteristics and a mission of the DMIM

The DMIM is the clinical department which is systematically focused on the subdiscipline of internal medicine – military (synonym to combat) internal medicine. This branch – in compliance with trends in development of military medical services in modern armies – monitors, resolves and develops specific military-internal issues, particularly problems of severe and life threatening states support of non-surgical profile. These types of disorders always occurred in the past (e.g. vast epidemics of infectious and other diseases), however, they can emerge nowadays as well, above all in armed conflicts. They are likely to appear in different modifications also in peacetime mainly in large-scale disasters.

Health impairments of non-traumatic origin in armed conflicts are defined as so called non-surgical casualties. To solve general consequences of mass affections of non-surgical mainly internal origin requires not only medical erudition in the branch of internal diseases but also specific knowledge and

skills: military discipline, ability to master Military Medical Service support in mass casualties, and organization of the Military Medical Service in field medical facilities. Nowadays, especially ACR work in foreign missions is concerned. Thus, the military doctors' job requires special skills for work in difficult conditions far removed from work at standard internal departments in peacetime.

Moreover, knowledge of the branch of military internal medicine enables submitting proposals to commanding authorities which lead to optimization of the organization structure of field medical facilities, to their modernization, to the selection of new effective drugs, treatment procedures, examination methods and innovation of field labs.

Military internal medicine has been developed at the DMIM in three basic directions and areas: therapeutic and preventive, educational and teaching and scientific and research. Therapeutic and preventive activities represent basic and essential work of doctors – military internists of the department – officers and civilian employees, which enables to acquire and develop their own professional knowledge of and experience with performing care for seriously ill.



Figure 4. Metabolic intensive care unit in 1977



Figure 5. Cardiology intensive care unit in 1983

The DMIM, as the clinical department, has always had its inpatient ward at the civilian workplaces of the FH in Hradec Králové. Primarily, at the 2nd Department of Internal Medicine, later on also at other specialized departments of the FH in Hradec Králové which allowed dedicating the DMIM work to issues associated with tasks and needs of the military internal medicine.

Educational and teaching activities logically continue with therapeutic and preventive work. Wide range of activities in undergraduate and postgraduate education and teaching in the branches of internal medicine and military internal medicine are concerned.

In the area of science and research, the department has continuously aimed at searching and solving new methods of treating the wounded and sick keeping up with medical advances. The DMIM doctors have applied new knowledge to conditions of combat situations.

Note: Hereinafter the DMIM doctors' names will be shortened and only the highest academic degree will be used.

Educational and teaching activities at the DMIM

The DMIM teaching activities have been realized in accordance with teaching programmes of the FM, and besides that, with specific requirements of the Military Medical Service.

Teachers of the department actively participate in teaching internal medicine together with teachers of the FM. They read lectures, provide practical training of undergraduates and postgraduate doctors, they are members of all testing boards at the FM in both undergraduate and postgraduate degree programmes.

Military and civilian undergraduates get acquainted with basic knowledge of military internal medicine already during their studies. Many of them take advantage of working as researcher's or teacher's assistants under the supervision of experienced teachers of the department.

Publications produced by the department staff and used in teaching process have been considered the first-rate documents of internal and military

internal medicine. The above mentioned textbook "Basics of hospital and field medicine" (Jurkovič, 1956) was the entirely new and modern national textbook of both branches that time.

Publications favourably accepted countrywide involved: e.g. Internal medicine (Mazák et al, 1978); Atlas of monoclonal antibodies – proteins (Tichý, Hrnčíř, 1981); Dialysis, hemoperfusion and plasmapheresis (Navrátil, Bláha, Kačervský, 1987). All habilitated teachers of the department, without exception, have been co-authors of many national textbooks of internal medicine, including the last edition of Internal medicine (Bureš et al, 2014).

The core of postgraduate education lies in lecture activities for doctors in various specialized courses organized in the frame of the Military Medical Service and the FM as well as in other medical

facilities countrywide. All knowledgeable military doctors of the Czechoslovak army as well as later the Czech and the Slovak armies attended, that time prescribed by law, postgraduate study of internal medicine completed with a professional degree awarded at the DMIM.

Independent and highly demanding activities of the department in postgraduate education for the needs of the ACR cover management and support of the doctoral study programme Military internal medicine, the accreditation of which the department obtained in the year 1993 in compliance with the new Higher Education Law. This accreditation was prolonged in 2014 till the year 2023. Dissertations of 17 students have been successfully defended at the department. Presently, 10 doctors – internists have been enrolled in this form of study at the department.

