

# BOLOGNA AND MEDICAL DEGREES – THE IMPORTANCE OF LEARNING OUTCOMES



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## Introduction

In the UK, over the last 15 years the General Medical Council has driven medical schools in the direction of fully integrated 5-year undergraduate curricula, with strong early exposure to clinical learning and experience, and basic science revisited later in the curriculum. This is viewed as a “quality standard” for accreditation.

The GMC, and other regulatory bodies in the United Kingdom and elsewhere, have rejected the application of the “Ba/Ma” model to medical degrees. A major objection is that it would inevitably lead to “dis-integration” of medical curricula, and a return to separate pre-clinical and clinical periods of study.

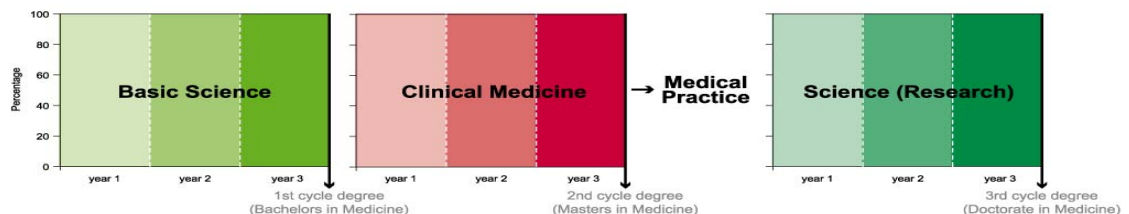
## The importance of learning outcomes

An answer to these concerns lies in outcomes-based education. Without specified learning outcomes for the Bachelor and Masters qualifications, medical schools could indeed create dis-integrated, “two-block” medical curricula. This model is illustrated in Figure 1 (a).

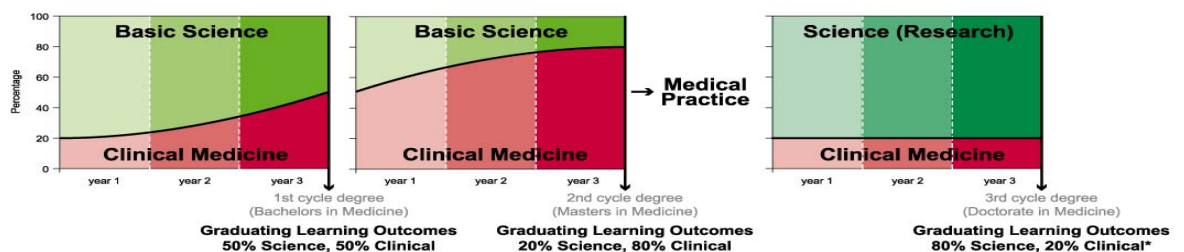
However, if appropriate learning outcomes for the first and second cycles are agreed, then the opposite is true. For example, an agreed learning outcome for the first cycle degree might be “ability to measure blood pressure and interpret the findings”. This would require the medical school to include teaching and assessment on blood pressure in the first three years of study. Similarly, a learning outcome for the second cycle might be “ability to describe the anatomy of the pelvis”. This approach could also be applied to the Bologna 3<sup>rd</sup> cycle to emphasise the specifically medical nature of the degree. These models are illustrated in Figure 1 (b).

**Fig 1: The Bologna Process and Integrated Medical Education**

a) A possible model of the Bologna Process applied to Medical Education in the absence of agreed Learning Outcomes/Competences for each cycle, leading to loss of integration.



b) A possible model of the Bologna Process applied to Medical Education with agreed Learning Outcomes/Competences for each cycle, leading to enhanced integration.



\*This would recognise the specific nature of a Doctorate in Medicine, as opposed to a PhD in another subject.

## Conclusion

There are many difficulties with the implementation of a Bologna 3-cycle model in medicine. However, concerns about loss of integrated teaching and learning can be overcome by strategic use of learning outcomes for each cycle. Such an approach may even be beneficial in relation to curriculum development.

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## References

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# G2010

## A competence based medical BaMa curriculum



umcg

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### Introduction

In spite of the fact that delegates of many countries signed a Joint Declaration on the European Higher Education Area (Bologna 1999) there is still a considerable diversification regarding the structure of medical curricula. This may be because the medical curriculum cannot be compared in all aspects with other university studies but unfamiliarity and indistinctness may play a considerable hampering role.

