



---

## INNOVATIONS IN THE ORGANIZATION OF THE PRACTICAL TRAINING IN THE SUBJECT “MEDICAL LABORATORY ASSISTANTS”

**K. Kichukova\*, P. Teneva**

Medical College, TrakiaUniversity, Stara Zagora, Bulgaria

### ABSTRACT

In this article new approaches to the organization of the practical training in the subject “Medical laboratory assistants” are presented. The new allocation of the students into clinical bases for hospital and outpatients treatment in the public and private sector is examined. The work of the students both individually and in small groups expands their opportunities for development of professional competence, individual and team work. The efficiency of the organization of the practical training both for the students and the medical teams in the laboratories is analyzed. The students' opinion on the quality of the practical training in their principal area is investigated.

**Key words:** approach, organization, practical training, medical laboratory, assistant, competence, skills, clinical bases, medical teams.

### INTRODUCTION

Medical laboratory assistants are among the most important subsidiary medical specialists who provide second-level medical care necessary for prevention, diagnostics, treatment, rehabilitation and recovery in the field of social health. The new type of healthcare requires medical specialists acting not only as technical assistants but also as partners of the physicians.

Their level of education must correspond to the purposes of the modern achievements in medical microbiology and virusology, clinical laboratory, parasitology and histology.

The laboratory assistant works together with other medical specialists from inpatients and outpatients medical care units.

The new elements of the practical training are connected with the use of the theoretical foundations of the basic clinical disciplines as well as with the automation and modernization of the laboratory tests. New approaches for conducting laboratory tests are put into practice and their interpreting in the light of the

pathological mutations which occur in a number of diseases.

### MATERIALS AND METHODOLOGY

We used an analytical approach, questionnaire and discussion with an expert evaluation of the participants conducting the practical training. We analyzed the training programs (1) according to the unified governmental regulations for the subject “Medical laboratory assistants” and (2) to the existing organization of practical training at the Medical college of the Thracian University.

We made a research among 40 second- and third-year students by means of a questionnaire containing 13 questions, elaborated under the relevant criteria. Statistical, variative and graphic analyses were used for data processing of the questionnaire. Discussion and expert evaluation were performed by the medical specialists conducting the practical training in the relevant bases.

### DISCUSSION AND RESULTS

The subject “Medical laboratory assistants” was introduced in 2006 to the Medical College at the Thracian University in Stara Zagora as a result of restructuring of the medical schools and the public necessity of the region.

In academic year 2006/2007 15 students were admitted to the Medical College of Stara

---

\*Correspondence to: *Katya Stefanova Kichukova, Medical College, TrakiaUniversity, Stara Zagora, Bulgaria, 9, Armeyska Str., Tel. 0889310509, E-mail: katya\_1969@abv.bg*

Zagora. The increased need of cadres led to increase in the number of admitted students in this principal area in the academic years 2007/2008 and 2008/2009 by 30 students respectively. The syllabus in the subject also includes practical training which is organized by the college in compliance with the specific syllabus and the clinical practice programme of the practical training bases. The first alumni of 15 students conduct their clinical practice in the laboratories of the University Hospital for Active Treatment – Stara Zagora. Due to the small number of students the training is conducted in two groups. After the admission in the academic year 2007/2008 of 30 more students their number in the clinical bases for practical training increased and the number of trainees in the separate groups reach 10-15 students. The semester syllabus is drawn up so that the different courses and groups should not duplicate in the clinical bases. The new admission in the academic year 2008/2009 of 30 more students caused difficulties in the allocation of the clinical practice in days and groups in the syllabus. Concentration of one and more groups from different courses impedes the activity in the laboratory and leads to inefficient training of the students.

Since the academic year 2009/2010 the practical training in the subject Medical Laboratory Assistant has been carried out by staff lecturers at the Medical College. It is considered that the training in groups is not efficient enough and new opportunities are sought after. Lecturers see such opportunities in the expansion of the clinical training bases and inclusion of hospital and outpatients laboratories in the already existing bases of the two General Hospitals on the territory of Stara Zagora in the public and private sectors. The purpose is the students trained at the Medical College of Stara Zagora to be prepared to work both in modern automated laboratories as well as in smaller laboratory units where analyses are performed manually. This initiative for cooperation between lecturers, students and laboratory staff is welcomed by everybody.