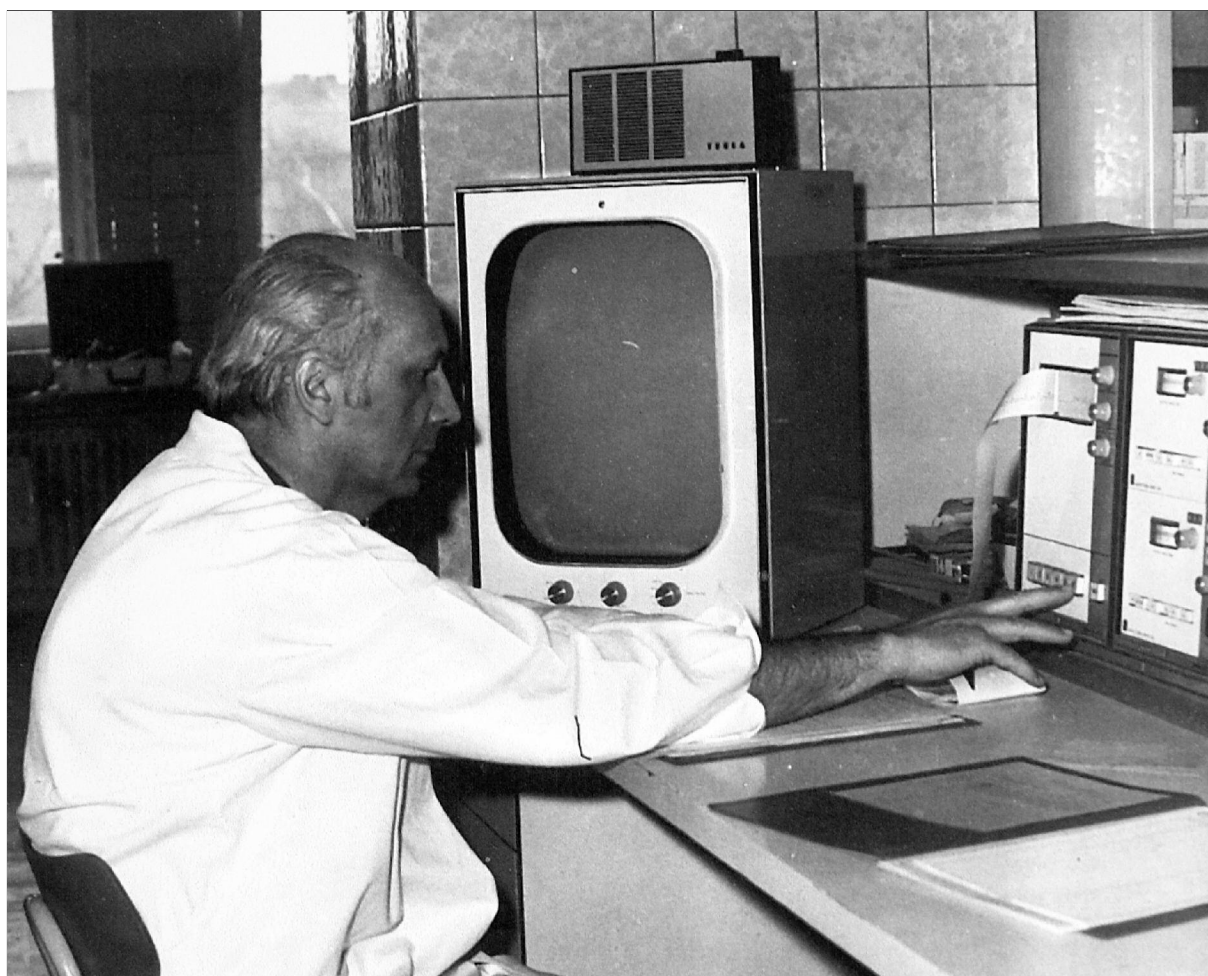


Figure 6. Prof. Pidrman and historical equipment of intensive care unit

Therapeutic and preventive activities at the DMIM

Therapeutic and preventive activities of the DMIM personnel have been performed at civilian departments of the FM to which the department was organizationally connected. The DMIM doctors have carried out medical work and their duties (at beds, outpatients', within shifts etc.) with close cooperation with their civilian colleagues in accordance with the work schedule and teaching programmes of the departments.

From priority activities in this area, the most important ones should be emphasized, particularly those initiated by the DMIM. In 1968, the intensive care unit (ICU) was built as one of the first in our republic. A decisive contribution to its building belonged to Prof. Pidrman and Assoc. Prof. Hamet. Assoc. Prof. Gregor and Assoc. Prof. Pospíšil continued successful work at the ICU. This specialized unit experience served as a model for establishing similar facilities in all military hospitals and other civilian hospitals.