### Concept

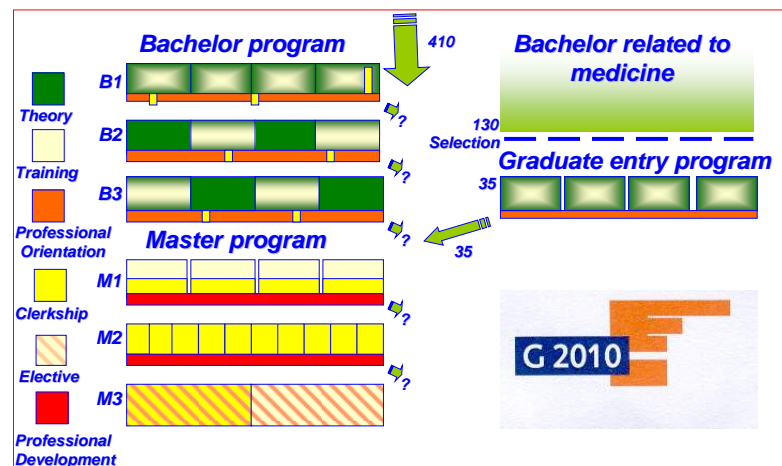
In 2003 we started a new problem based medical curriculum with a 3-year Bachelor's and a 3-year Master's program, aimed at year classes of 440 students.

A one year graduate entry program was demanded to allow students with degrees in areas related to medicine to enter the Master

### Result

The Groningen Medical Curriculum G2010 is a prototype of an integrated curriculum following the Bologna two-cycle system. Featuring are competencies adapted from CanMEDs for basic medical education. The graduate entry program has a yield of nearly 100%. By now it is premature to make a statement about students leaving before getting their medical degree.

### The G2010 Curriculum



B1.1&B1.4 Medical processes  
B1.2&B1.3 Cell biology and Physiology

B2.1&B2.2 Brain and Senses  
B2.3&B2.4 Internal Medicine  
B3.1&B3.2 Surgery and Acute Medicine  
B3.3&B3.4 Life Cycle

M1-4 Dual training: skills lab&clerkship

M2 10-12 4 week clerkships

M3 Elective clinical clerkship  
Scientific clerkship

### 7 central competencies

- Communication
- Clinical Problem Solving
- Applying Knowledge & Science
- Clinical Skills
- Patient management
- Using Social & Community context
- Reflection

### Conclusion

Building a 2 cycle BaMa curriculum is really possible. If learning objectives are well-defined in Ba- and Ma- blueprints, 'only' language related obstacles remain in exchange programs for medical students. Students with degrees in other areas will need a one year program before getting in.

# 2-cycle BaMa is a challenge to be taken up

# A TRAINING AND EDUCATION CONTINUUM FOR DENTISTRY

## – A BOLOGNA ORIENTED CONCEPT –



Rotgans J\*, Lampert F\*\*

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\*Health Professions Educationalist; \*\*) Chair Working Group 'Dental Education'

### The Bologna Declaration 1999 - Recommendations

- promotion of European dimensions in higher education
- harmonization in the duration and framework of titles
  - adoption of a system of easily readable and comparable degrees
- adoption of a system based on three cycles:
  - undergraduate (bachelor)
  - postgraduate (master and doctorate)
- adoption of an uniform credit system
  - generalization of the European Credit Transfer System
- promotion of cooperation in quality assurance
  - increase in quality of education (assessments, accreditation)
- promotion of mobility of students and teachers
- life-long learning and training using new technologies

### Considerations – general

- ❖ Political 'inspirations'
  - shortage of dentists (and doctors) soon?
  - no need for dentists (and doctors) to become master (~15% only)?
  - drop-out/burn-out rates too high
  - education and training (too) expensive
- ❖ Knowledge growth in medicine vs. its deterioration: half-value-time ~ 3-5 years but what half stays actual? → **don't train undergraduate students (too long) on an obsolete knowledge base!**
- ❖ Academic education and training = adult learning, i.e. from behaviorism to constructivism = allowing students to learn → development of self-responsible personalities, i.e. life-long learners → **3 cycles?**

