Medical education in the Bachelor-Master structure: the Swiss model

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Abstract

Medical education is one of the fields in which the implementation of the Bologna process, especially the introduction of a Bologna-type two-cycle degree structure, has encountered resistance in most European countries. In most countries, the integrated curriculum in medical education has been maintained. Switzerland is an exception, moving towards the implementation of a two-cycle degree structure with a labour-market relevant Bachelor degree. The Swiss medical faculties have developed a model that meets the requirements of the Bologna process, and at the same time conforms to the European directives on medical education and to Swiss federal legislation. This article presents the Swiss model in the context of the general debate on Bologna reforms in medical education. Special attention is paid to aspects of the reforms which make the Swiss case a potential example for medical education throughout Europe.

Content Page

1. Introduction

Medical education is one of the fields in which the implementation of the Bologna process and especially the introduction of a "Bologna-type" two-cycle degree structure has been perceived as particularly difficult. In most European higher education systems, medical curricula have not been adapted in response to the Bologna process. However, Swiss medical education is both an exception and a potential example, having used the Bologna process as an opportunity for a profound reform of degree structures. Medical faculties have developed a more flexible curriculum with a labour market relevant Bachelor degree, different specialization options at Master level and a new research doctorate. The model meets both the requirements of the Bologna process and of the European directives on medical education, and conforms to Swiss federal legislation. This article presents the Swiss reforms and the new model in the context of the general debate on Bologna reforms in medical education in Europe, and pays special attention to aspects of the reforms which make the Swiss case a potential example for medical education throughout Europe. The article is based on findings from a study commissioned by the Directorate-General for Education and Culture of the European Commission on "The extent and impact of higher education curricular reform across Europe" (Huisman et al. 2006a).

The article begins with an overview of Bologna-related debates and reforms concerning medical education across Europe, followed by a presentation of the Swiss case study, and ends with some conclusions.

2. European developments in medical education

This section presents an overview of the European debate on Bologna reforms in medical education, and looks briefly at the reform process in various countries. It is based on an analysis of policy statements from international medical organisations (Witte & Huisman 2006) and national reports on curriculum reform in 32 European countries (Huisman et al. 2006b).

2.1 European debates

Ambiguous position

The position of medical studies in the Bologna process is ambiguous. On the one hand, the implementation of a Bologna-type two-cycle degree structure in medical education is – at least to date – considered inappropriate by the national medical associations in most European countries. On the other hand, the relevant international medical education organisations approve of most of the objectives of the Bologna process, and emphasise that some of these objectives are in line with national reform programmes in medical studies all over Europe (WFME & AMEE 2005). The discipline has engaged in elements of European cooperation such as the implementation of the European Credit Transfer System (ECTS), the promotion of mobility, recognition, and quality assurance initiatives. There is a strong interest at disciplinary and institutional levels to learn from experiences elsewhere. The medical community is well networked at European level and has recently begun to engage in the Bologna process in a broader sense, through networks such as the Thematic Network on Medical Education in Europe (MEDINE), funded by the EC's Directorate-General for Education and Culture (DG EAC, see www.bris.ac.uk/medine/). Based on a survey of 236 medical schools in 19 European countries, the World Federation for Medical Education (WFME) and the Association for Medical Education in Europe (AMEE) concluded that overall "the reactions to the actions within the Bologna process are evenly distributed between support and rejection" (WFME & AMEE 2005: 3).

This ambiguity is manifest in the following overview of medical education in European countries regarding the introduction of a two-cycle degree structure and the creation of flexible learning paths.

2.2 Two-cycle degree structure

Two-cycle structure considered problematic

As documented in a joint statement on the Bologna process and medical education by WFME and AMEE, released in February 2005 (WFME & AMEE 2005), there is broad consensus in the medical community that "the introduction of the two-cycle structure is problematic and could even be harmful to medical education and its quality, to the medical schools, the students and the profession, and in the last resort to the health care system and its patients" (WFME & AMEE 2005: 2). Both organisations recommend that the common long, integrated, one-tier structure should be kept, or that the first cycle should be established as the first part only of the medical programme, without a special vocational/professional use.

