Diplomierte medizinisch-technische analytikerinnen The profession of medical laboratory technologists biomedical scientists in Austria

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Historical background

The profession of Medical Laboratory Technologists in Austria started after world war I, but was not regulated by law till 1940. 1940 a bill passed, laying down the rules for education in laboratory -testing and radiography, both in theory and practice, which guaranteed protection of the profession.
The first schools based on this law were founded in Vienna and Innsbruck. "A-Level Qualification" was the entry criteria for this Lab Tech training already then. The period of training lasted
Either:

a) 1 year and led to the profession of "Medizinisch-Technische Gehilfin" (Medical Laboratory Technician) or
b) 2 years for full qualification as "Medizinisch-technische Assistentin" (Medical Laboratory Technologist).

After world war II laws, passed between 1938–1945 (German occupation), were declared invalid and the Lab Techs in Austria had to face the fact that their education was not based on any valid law any more. Schools had neither a financial nor a legal basis by then, but due to the personal effort of very few university professors the further existence of this education was guaranteed.
In 1949 the profession came under the nurses law, a disastrous decision for the Lab Tech colleagues. As a result the Austrian Laboratory Technologists Association was founded 1951 in order to fight for independence and better recognition of the profession. This resultated in an amendment of the law in 1961.
Remarkable, that even then only the female form was used in the legal text, a signal that in Austria the profession was (and is up to now) a woman´s profession.
1992, by act of the "Bundesgesetz über die Regelung der gehobenen medizinisch- technischen Dienste (MTD-Gesetz BGBL 1992/460)" the 7 paramedical professions* (Medizinisch-technische Dienste) were regulated in an individual law and herewith the final legal separation between the nurses and the paramedical professions took place. The education decree followed 1993 (BGBL 1993/257). The competent authority for the paramedical professions is the Ministry of Health and not the Ministry of Education as in most of the other European countries.
Since 1992 the training lasts 3 years, the schools turned to academies and the professional title changed to "diplomierte Medizinisch -Technische AnalytikerIn" (dipl. MTA).

Professional education

To be trained as a medical laboratory technologist, increasingly now called "Biomedical Scientist", A-Level graduation as an entry qualification is required. The training lasts 3 years. Holidays are 4 weeks in July or August, 1 week before Easter and 1 week for X-mas.
The training to become a medical laboratory technologist aims at the directly responsible execution of all laboratory methods following physician's direction.
Eight academies offer this kind of Lab Tech training in Austria. Three academies are directly attached to University Clinics. Therefore, top qualified University Professors are engaged as lecturers.

Attached an overview on the education in 2002

Qualification

- Qualification title: *Diplomierte(r) medizinisch-technische(r) Analytiker(in)*
- Main fields of study for the qualification: *Laboratory medicine*
- Name and status of the awarding institution: *Akademie für den medizinisch-technischen Laboratoriumsdienst, College of Higher Education, Federal State Authority*
- Language of instruction: *German*
- Level of qualification: *postsecondary Diploma*
- Official programme duration: *3 years, theoretical*

Table I. Academies for teaching Medical Laboratory Technology in Austria (at present 8).

Wien
Akademie für den medizinisch-technischen Laboratoriumsdienst am A. ö. KH der Stadt Wien
Lazarettgasse 14, 1090 Wien
http://www.magwien.gv.at/kav/mtd/mta/index.htm

Niederösterreich
Akademie für den medizinisch-technischen Laboratoriumsdienst am KH Wiener Neustadt
Corvinusring 20, 2700 Wiener Neustadt
http://www.kh-wrn.ac.at/

Oberösterreich
Akademie für den medizinisch-technischen Laboratoriumsdienst am KH der Stadt Linz
Krankenhausstraße 9, 4020 Linz
http://www.lkh-linz.at/

Akademie für den medizinisch-technischen Laboratoriumsdienst am LKH Steyr
Sierninger Straße 170, 4400 Steyr
http://www.lkh-steyr.at/einricht/mtaindex.htm

Steiermark
Akademie für den medizinisch-technischen Laboratoriumsdienst an der LNK Sigmund Freud
Wagner Jaureggplatz 23, 8053 Graz
http://www.gesundheit.steiermark.at/adressen/adressen_typ_detail.asp?ID=1726

Salzburg
Akademie für den medizinisch-technischen Laboratoriumsdienst am LKH Salzburg
Müllner Hauptstraße 48, 5020 Salzburg
http://www.salzburg.gv.at/gesundheit/g-berufe/ausbildungseinrichtungen.htm

Kärnten
Akademie für den medizinisch-technischen Laboratoriumsdienst LKH Klagenfurt
Sankt Veiterstraße 47, 9020 Klagenfurt

Tirol
Akademie für den medizinisch-technischen Laboratoriumsdienst Ausbildungszentrum West für Gesundheitsberufe
Innrain 98, 6020 Innsbruck
http://www.azw.ac.at/

and vocational training, 40 hours obligatory attendance per week for 132 weeks, 4135 hours, (1835 hours theory and 2300 hours practise minimum)
- Entry requirements: *Matura= equivalent to A-level qualification.*