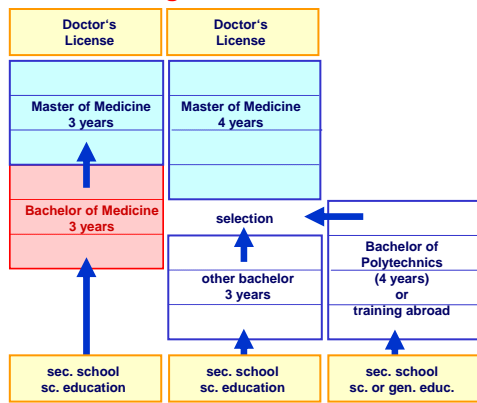
### Considerations – special\*

- ❖ Entrance age of students high in regard to European fellow-competitors
- ❖ NHS license only to acquire after 2 years introduction in contracted NHS-practises but no need for that for European fellow-competitors
- ❖ Annual bi-semester structure à 14 weeks only
- ❖ The total restorative training (Cons & Prosth) = 11 weeks → Academic Counsel's Recommendation a.o. additional training in contracted academic Satellite Dental Offices
- ❖ Trend for master qualifications as specialisation (post-graduate training)

\* Aachen view

### THE DUTCH IMPULSE [TMO]

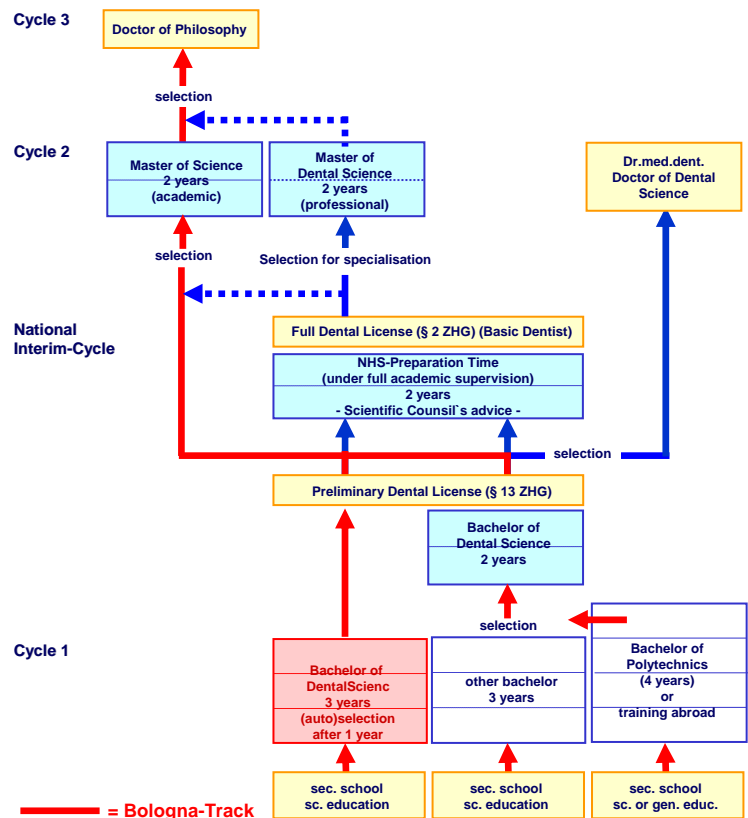
Medical Training and Education Continuum



### Aachen Considerations

- ❖ Make students more EU-competible!
- ❖ A tri-semester re-structure of the existing curriculum à 14 weeks makes
  - the curriculum full year academic
  - 'bachelor-proof'
- ❖ The 3-year bachelor - as "preliminary licensed dentist" according to § 13 Dental Licensed Act - is employable
- ❖ 2 years of combined present and distant learning - in an interim-cycle - towards full licensure (§ 2 DLA) in satellites include full NHS licensure
- ❖ This 5-year curriculum meets EU-directives
- ❖ Additional training and education is up to individual's life-planning and responsibility

### AACHEN DENTAL TRAINING AND EDUCATION CONTINUUM DESIGN



### The Aachen Dental Training and Education Continuum Design

- meets the Bologna Recommendations, and
- is a model for a Medical Training and Education Continuum