Bachelor not seen as necessary

A study by the European Medical Association (EMA 2005) on the implementation of the Bologna process in medical education lists several reasons against the implementation of the two-cycle system. One of them is that most of the recent study reforms in medical education across Europe aim at the combination of basic and clinical sciences. There is an ongoing discussion on how to integrate clinical sciences into the curriculum without neglecting the necessary theoretical foundations. A first-cycle degree is generally considered to make this even more problematic, especially since there are medical subjects that need to be taught for more than three years. Another reason is that fields of employability for Bachelor graduates are not yet well developed. Since there are no bridges to other subjects so far, most academic and professional associations in the medical field do not see the need for a Bachelor degree.

EU directive

Furthermore, the EU directive (No. 93/16/EEC Art 23 par. 2) about the recognition of medical degrees and qualifications in Europe is seen as in tension with the Bologna process and its main features, such as ECTS and the two-cycle degree structure (EMA 2005: 31). Among others, the directive stipulates that medical programmes in the EU consist of 5,500 hours or six years of full-time education. In almost all countries, integrated curricula are therefore maintained, most of them encompassing 360–420 ECTS credits (6-7 years) for the Bachelor and Master degree in combination (Reichert & Tauch 2005: 13). Additional postgraduate specialisation on top of Master-level education is needed before a graduate can take up employment as a doctor.

Two-cycle systems

Within this framework of supra-national regulation concerning degrees and qualifications, there is considerable variety between European countries in the way medical education has been organised. Medical professional bodies play an important role in this variety. However, following the EU directive, in no country can the overall length of medical studies fall below a total of six years full-time study. Therefore, the few countries that have moved medical education to a

Bologna-type two-cycle degree structure maintain the total length of six years for the first and the second cycle.

Denmark and the Netherlands

In Denmark, a 3+3 structure is used, having been introduced in 1993, long before the Bologna process. It was modified in 2000, but the integrated curriculum has been maintained, which means that the value of the Bachelor degree is questionable. In practice, it does not even function as a mobility point for changing universities within Denmark. In the Netherlands, the transition of medical education to the two-cycle structure is currently taking place, and almost half of the universities have introduced a Bachelor-Master structure for medicine, equally following a 3+3 year structure. As in Denmark, the Bachelor does not qualify for the labour market.

In both countries, as well as in Switzerland, as described later in this article, the choice of the 3+3 model is not imposed by national regulation, but was an obvious choice since this corresponds to the structural reforms in these countries where a 3+2 model is the standard for most programmes. The standard 2-year Master was extended by an extra year to allow for the clinical period and to comply with EU regulations regarding the overall length of studies.

Italy, Austria, Czech Republic and Flanders

In Italy, the degrees in medicine and surgery follow the traditional integrated 6-year model (5 years in dentistry). However other healthcare professions, such as nursing and assistant dentistry follow a 3+2 structure. Similarly, the Austrian universities offer Bachelor and Master programmes in the healthcare fields alongside their traditional *Diplom* programmes, for example a Bachelor programme in nursing sciences, and Bachelor and Master programmes in biomedicine & biotechnology. In the Czech Republic, there are plans to develop an undergraduate (science) programme in medicine. A Bachelor degree in medicine also exists in the Flemish region of Belgium; it does not however qualify for the labour market.

Other non-Bologna tiered systems

Many other countries have tiered degree structures in medical education with a number of cycles, often structured around the non-clinical and clinical parts of education and training, however these are not Bologna-type tiered systems. For example, the traditional French degree structure in medicine follows a 2+4-structure, followed by doctoral studies. The degree after a total of 6 years is however not considered a Master degree, as it is not integrated into the French Bologna framework (LMD). In the UK, where the two-cycle degree structure is traditional for most subjects, medical education follows an integrated curriculum: the normal pattern of medical degrees in the UK is five years full-time academic study, followed by one year as a Pre-Registration House Officer (PRHO). After this, medics are then fully registered to practice. The interesting aspect in terms of cycles is that upon completion of the academic period of study, UK medical students graduate with two first-cycle degrees simultaneously: a Bachelor

of Medicine (M.B.) and a Bachelor of Surgery (Ch.B.), hence their post-nominal designation M.B.Ch.B. A recent innovation, also available in Ireland, has been to offer a slightly condensed 4-year medical degree as a second first-cycle degree to more mature students who have already gained a first-cycle degree in another subject.