In 1974, another unique specialized workplace was originated, and again thanks to the DMIM (Prof. Vaňásek, Prof. Bláha and Prof. Jebavý). The "Life Island" installed at the department enabled treating patients with some blood diseases under the conditions of reverse isolation. This established specialized workplace served simultaneously as a statutory "Czechoslovak nuclear energy disaster centre" in the 70s and 80s of the 20th century.

Building one of the first metabolic units in our republic represented another modern direction of specialized care initiated by the DMIM. Prof. Zadák was at its origin. Furthermore, therapy with peritoneal dialysis was developed at the top national level that time again at the DMIM thanks to Prof. Kačerovský, Assoc. Prof. Chobola and later Assoc. Prof. Brndiar. A concept of dialysis therapy support in field conditions was worked out as well (Prof. Kačerovský, Assoc. Prof. Brndiar). New doctors of the department have carried on priorities in improving therapeutic and preventive care. Therapy and diagnosis of heart rhythm disorders (Assoc. Prof.



Figure 7. Military medical team of the DMIM in the 80s of the 20th century

Haman, Jakl Ph.D.), problems with cardiotoxicity after application of cytostatics and other substances (Assoc. Prof. Horáček) have been investigated. An entirely new field of study is of concern, namely a quality of life in patients with severe diseases (Assoc. Prof. Slováček.)

Extent work activities in therapy as well as in scientific and research areas could not be possible without a quality lab background. A biochemical laboratory (founded and headed by Prof. Tichý) and a haematology laboratory (founded and headed by Assoc. Prof. Pecka) were the organic components of the department in the 70s and 80s of the last century. That time, 35 experienced lab technicians worked in the lab complex. Later, the whole group was gradually transferred to civilian workplaces in the FH in Hradec Králové.

Scientific and research activities at the DMIM

Within the first years of the department existence, scientific and research activities (as well as the whole MMA) were aimed at evaluation of experience with medical support to the sick and wounded in the Second World War.

Later, in the bipolar world, the threat of health damage caused by WMD emerged. Logically, medical research was oriented on topical risks of that time. A systematic study of bone marrow suppression as a model of radiation injury was launched at the DMIM (Prof. Vaňásek, Prof. Bláha, Prof. Jebavý).

Then in the 80s of the last century, a risk of high incidence of disturbances in water and mineral metabolism was found out in the wounded and mixtures. That is why the first peroral polyion preparation Elsikol (Prof. Kačerovský) was developed at the DMIM. This preparation was subsequently introduced into the equipment of the former Czechoslovak Army.

When the ACR Medical Service was originated, research activities of the department were oriented on solving problems of clinical character. As a follow-up to experience in treatment of bone marrow suppression, the hematopoietic cell (bone marrow) transplantation began to be applied in clinical practice. Simultaneously, the need to study systematically possible complications of this procedure, among others also cardiotoxicity of cytostatics and other substances, emerged. In the last years, the systematic study of problems connected to cytokines and adhesion molecules in some forms

of leukemia has been launched. Recently, research work of the DMIM has been focused just on these problems (Assoc. Prof. Horáček, Kupsa Ph.D.)

Results of the research work have been continuously documented by defence of tens of final reports, more than thousand professional announcements and by publications issued at home and also abroad.

Clinical research for the needs of ACR Medical Service has been currently targeted at research projects. There, new modern therapeutic methods, presently applicable in potential armed conflicts, eventually also in large-scale disasters in peacetime, have been resolved and updated.

Current work at the DMIM

Qualitatively and quantitatively entirely new period of department activities has begun after formation of the ACR and when the Czech Republic joined the NATO.

The primary task, the same as in other areas of the army, was to reach required compatibility and interoperability of our medical service work with the work of other NATO armies' medical services. That was applied to education and training of doctors together with their research work.

Nowadays, open and creative cooperation is possible at international level. Many personal contacts of the department staff have been successfully developed with workplaces abroad, furthermore modern communication and information sources have been successfully used. The way to attend international professional congresses and symposia was open and doctors of our department have participated at them and their work has been presented there.

A real contribution and success of the ACR Medical Service is building and deployment of the ACR field medical facilities (Yugoslavia, Iraq, Afghanistan). The DMIM have participated in building, personnel training and recommendation of suitable material support.

CONCLUSIONS

After a brief survey of history, work and all activities of the DMIM from its foundation till present time, it is possible to claim without exaggera-

tion that a lot of really beneficial work for the ACR Medical Service as well as for public health system has been done at this department.

All who were and are members of this team deserve many thanks for their work.

ACKNOWLEDGMENTS

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

REFERENCES

References are stored by authors. They involve various official documents produced for the needs of the army and almanacs commemorated to various anniversaries of the military education system and civilian FM in Hradec Králové.