# Modular Structure at UCD School of Medicine & Medical Science Dublin, Ireland

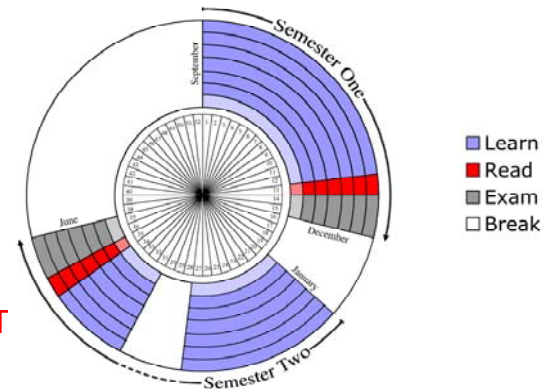


Dr Geoffrey Chadwick, Dr Jason Last

UCD School of Medicine and Medical Science Teaching and Learning Team

## Medicine Programme Outline

- 1) Six year undergraduate curriculum:
  - School leavers and mature entrants
  - Exemption from first year on the basis of strength in laboratory sciences
  - Soon to require HPAT (National Aptitude Test)
- 2) GEM Programme
  - Four year graduate entry to medicine
  - Honours (2:1) level 8 primary degree and GAMSAT



## Modular and Semester Based Programme

- A typical undergraduate Stage in UCD is two semesters - one year (see above). This is represented in the following figure; six modules, each worth 5 credits, run in parallel within each of two semester. **Student have elective choices of 35 credits.**

## Six Year Undergraduate Programme

- Stages One to Four have six modules per semester and 5 ECTS type credits per module (**30 credits per semester and 60 credits per stage**).
- **Stage One: Scientific basis for medicine**
- **Stage Two:** Introduction to molecules, cells, tissues, medical practice, population health, and systems based modules covering healthy organ systems
- **Stage Three:** Completion of healthy organ systems, introduction to illness and disease, commencement of systems based study of disease and its treatment and disability.
- **Stage Four:** Completion of systems based microbiology, pathology and applied pharmacology and commencement of in depth clinical studies in the second semester.
- **Stages Five and Six:** are based in 22 different training sites and do not neatly conform to the typical academic year. Students rotate through 10 credits modules usually, with patient centred approaches to learning alongside consultant teams and community based practitioners. Legal medicine, ethics and population health are considered in smaller modules. The final professional completion semester contains elective experience, a subinternship, intensive revision and other activities designed to give students confidence and competence in their professional capabilities.

## GEM Programme

- **Stage One and Two:** 150 credits covering topics equivalent to Stages 2,3,4 above.
- **Stages Three and Four:** 120 credits and shared with undergraduate curriculum.

**The UCD Medical Curriculum is fully modular and semesterised with an ECTS compliant credit system and contains great student choice in a wide variety of medical and nonmedical disciplines**



# European Medical Association: It's view on Medical Education in Europe



Created in 1990 by doctors from the 12 member states, the European Medical Association was established as an “international foundation pursuing a scientific aim”. It is a unique, independent non-profit organisation.

## EMA AND EDUCATION

The European area is not only that of the Euro, the banks, the economy. It is also that of Education and knowledge.

A European Area of Higher Education can be justified by the need to adapt educational programmes to new socio-economic demographic and employment situations resulting from building of a united Europe.