UK medics tend not to follow a second-cycle medical degree, but some go on to undertake a third-cycle professional doctorate, the M.D. (Doctor of Medicine) which tends to be taken in one to two years, a much shorter period than for a conventional Ph.D. This has led the authors of the EUA Trends IV report to conclude that "it is difficult to see how this model in its present form could be integrated as a *second* cycle qualification to the overarching European higher education qualifications framework" (Reichert & Tauch, 2005: 16). A similar model is followed in Spain, where the deans of the faculties of medicine agreed on an integrated Master programme of six years, with a total of 360 ECTS credits, at the end of which a graduate and a postgraduate degree can be obtained simultaneously.

2.3 Flexible learning paths

Lack of flexibility

The Thematic Network for Medical Education (Medine 2007) promotes flexible learning paths as a means to facilitate transfer and compatibility with different education programmes in the health care fields. This flexibility is however difficult to achieve given the traditional elitist character of the medical profession and its separate organisation from other health professions in most European countries. There are only very few courses in medical programmes throughout Europe which are optional. Many national reports explicitly acknowledge this lack of flexibility (e.g. Estonia, Poland, Malta and Romania).

But there are notable exceptions. In the UK and Ireland, as already noted, a recent innovation has been to offer a slightly condensed 4-year medical degree as a second first-cycle degree to more mature students who have already gained a first-cycle degree in another subject. In some specialised areas such as medical ethics or medical education, UK students can also follow second-cycle Master degrees in addition to their full medical programme. The same applies in Germany where, in addition to the traditional integrated medical education, some universities offer specialised Master degrees in areas such as public health or tropical medicine. The Austrian report mentions an increase in flexibility through new teaching modes.

Opening the second cycle

There are debates across a number of countries regarding the need to make the graduate cycle more open to students who have not finalised an undergraduate degree in medicine. In many countries, mechanisms are now in place to allow foreign medical students to enter national programmes. Some countries, such as Belgium, are also making struc-

tural arrangements to allow the progression of first-cycle graduates from related fields to the second cycle of medical programmes. Depending on the nature of their first-cycle health programme, students need to take bridging courses before entering a second-cycle programme in medicine.

3. The Swiss case study

Against the backdrop of these European developments, the Swiss reforms in medical education stand out as exemplary in many respects. The Swiss case study is presented in three parts: first, some background information is given (3.1), next the Bologna reforms are presented (3.2), followed by some responses to the reform and an outlook on future perspectives (3.3). Information on this case derives from official documents and from interviews conducted with a selective group of actors in the field in autumn 2006.

3.1 Background

This section provides some context on the implementation of the Swiss Bologna reforms in general, medical education in Switzerland, and the way towards the Bologna reforms.

3.1.1 Bologna reforms in Switzerland

In Swiss higher education, power is distributed between the Confederation and the cantons. Most universities are cantonal which means that they are financed mainly by the cantons and to a lesser extent by the Confederation, and that they are under cantonal authority. In most cantons, the legislation ensures broad autonomy for universities regarding the structure of their internal organisation and regulations.

While Switzerland is not part of the European Union, it is strongly linked to it through a variety of bilateral agreements, including for example participation in the EU Research Framework Programme, to which Switzerland also contributes.

Bologna reforms to be concluded by 2010…

The implementation of Bologna reforms in Switzerland is in progress. In 2003, a task force representing different types of higher education institutions, students, cantons and the Confederation elaborated national guidelines, aiming at better programme quality, increased student mobility, a higher degree of inter-disciplinarity of degree programmes, and the promotion of equal opportunity (SUK 2003). These guidelines are binding for all universities. They stipulate that the in-

troduction of ECTS and the conversion to Bachelor and Masters degrees (with a workload of 180 and 90-120 ECTS credits respectively) should be implemented by 2010[1].

… except for medical education

Since a revision of the federal legislation for medical professions was ongoing at the time the guidelines were formulated, an exception was made for the field of medical studies, which has been granted more time.

3.1.2 Medical education in Switzerland

Former model

Medical education leading to the profession of a physician is offered at five cantonal universities, and has been organised as follows:

- The initial training at university takes six years, including ten months of clinical electives. Exams are taken after both the first and the second years, organised by the Federal Office of Public Health.
- Towards the end of these six years, a medical student usually writes a dissertation leading to the degree of Dr. med. This degree is not comparable to a research PhD in other disciplines and was often criticised for its low requirements (CRUS 2004a).
- Thereafter, the student is eligible to take the federal examination (*Staatsexamen*), which has been mandatory for national and international recognition as a practicing physician and for access to continuing education. This examination is organised by the Federal Office of Public Health simultaneously all over Switzerland.
- For the following five years, the young physician works as an assistant doctor under supervision at a hospital or medical practice.
- He or she then takes another exam to become a medical specialist (*Facharzt)*, which allows him or her to work independently.
- Continuous education is mandatory for every physician.