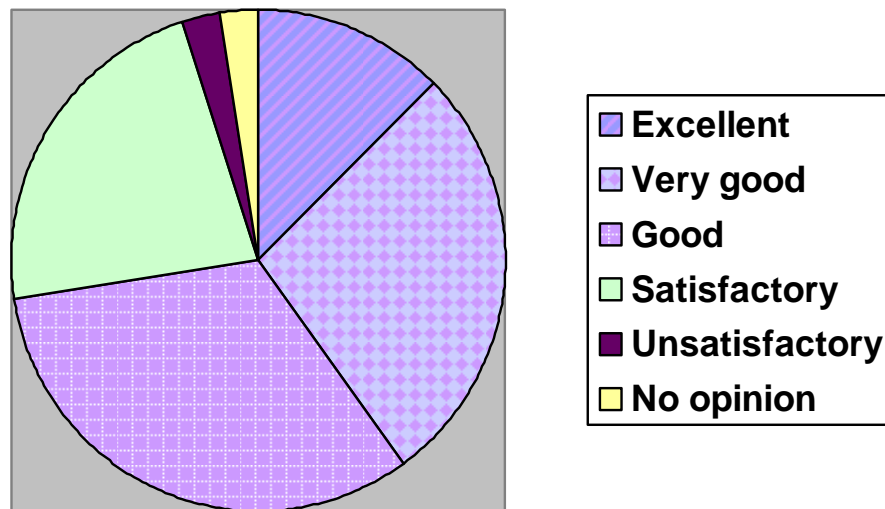
At the beginning of the academic year 2009/2010 bilateral contracts were concluded between the management of the healthcare institutions with high accreditation for quality and highly-qualified staff and the management of the Medical College, which regulate the rights and obligations of both parties.

The increased number of clinical bases leads to a new allocation of the students performed by the lecturers. The schedules are complied with the training level of the students – academic year, thematic units and academic content under the clinical practice programme. For more efficient individual studies the students visit the laboratories individually or in small groups of three, depending on the volume of work and the available staff potential. Laboratory physicians are glad to take part in the training. The new allocation enables individual work of the trainees with lecturers and with laboratory physicians and assistants. Under these new conditions no unclear points are left for the students and they have the opportunity to work out all methodological units with their lecturers.

All laboratories are equipped with contemporary automatic analyzers – biochemical, hematological, hemostaseological, immunological, etc. Students are able to familiarize in details with the operational principles of apparatuses and the methodologies of the relevant laboratory analyses. Their participation in the entire process of laboratory activity – pre-analytical, analytical and post-analytical stage, enables finding and correction of mistakes which could be made during work; to adopt skills and abilities to perform independent work at each stage of the laboratory process - from the request for a laboratory test to the receipt of the laboratory result. During the clinical practice the trainees are able to observe and work out some more specific laboratory indices which due to the continuous technological time for performance, the exacting biological material or the necessary highly specialized apparatuses may not be worked out at a regular practical exercise. Such are the process of obtaining and processing of blood and blood products in the hematology centres, testing of spinal-cord fluid in the stationary bases, spermograms in the specialized laboratories, etc. Having in mind the specific dynamics of this medical area and the introduction of new indices to the laboratory practice students have the opportunity to become familiar with these indices and to trace their dynamics in different pathological processes - hormones, medication levels, tumor markers, virusological and serological tests.

Another positive aspect in the conduct of the clinical practice is the contact of the students with the laboratory staff, the patients and their relatives. Communication with physicians and laboratory assistants in the clinical bases comprises official and unofficial interpersonal and group relations creating a specific atmosphere in the occupational environment. This atmosphere influences the performance of the obligations of the medical specialists and the formation of the moral aspect of the team. Students become aware of the rights and obligations of the medical specialist and the patient connected with the fundamental human rights and complying with the ethical

principles. In this aspect clinical practice is an element of a psychological training for elaboration of communicative skills aiming to clarify the psychological particularities of the situation “patient – laboratory assistant”. Visiting the clinical bases from the very beginning of the course of studies facilitates the students in their choice of a selective subject at a later stage of their studies. The efficiency of the new organization and the quality of the practical training at the Medical College was approved by over 70% of the questioned persons who give an excellent, very good and good valuation of the organization of the practical training. (Fig. 1.)