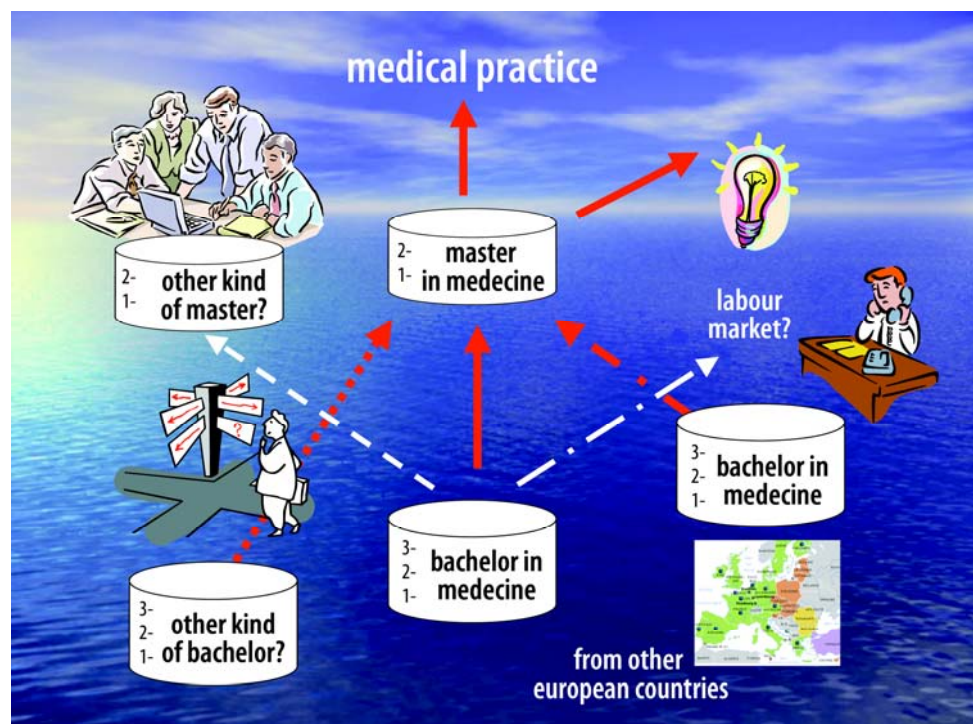
## STRENGTHS

- Bring together individuals and organisations working in the European Health Community.
- Provide a meeting point between East and West.
- Contribute to the harmonization of the European Medical Education and practice.

## EMA AIMS AT

- Improving Education by a better implementation of the medical studies into the Bologna process, in order to establish the European Area of Higher Education (EHEA),
- Encouraging Information
- Supporting Collaboration and Students Mobility.

## INNOVATION IN STUDENTS' LEARNING



**CONCLUSION: “Better-informed doctors make better-treated patients.”**

# Germany's Medicine on a legal way to Bologna: stony but manageable



Hartmut Riehn<sup>1,2</sup>, Manfred Gross<sup>2</sup>, Jörg Pelz<sup>2</sup>

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## Introduction

Medical education is strongly regulated by different laws. The Treaty of Rome declares that member states are responsible for the specific conditions for taking up a profession within their national territory. Directive 2005/36/EC of the European Parliament regulates the (minimal) standards of basic medical education for both duration and content. The German Ministry of Health is responsible for the Medical Licensure Act (ÄApprO) which regulates and specifies broadly content of teaching and assessment of student's qualifications necessary for receiving the license to practice medicine by the state. The basic framework of qualification of the Bologna-Process awarding a Bachelor's or a Master's degree is not regulated in any legal document relevant for medical education.

## Concept

There is no imperative to establish the Bologna-Process in the medical curriculum for Germany's faculties.

-Medical faculties can make use of the 'model-clause' (§ 41 ÄApprO) which provides them with a relative academic freedom, especially they get rid of the M1 exam.

-Medical faculties organise the curriculum in modules; teaching is interdisciplinary covering basic sciences and clinical sciences right from the beginning.

-To become licensed as a physician medical students have to pass the state exam after 6 years of studies – faculties embed at the end of 6<sup>th</sup> and 10<sup>th</sup> semester the possibility to acquire facultative a university degree, Bachelor and/or Master respectively.

## Strengths and Weaknesses

Voluntary participation of students in the Bachelor or Master projects may lead to poor attendance, but students who find out that medicine is foreign to their nature can receive a degree, which opens perspectives for further studies or direct employment. This prevents superfluous educational activity and guarantees meaningful output.

Students who enter the workforce at that point may not be properly prepared.

Teaching without involvement of a significant amount of clinical issues right from the beginning leads to problems with the number of students which have to be enrolled.

It may be easier to move from one country to another for further study.

## One possible way to Bologna for Germany's medical faculties

### The Legal Framework

Treaty of Rome

Member states responsible for regulation of specific conditions for taking up a profession within national territory

Directive 2005/36/EC

Medical education duration: 6 years, 5500 hours and content: knowledge of the sciences on which medicine is based understanding structure, function and behaviour of healthy and sick persons; adequate knowledge of clinical disciplines and practices, suitable clinical experience

Medical Licensure Act (ÄApprO)

Content – Assessment – Evaluation – State Examination - License

No regulation of the implementation of the Bologna-Process in Medical Education

Auxiliary construction:

Model-Curriculum according to § 41 ÄApprO  
Relative freedom to implement a Bologna oriented curriculum

Facultative university degrees Bachelor and Master

6<sup>th</sup> semester provide an opportunity to receive **Bachelor's degree**

10<sup>th</sup> semester provide an opportunity to receive **Master's degree**

12<sup>th</sup> semester state exam – only possibility to be licensed as a **physician**

## Conclusions

Given the existing laws in Germany there is a way to implement the Bologna-Process in medical education. The current proposal is an auxiliary construction and should not become a permanent solution. If politicians mean business with the implementation of the Bologna-Process in medical education they have to start a new legislative process.