Restricted access, high drop-out

Since 1998, medical faculties have had the possibility to restrict access to medical education in the case of excessive numbers of applicants. A central body, the Swiss University Conference (SUK), assigns the number of available places per university. The three faculties of medicine in the German-speaking part of Switzerland regulate access through an aptitude test, while the two faculties in the French-speaking part have introduced selection during the first year of studies. In 2007, 3042 candidates applied for 984 available study places in human medicine (CRUS 2007). In addition to this restricted access,

[1] By the winter semester 2005/06, 71% of all programmes followed the new system.

drop-out is also high: of all students starting their university education in medicine and pharmacy in 1995, ten years later 60.4% had completed a degree in these disciplines, with a further 12.3% completing a degree in another discipline (BFS 2006).

3.1.3 Pre-Bologna preparations

Problem awareness

In the mid-1990s, there was increased awareness that some aspects of Swiss medical education were problematic. The Swiss Science and Technology Council (SWTR) formulated a number of concerns, as follows:

- the demand for general practitioners – more than 50% of all physicians in Switzerland belong to this category – was not being met by medical education;
- social and economic aspects were not considered;
- a tight curriculum structure made it nearly impossible to adjust contents; and
- the pedagogical methods (mainly ex-cathedra lectures) did not allow for the preparation of students for lifelong learning (SWTR 2006).

WHO definitions

The WHO definition of health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO 2006) began to receive increasing attention in the education sphere also. Kaiser (2005) underlines that the medical practitioner assumes different roles as care provider, decision maker, communicator, community leader and manager. Medicine should be oriented towards the patient. Both the biomedical definition of illness and the subjective experience and interpretation of illness by the patient should be taken into consideration. Medical education needs to respond to three dimensions: knowledge, skills and attitudes. In order to reach these objectives, teaching and learning methods as well as examinations were in need of adjustment (Kaiser 2005).

Pre-Bologna curricular reforms

Based on these considerations at national and international levels, reforms were initiated from the mid-1990s onwards. Between 1996 and 2005, Swiss medical faculties reformed their medical curricula, aiming at the promotion of:

- independent, efficient and lifelong learning;
- critical judgement;
- the application of scientific methods; and
- the development of social, ethical, communicative and economic competencies (Kaiser 2005).

Swiss catalogue of learning objectives

In the context of these reforms, the Joint Commission of the Swiss Medical Schools (*Schweizerische Medizinische Interfakultätskommission*, SMIFK) in collaboration with the medical faculties and the Swiss Medical Association, elaborated the "Swiss Catalogue of Learning Objectives for Undergraduate Medical Training"[2]. This catalogue was implemented in 2003/04 and is applied by all medical faculties in Switzerland. It is currently under revision for adaptation to the Bologna requirements.

Clinical content from first year

With the introduction of the Catalogue of Learning Objectives, there was a significant change in the structure of training: previously, the first three years were dedicated exclusively to basic scientific content, while clinical content was part of years four to six. Clinical content is now included from the first year onwards.

A side-effect of these reforms implemented by individual universities has been enhanced coordination at national level, mainly through two bodies: the SMIFK and an executive board for federal examinations in medicine.

New federal law

In parallel to the implementation of the learning objectives and individual reforms at the medical faculties, a revision of the federal law on medical professions was prepared. In 2006, the national parliament passed the law which then came into force in September 2007 and allowed for an implementation period of three years. In line with the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training, the law defines the knowledge, competencies and skills, including soft skills and personal development, which medical graduates should have acquired during their studies. It also regulates federal examinations, further education, working life and stipulates the accreditation of degree programmes.

Comprehensive reform

These two reforms – the implementation of learning objectives and the revised legislation on medical professions – improved interdisciplinarity and allowed for earlier contact of students with clinical work and patients. In this way, the Swiss faculties of medicine were able to undertake a comprehensive curriculum reform and to introduce innovative pedagogic methods (Bader 2005).