Training
- Mode of study: *Full-time study*
- Programme requirements: *The programme is divided in three years. Its necessary to pass all examinations of the first year to start with the second year and the student has to pass all examinations of the second year to start the third year. Then she/he can start the diploma examinations. The student has to undertake written and oral examinations. For obtaining a diploma it is necessary to write a thesis.*
- Programme details:
  First year
  Gaining fundamental knowledge pertaining to clinical chemistry, hematology, immunehematology and hemostaseology, Histology and Cytology, Microbiology, Microphotography
  Total: 8 hours theoretical and practical training / day in the academy
  Second year
  The students are trained in a 4 hours/day practical out- door training in applied clinical laboratory science* in laboratories, located in university institutes and in surrounding hospitals. The students are supervised by instructors. This training is conductive to increase the already acquired knowledge and can be rendered by the students at a practical training place of their choice. In addition a practical in door training at the academy in the following subjects in offered:
  - immunological methods, molecular biological methods and cell culture methods
  - cardio-pulmonal functional testing and neurological functional testing
  4 hours/day lectures and microscopy classes for hematology and histology have to be attended too.
  Third year
  4 hours/day practical out- door training as in the second year and in addition:
- practical training in various laboratories (see: training in the second year)
  (4 hours/day)
- lectures/theoretical subjects or Microscopy courses for Cytology (3-4 hours/day).

For final qualification
- a diploma examination consisting of a theoretical and a practical part has to be passed and
- a thesis has to be written by the students dealing with a professional subject of the training. The student may choose freely the thesis topic, which has to be approved by the head office. The students also may choose his/her supervisors.
  Criteria of assessment are content, method and form. The thesis is supervised and rated by two instructors. The thesis has to be presented to the members of the diploma committee.

In spite of the high standard of education, unfortunately Austrian Lab Techs have not yet access to university studies for upgrading in one of the trained subjects. Negotiations with the Ministry of Health and the Ministry of Education are going on in re-

**Applied clinical laboratory science include:*
clinical chemistry, haematology, hemostaseology, immunehematology, histology, cytology, microbiology, immunology, molecular biology, microscopy, radiation protection, cardio-pulmonal functional diagnostics and neurological functional testing.

Table II. Schedule of instruction.

Subject	1 year/ h	2 year/ h	3 year/ h	Exams
Theory and ethics of the profession	15		15	TV
Clinical laboratory science: (methods)				EP
- Clinical chemistry	100			EP
- Hematology and hemostaseology	70			EP
- Immunehematology	40			EP
- Histology and cytology	60			EP
- Microbiology	60			EP
Microphotography	40			EP
Bloodtaking technics	10			TV
First aid	20			EP
Anatomy	60			EP
Physiology	60			EP
Hygiene and environmental protection	40			EP
Chemistry (inorganic, organic, biochemistry, clinical chemistry)	120	120	80	EP
Immunology	30	30		EP
Histology and fundamentals in histo-pathology		80		EP
Microbiology		70		EP
Hematology and hemostaseology		100		EP
Immunehematology		40		EP
Biomedical technology + fundamental knowledge pertaining to physics	80			EP
Mechanized analysis in medical laboratories			40	EP
Cytology			50	EP
Pathology		60		EP
Molecularbiology			30	EP
Radiation protection and fundamental practise with radioisotopes			60	EP
Theoretical introduction into nursing	10			TV
Psychology	40		40	TV
EDP, medical computing, statistics, documentation			80	EP
Medical English			40	TV
Fundamentals of medical, labour and social insurance legislation			30	EP
Fundamentals of hospital management			15	EP

EP: exam taken singly; TV: obligatory attendance.

spect of “Fachhochschul – or University Education” and we are positive, that for all 7 paramedical professions a solution will be found.

The profession

The profession is not yet registered in Austria. It is protected by law, but not registered.
Negotiations with the Ministry of Health are going on, for a supplementary to MTD law, an Act for the establishment of a Council, Boards and disciplinary committees for professions that include ours, to provide for the registration of members of those professions and for regulating their professional education and professional conduct. The board´s function should promote high standards of professional education and professional conduct among members of the profession. It will also held a register of all persons who are entitled (according to the Act) to be state registered and who apply to be registered. One of the main reasons for a self-controlled legal registration would be, to strengthen the associations and give them more legislative rights and to get more statistical information. We are positive in reaching this goal in the next 2-3 years.
Without registration a statistical overview on the profession is impossible. This fact led to a study “Quality Assurance of the Lab Tech Profession in Austria" undertaken under the auspices of the Ministry of Health in cooperation with the Austrian Lab Tech Association. This study was a 2 years work, including a scientific survey and it created a quality assured professional profile". The final report includes also comments of the doctors chamber and other official authorities and will be published in spring 2003.
A randomised study with 1000 questionnaires was part of the survey. 600 were answered and analysed. One of the interesting outcomes shows in which medical fields Austrian Lab Techs are active (Figure 1): (10 % of the Austrian Lab Techs work mainly in research; 5 % have to divide their job 50:50 between routine and research tasks and 85% are working in routine labs).