**It is possible to implement the Bologna-Process in the medical curriculum without changing the currently existing laws**

# New diploma programme “Human Medicine” at Medical University of Graz

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Medical University of Graz

## Motivation and legal frame

Legal requirement to transform traditional “Rigorosstudium Medizin” into a 6-year diploma programme (Bachelor/Master-Architecture legally impossible!).

## Basic structure

integrated module-/track-based  
syllabus instead of former  
discipline-oriented approach

### Years 1 to 5

30 theme-oriented 5-week-modules  
(25 obligatory modules, 5 elective)  
vertical „tracks“ continuously  
enhancing theoretical, practical and  
„soft“ skills

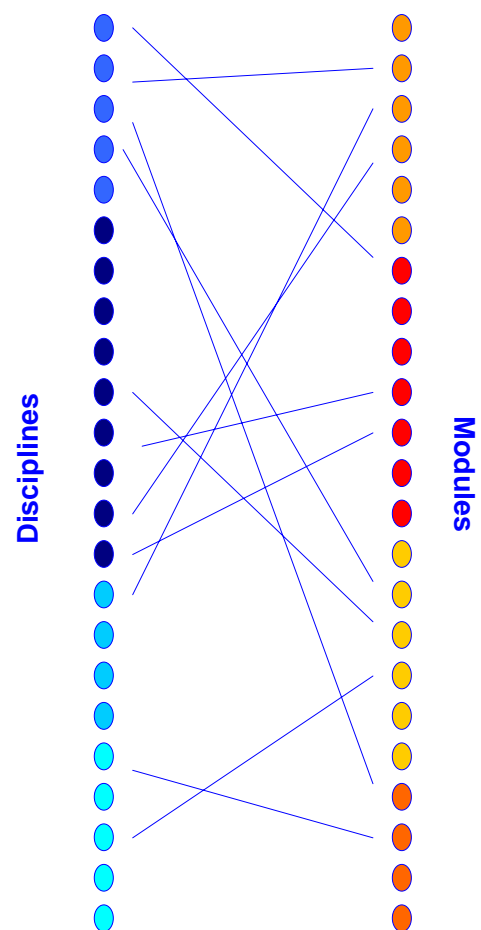
### Year 6 („practical year“)

20 weeks „clinical electives“

Diploma thesis

Full adherence to ECTS regulations!

## VMC Graz – a story of success



## Major problems and their solutions

### „Reduction“ of traditional disciplines

- Intensive and open communication
- Permanent evaluation and immediate action
- Public visibility of every success

### Integration of „autonomous“ disciplines

- Coordination of each module by one „host“ discipline („Gastgeberfach“)
- Strong support of institutes/clinics in organisational issues by university’s central administrative forces
- Strong commitment of university’s leading bodies
- Strong cooperation with students’ union
- Development of tailored virtual platform (Virtual Medical Campus „VMC“ Graz)

## Goals

- Digital representation of new syllabus
- Support for students, teachers, administrative staff
- Platform for blended learning

## Achievements

- > 15000 reusable learning objects
- Successful virtual semester
- Stable function even with >15000 downloads per day
- Platform for national and international cooperations

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# Successful accreditation by ACQUIN!



# Harmonization of two-cycle education of nurses in Croatia – opportunity for mobility development



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Head of Department of Nursing  
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## Yesterday

Faculty of Medicine Osijek has been conducting professional study in nursing since academic year 2003/2004. Since 2005, the Faculty has been actively participating in the reform of study programmes, in co-operation with the other three centres for nursing education in Croatia (Zagreb, Split and Rijeka).

At that point the decision was made to organize nursing education in at least two cycles, a three-year course (180 ECTS) at bachelor's level and a two-year course (120 ECTS) at master's level. This decision was accepted by the four centres that were conducting higher education of nurses in Croatia at that moment, as well as by two newly established centres of education in Zadar and Karlovac.