CRUS initiative

While the reforms mentioned above mainly addressed content and curricular aspects, the Swiss Rectors' Conference (CRUS) also began to address issues of funding and the distribution of authority and competencies in medical education in Switzerland. In 2004 it published a conceptual paper entitled "university medical education 2008" (*Hochschulmedizin 2008*) (CRUS 2004a), presenting problems and proposing solutions in the areas of:

[2] The catalogue is available at www.smifk.ch.

- university training of physicians;
- their professional further training;
- the division of responsibilities in training;
- medical research; and
- funding of research and training.

Various measures were proposed to address these issues, including the renewal of training content and the establishment of a two-cycle degree structure in the context of the Bologna process. It was followed by a strategy paper (CRUS 2004b), which highlighted the responsibility of medical faculties regarding both content and funding when implementing the Bologna requirements.

3.2 Bologna reforms in Swiss medical education

This section presents the Bologna reforms in Swiss medical education, starting from the resistance against them and the formulation of a new model, then presenting the design of the new degree structure and outlining the implementation process. A case study from the University of Basel is also included.

3.2.1 Resistance and agreement

Initial resistance

Initially there was some resistance among the medical faculties regarding the implementation of the Bologna requirements in medical education. In particular, the idea of a three-year degree which would qualify for the labour market did not receive much support. There was also resistance against the replacement of one clearly defined curriculum by a variety of different study courses allowing for flexible learning paths (Bader 2005).

Building on earlier reforms

It soon became clear, however, that the new law on medical professions and the reforms which had already been implemented were in line with the Bologna objectives (Suter 2005). In April 2005, the rectors of the five universities offering a full medical programme, together with the deans of the faculties of medicine, unanimously passed a model for the application of the Bologna structure to medical education that had been proposed by the SMIFK. It is in line with the European Bologna principles and the Swiss legislation on Bologna (CRUS 2005). The details of implementation are up to the faculties. The model is presented in the following section.

3.2.2 New model of Swiss medical education

3+2+1 structure

According to the new model, Swiss medical education is generally conceived as an integrated programme of five years of university studies (a Bachelor degree of 180 ECTS credits followed by a Masters degree of 120 ECTS credits) plus ten months of clinical electives (60 ECTS credits). This programme is mandatory for those students who want to work as medical practitioners. As under the old system, access to the *Staatsexamen* is given only after six years, including the clinical electives. The degree of "Dr. med." is abolished and replaced by a more research-oriented doctoral degree that is more in line with the Bologna principles for third-cycle degrees (CRUS 2004a).

Greater flexibility

While it is expected that most medical students aim to become physicians, the new model allows for other tracks to be followed as well. Starting at Bachelor level, other majors can be chosen instead of the "physician track", such as dental medicine, biomedical sciences, international health, public health or neurosciences (Kaiser 2006). Students can then choose their Master degree in accordance with their major[3].

Physician track

Upon completion of their Bachelor degree, students who want to become physicians choose the Master degree in clinical medicine (access possible with a Bachelor with a major in clinical medicine), consisting of a total of 180 ECTS credits. 120 of these credits are to be taken at university and 60 credits are clinical electives, to be taken during the second or third year of the Master programme. Upon completion of the Master degree, students can enrol for the *Staatsexamen*, which is organised by the Federal Office of Public Health as previously. Responsibility for examinations during studies is handed over to the faculties.

Other tracks

If a student opts for another career than that of a physician, he or she can choose between several possible pathways and exit points within a basic structure of a three-year Bachelor and a two-year Master degree (180 and 120 ECTS credits, respectively). The universities are free to offer different majors at Bachelor and Master levels, among which students can choose in order to specialise in specific areas. If there are agreements among the faculties, students can also choose majors from other non-medical faculties.

Possible "exit points"

A student can leave the medical faculty upon completion the Bachelor degree. However, a Bachelor degree does not qualify for practice as a physician. Generally, it is expected that Bachelor graduates in medi-

[3] During the Bachelor, switching between majors is possible (with the exception of dental medicine which has a separate *numerus clausus*). What counts for access to the Master is the major in the last year of the Bachelor.

cine will continue to the Master programme, but new combinations and tracks are possible. A Bachelor degree in medicine can be combined with a second Bachelor degree in another field (for example in information technology, communications or economics) which allows to assume new tasks in the area of health, or it opens the possibility of a vocational occupation, for example in the pharmaceutical industry, in medical-technical professions or in the area of social security. Holders of a Bachelor degree in medicine have basic knowledge and skills in scientific working and regarding the healthy and ill person and act professionally in their job-related environment (Kaiser 2006).