Figure 1. Medical fields in Austrian Lab Techs are active.

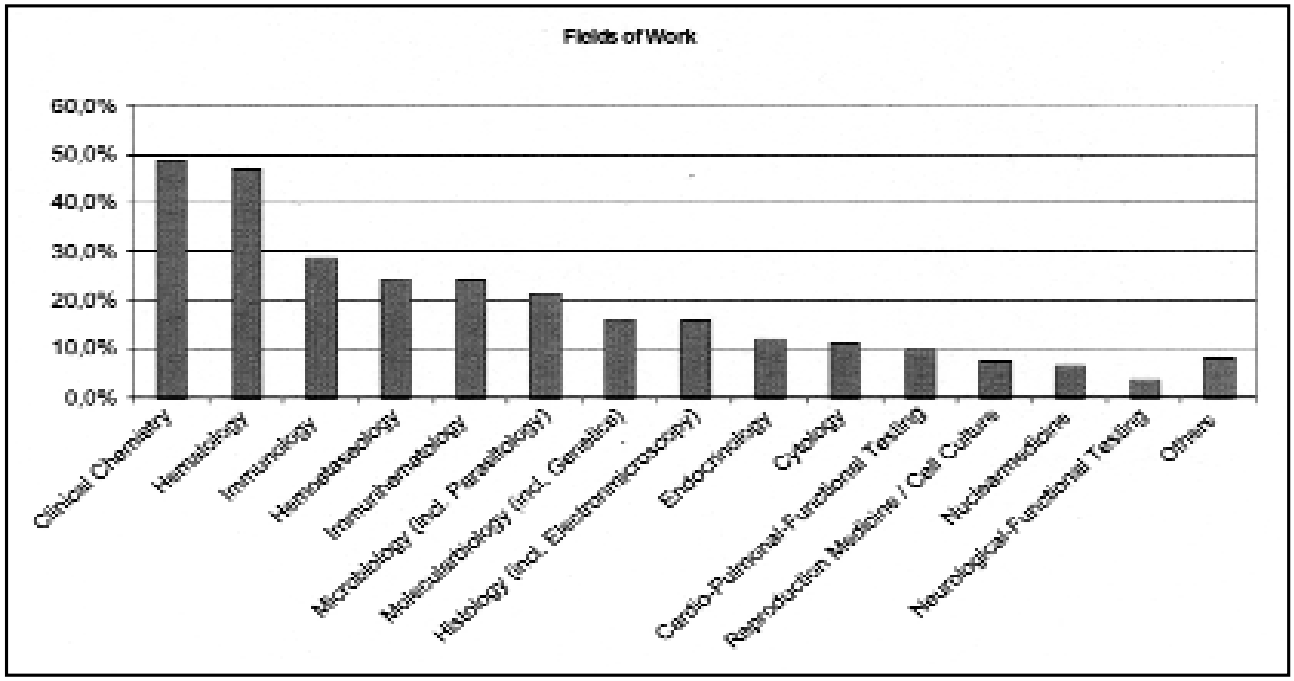

Table III. The institutions MTA are employed.

Employers	*Percent*
Hospitals	49
University Clinics	18
University Institutes	12
Private Medical Laboratories Private Practitioners or Specialists	11
Others e.g. Red Cross, Blood Product Companies, Rehabilitation Centres, Public bacteriological institutes	10

The profession in the EU

The fact that our education is academy based and not on university level leads to recognition problems within the EU, even though the postsecondary education is comparable in content and schedule.
Hence we aim to upgrade the education to University or Fachhochschul level to avoid further complications.
Diplomas of EU colleagues, who wish to work in Austria are recognized according to the 89/48 EU guidelines. Colleagues from other countries (outside the EU) have to have their diplomas recognized by the Austrian Ministry of Health. The deans of the academies are part of the expert team advising the Ministry of Health in these evaluations.

Der Österreichische Berufsverband der diplomierten MTA (MTA Verband)
Austrian Association of Medical Laboratory Technologists

Der öst. MTA Verband was founded in 1950 and since then it is a very active organisation.
It was one of the founding member associations of the International Association of Medical Laboratory Technologists (IAMLT) and of the European Associations of Medical Laboratory Technologists (ECMLTA). It always played an active role in these associations. So far three Austrian colleagues were elected board members in the IAMLT during the last 25 years. In Austria the MTA Verband acts as expert by legal authorities.
To offer continuing and further education was and still is one of the major function of the association.
The MTA Verband has its head office in Vienna* and is an umbrella organisation of seven local branches.
We endeaver a closer contact with all our colleagues in the European Union, but especially with those of our neighbour countries. Therefore we are pleased and delighted to be invited in Milano to strengthen this contacts.
We truly hope to play together with our European Lab Tech colleagues a more active role in the European Union Medical and Health Network.