## Today

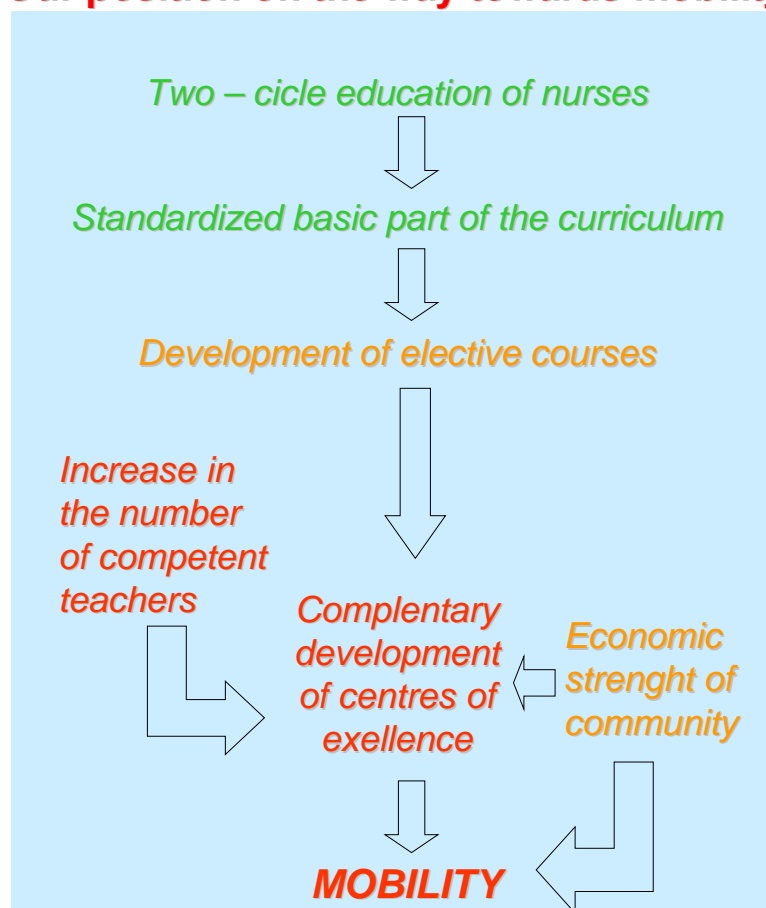
In the past three academic years we have managed to develop the study programme according to the guidelines of Directive 77/453/EEC-2 (4600 hours,  $\geq 1/3$  theory,  $\geq 1/2$  practical training) and to standardize the basic part of the curriculum at bachelor's level at all centres of education. At the same time, the developed programmes have been different and competitive due to elective courses creation (about 15% of the curriculum content).

## Tomorrow

A major obstacle to more rapid development of higher education of nurses in Croatia is serious lack of competent teachers in the area of nursing care.

Therefore, in the next five years we are planning to educate additional number of teachers, which will contribute to development of the elective part of the curriculum and in this way develop centres of excellence in particular areas. It is our intention to develop complementary education of nurses at master's level in various healthcare areas at least at two more centres of education of nurses in the next five years.

## Our position on the way towards mobility



## Conclusion

Increase of quality in specific areas of higher education of nurses would certainly result in greater mobility of both students and teachers, strengthening of modular teaching approach and logical development of education of nurses at master's level in particular areas.



# Bologna Process in Medical Education in Croatia



Nada Cikes<sup>1</sup>, Miljenko Kapovic<sup>2</sup>, Stipan Jankovic<sup>3</sup>,  
Pavo Filakovic<sup>4</sup>

Deans' Conference, Schools of Medicine,  
Universities of Zagreb<sup>1</sup>, Rijeka<sup>2</sup>, Split<sup>3</sup> and Osijek<sup>4</sup>, Croatia

## Introduction

Bologna declaration was introduced in Croatian medical education in 2000, when the ECTS was applied at the University of Zagreb School of Medicine. From the year 2004 all four medical schools (Zagreb, Rijeka, Split and Osijek) are working together on the application of the Bologna process in the new curriculum as well as on the development of medical education. The new core curriculum was developed, electives (including e-courses) mutually offered to all schools promoting students' and teachers' mobility. Two international conferences on harmonisation of doctoral studies were organised at the Zagreb School of Medicine, concluding with the "Zagreb Declaration" and establishment of the international organisation for PhD education in medicine ORPHEUS.

## Goal

to implement Bologna process and WFME European specifications for global standards in medical education together with innovations in medical education in order to raise standards of medical education in Croatia and incorporate it in European Higher Education Area and European Research Area.