Master and doctorate

With a Master degree of 120 ECTS credits, a student has completed his or her medical education and enters the labour market, but he or she is not allowed to work with patients. If a student with a Master degree wants to enrol for the Federal Examination, one additional year of clinical electives is mandatory, but it can also be done later, for example after a doctorate. There is also the possibility to begin a research doctorate without having done the clinical electives.

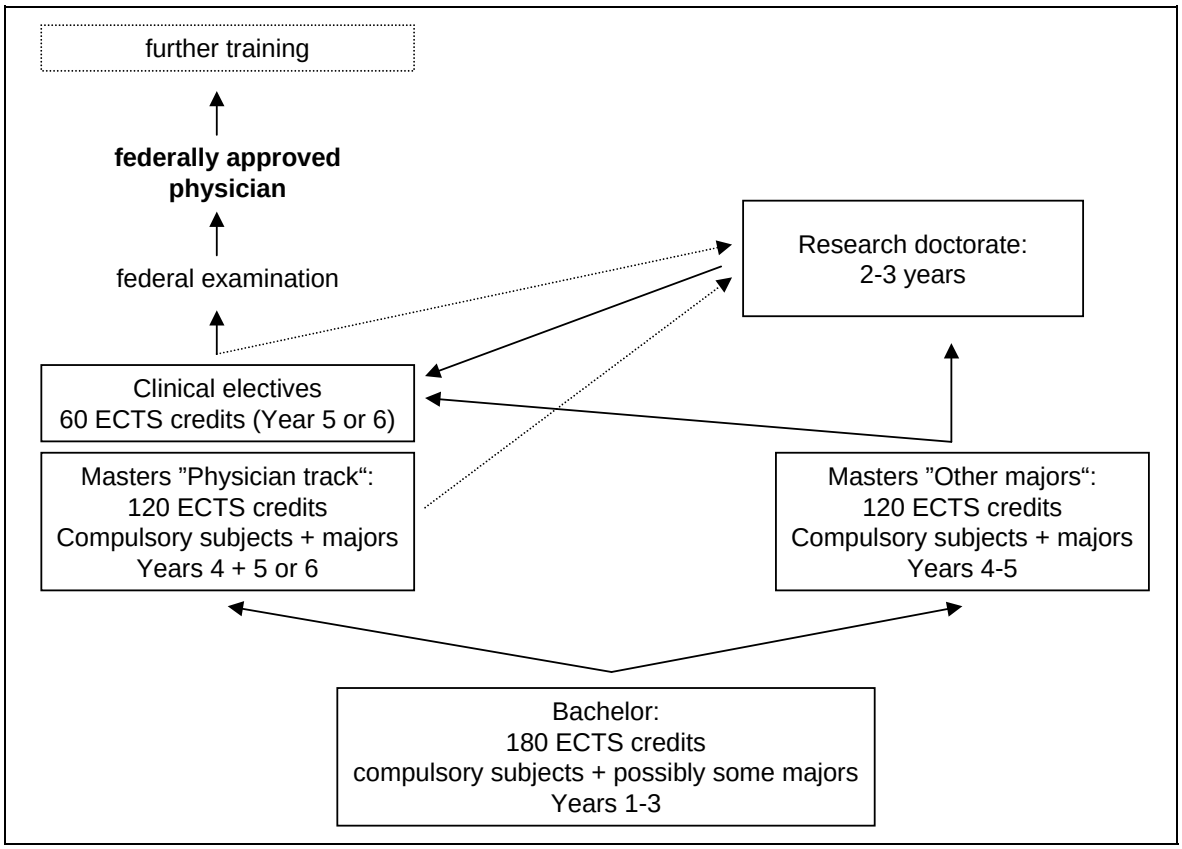

Fig. C 5.1-1-1 Different tracks in the new degree structure

Figure C 5.1-1-1 features the possible pathways and exit points in the new model of Swiss medical education. The faculties can choose their majors and specialised Master degrees. They therefore have the possibility to offer education in the area of their competences. This allows a faculty of medicine to emphasise its strengths and develop a different profile to medical faculties at other universities, which in turn makes it more attractive for students to choose their place of study according to their interests. Students can also choose their majors in other faculties if there are collaboration agreements, or work in research laboratories during their studies (Bader 2005). This model allows for individualised study paths and enhances intra- and interfaculty mobility.