**Fig.1.** Students' opinion on the organization of the practical training at the College

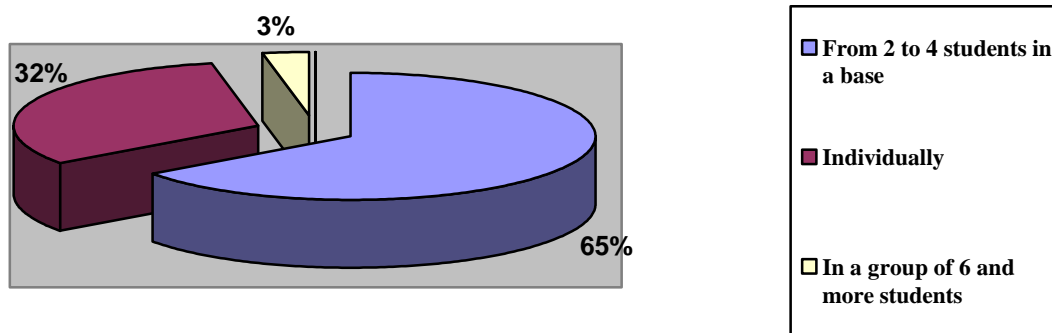
The participants in the questionnaire evaluate the clinical bases which they visit as very good, provided that 94% of them are satisfied with the attitude of the personal therein towards them. To the question “How would you prefer your practical training to be carried out?” 65% of the respondents answered “From 2 to 4 students in a base”, 32% prefer “Individually” and only 3% “In a group of 6 and more students”. (Fig. 2)

A large number of the students majoring as Medical Laboratory Assistants – 97% - approve of the clinical practice as it is currently conducted and believe that the individual work with lecturers facilitates them in their assimilation of the studied material.

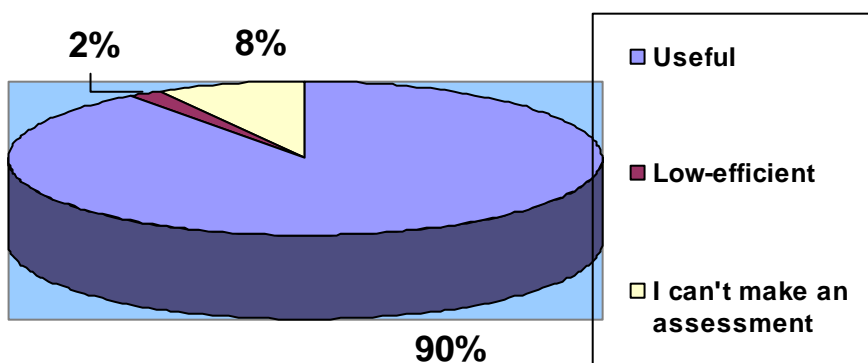
For us, the lecturers, it is very important to know the self-assessment of the trainees regarding their active participation in the laboratory activities and the reasons for their refraining from participation. Among the second-year respondents there are answers that they occasionally get involved in the laboratory activities. As a reason for that they point out “Untaught academic material” and that they perform some of the analyses more slowly which impedes the work process. In contrast with that, the third-year students indicate the answer “Yes, actively.” This is logical since during the pre-diploma training the students have completed their theoretical

studies and are able to perform all activities and manipulations in the laboratories. Around 90% of the participants in the questionnaire define the practical training as

useful and consider it could be helpful for their future realization in their principal area. **Fig. 3.**



**Fig. 2.** “How would you prefer your practical training to be carried out?”



**Fig. 3.** How do you evaluate your school practice?

For the purpose of improving the practical training 12% of the respondents recommend increase in the number of hours of clinical practice and 79% recommend conduct of more practical activities; the rest of the respondents do not share an opinion. This could be done by introducing summer training in the principal area.

The expert evaluation at the discussion held between lecturers and laboratory physicians shows that the new organization of the

practical training is more efficient in the individual studies or in training of smaller groups which coincides with the students’ opinion. There is increase in the interest towards the graduates and a large number of them are offered a specific opportunity for realization in the relevant clinical laboratory base.

The awareness that the medical laboratory assistants are active participants in the process

of diagnostic and treatment activity motivates the students for development of independence, creative thinking under the present conditions. It forms and establishes a new professional model of the specialist in healthcare who must be competitive both on the national and international market.

#### **REFERENCES**

1. Clinical Practice Programmes of the Subject "Medical Laboratory Assistant"
2. The unified governmental requirements towards the subject "Medical Laboratory Assistant"