Common system of denominations

As part of the reform process, a common system of denominations for medical degrees was also agreed. Depending on their pathways, students can achieve the following degree titles (SMIFK 2006):

- BA of Medicine (180 ECTS credits)
- BA of Dental Medicine (180 ECTS credits)
- MA of Medicine (180 ECTS credits)
- MA of Dental Medicine (120 ECTS credits)
- MA of Science in Medicine (120 ECTS credits), plus the denomination of the specialisation.

Majors chosen by the student are listed in the Diploma Supplement.

3.2.3 Implementation of Bologna reforms

Ongoing implementation

The implementation of this model is up to the universities, regarding both the time schedule and the way and extent to which it is introduced. The medical faculty at the university of Basel introduced the new model for students starting with their first academic year in autumn 2006 (see the text box below). The medical faculties in Lausanne and Geneva are introducing the reform in progressive stages, and are still working on the implementation of the two-cycle model. The universities in Bern and Zurich began to implement the Bologna model with the coming into force of the new federal law on medical professions. Both universities started with the Bachelor in 2007/08 and will start with the Master in 2009 and 2010 respectively.

Institutional example: University of Basel

Students beginning their medical education at the University of Basel in 2006 were the first ones to follow the new system. The mandatory subjects include two parts: subjects organised in thematic blocks (structured following the apparatus of the human body) and a second group aiming at the development of basic competencies such as social,

communicative and ethical competencies, manual abilities, in scientific work and the humanities. In addition, the programme offers four majors: clinical medicine, dental medicine, biomedical science and public health.

The various learning and teaching methods as well as examination forms that are applied correspond to the competencies that students are required to master, such as lectures, group-work on clinical tasks, physician patient teaching, private tutorials with physicians, skills lab, and problem oriented tutorials. Three types of exams are applied: *Multiple Choice Question Tests*, *Objective Structured Clinical Examination* examining on skills and competencies (communication and problem solving), and the *Portfolio* to test the level of reflection in the area of social and ethical competence (Medizinische Fakultät Universität Basel 2006).

Project learning (in *problem-oriented tutorials*) is an important component. Students elaborate a topic in groups of 8-10 students, which provides them an insight in areas of medical practice, an early contact with patients and fosters the ability to work in teams. Project learning is organised according to the four majors of the programme, respectively at a hospital or in a medical practice, the centre for dental medicine, at a research department or in pharmaceutical industry, and for public health (Kaiser 2006).

During the Bachelor degree, students can switch between the majors in clinical medicine, biomedical sciences and public health. The University of Basel plans to offer a three-year Master degree in clinical medicine (including 10 months of clinical electives) giving access to the *Staatsexamen* and two-year Master degrees in the areas of the other three majors.

3.3 Responses to and perspectives of the Swiss model

3.3.1 Responses

Swiss Science and Technology Council

The Swiss Science and Technology Council (SWTR) has praised the implementation and flexibility of the Bologna model in medical education. It sees possibilities for even more collaboration among medical faculties and with other faculties of universities, universities of applied sciences, and federal institutes of technology. The SWTR has proposed the opening up of medical education to other health professions such as nursing or more science and technology-oriented fields (SWTR 2006: 23). This perception, however, is not (yet) shared by many actors in the field. Critical voices are to be heard as well.

Students

An argument against the new system is based on the fact that there is already a lack of physicians in Switzerland, a situation which might be worsened by the introduction of official exit points below that level, or pathways which do not lead to work as a physician. In response to this concern, medical faculties have increased the number of study places at the same time as introducing the Bachelor-Master structure. It is expected that 95% of all students will continue up to the Master degree, and that only around 10% of the students will choose a Master not leading to practical work as a physician. In the old system, there was also a certain drop-out rate so that the new system should not lead to significantly lower numbers of graduating physicians.

Flexible learning paths

With the introduction of majors, students have the possibility to specialize in their areas of interest, even outside of the medical faculty. The introduction of a Bachelor degree allows combining basic medical training with training in other disciplines. Those students who decide during their studies that they do not wish to become a physician now have the possibility to leave their studies with a Bachelor degree or to choose a Master degree in their own area of interest.

It is too early to assess the employability of Bachelor graduates and to know how employers beyond the immediate medical fields will respond. However, the alumni association of the University of Bern and the SWTR both support the view that students can develop their competences after the Bachelor degree outside pure medical training, which may make them employable in various medical-related jobs. In their view the Bachelor degree can be seen as a basis for professional activity with ongoing training, or as a degree that can for example be combined with a second Bachelor degree, allowing for combinations such as medical journalism, health management etc. It is also judged positively in that it allows students to leave their studies with a valid degree and possibly return later in their lives to continue a career as a physician.

New forms of collaboration

With the introduction of the two-cycle structure, students can do their Master degree at another university, which enhances their mobility. The Swiss medical faculties have agreed to mutually recognise their Bachelor degrees without restrictions, a practice which in most other European countries is rather the exception. This option becomes even more interesting when the different faculties develop different profiles by strengthening their areas of expertise and offer Master programmes according to these areas.

New system more efficient

Another argument against the new system is that it will entail extra costs. Although medical education in Switzerland does not cost less than before, resources are generally considered to be used more efficiently: Programme supply has become more focused, student tracks are more diverse. At the same time, collaboration within medical schools has been enhanced. At the medical faculty of the University of

Basel for example, classes from dental medicine, which until now had been separate but with the same content, are now taught together with students from other majors. All these changes require a better knowledge and management of human and financial resources. The introduction of the Bachelor degree might be seen as inefficient, since students leaving university after their Bachelor have benefited from a very expensive education, but will not be allowed to work as physicians. The interviewed experts, however, did not raise concerns regarding the expensiveness of this system. On the contrary, it was stated that there has always been a drop-out rate in medical education, and under the new model students can leave their studies having already graduated after 3 or 5 years, with the Bachelor and Master degrees leading to professions that do not require the Federal Examination, and therefore do not require the clinical electives.

3.3.2 Future perspectives

Revolutionary vision

The new model of medical education in Switzerland allows the adoption of medical education to the requirements of the Bologna reform. Some actors[4] propose a more revolutionary, even more open system, which embeds medical education in a general framework for education in health-related areas. In this vision, medical faculties would become a platform open to all those willing to acquire medical knowledge and skills in any way. This would certainly require an extended collaboration with the universities of applied sciences. It could become a driving force towards the creation of new health professions, allowing for goal-oriented education that responds to the needs of society, of industry and public administration and of the health system in general. The development of specific study courses at the different faculties would enhance mobility of students and render medical education in Switzerland highly attractive internationally (Bader 2005). So far however, no concrete steps in this direction have been envisaged by medical faculties.

[4] See for example the president of the SMIFK (Bader 2005) and the Swiss Council on Science and Technology (SWTR 2006).

4. Conclusions

More employment possibilities

The Swiss case study shows how the Bologna-type two-cycle degree structure can be implemented in medical education in a sensible and positive way. The new Swiss model of medical education allows students to choose among different majors and Master programmes and allows the medical faculties to diversify tracks such as research and medical practice, and to raise the profile of different medical schools in research and teaching. With the new system, medical education no longer results in one single type of graduate, but widens the range of employment possibilities. Students can tailor their education according to their interests and needs. Furthermore, medical education no longer automatically leads to the profession of a medical practitioner, but opens up ways to other professions in the broader area of health or to specialisation in research.

Compliant with Bologna

It is clear that Bachelor degree holders are not allowed to work as physicians, but many other possibilities have already been identified. The introduction of this degree is also seen as a chance for those who otherwise would leave their studies without a valid degree, and thus as a way to decrease the drop-out rate in medical education. An important conclusion, underlined by the actors in the field, is that it is feasible to implement the requirements of the Bologna process in medical education in a satisfactory manner. Contrary to the general view that these requirements are inapplicable to medical education or difficult to achieve in a rather inflexible sector, the medical faculties in Switzerland have been able to propose and start the implementation of a degree structure and curriculum model that is in line with the principles underlying the Bologna process. At the same time, the model conforms to the European directives on medical education and to Swiss federal legislation. This makes the Swiss developments exemplary for medical education throughout Europe.

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