## Strengths

- Definition of students' workload for ECTS: role in curriculum planning
- Role of Bologna process in development of national qualification framework
- Initiative for international harmonisation of doctoral study in; establishment of ORPHEUS (Organisation for PhD Education in Biomedicine and Health Sciences in European System) in Zagreb
- Teachers' education

## Weakness

Lack of awareness and readiness for change of all interested parties.

## Application of Bologna process and development of medical education in Croatian medical schools

- Introduction of ECTS
- Development of original method of student workload evaluation to define credits
- Promotion of mobility within Croatian universities
- Promotion of quality assurance
- Promotion of European dimension in medical higher education
- Development of PhD study network in biomedicine and health sciences in Croatian universities
- Continuous medical education - Life long learning
- Progress in defining competences and learning outcomes for Croatian medical doctors
- Progress in diploma supplement
- Role of medical education in development of national framework of qualification
- Emphasis on position of students - partners in higher education institution
- Two cycle system was not accepted in Croatian medical study programmes

## Conclusions

Bologna process is implemented in Croatian medical education at national level in concert with other developments in medical education in order to promote educational and health systems in Croatia.

**Bologna process contributes to many aspects of medical education development; to define final learning outcomes is even more important than deciding on two cycle system.**

**Laura Tanca and Madalin Barac**

Project National coordinators 2005/2006 and 2006/2007  
Standing Committee on Medical Education – IFMSA Romania  
University of Medicine and Pharmacy “Iuliu Hatieganu”, Cluj-Napoca

## Brief History



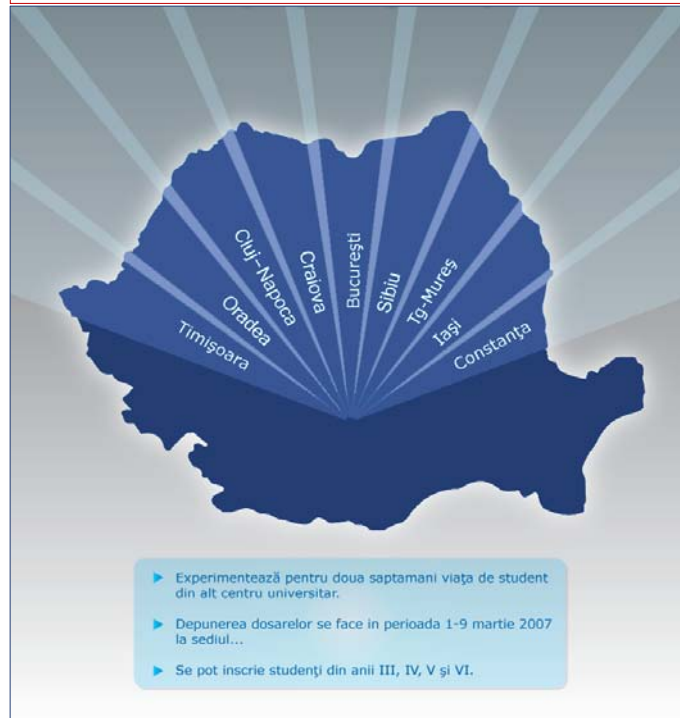
TransMed is a national exchange program, conceived by and for the medical students, representing an official IFMSA-Romania project. It was created by a local committee in 2000 aiming to offer an opportunity for medical students to find information about the ways of studying and teaching medicine in other universities in Romania. It now involves 9 medical universities from Romania, exchanging more than 15 students from each university, in the same time, twice a year.



## Aim

☐ To improve the academic quality, the learning and professional development of medical students by living and sharing the experience of the national exchange program.

Get to know your colleagues throughout the country!



## Strengths

- ✓ Explore:
  - new methods of learning
  - new cities / universities
  - new culture and social environments
- ✓ Professional development
- ✓ Unity of medical students community



## Weaknesses

- ✓ Exchange period:
  - only two weeks
- ✓ Lack of compatibility:
  - in curricula
  - in university programmes
- ✓ Number of students:
  - not more than 20 from each centre



## Further development

☐ Mobility is desirable on all levels of medical studies, allowing access to a lot of new opportunities, therefore we will soon upgrade the program to a transnational level by establishing foreign partnerships.

# The Faculty of Medicine Comenius University Bratislava, Slovak Republic



Mgr. Ľubica Lutherová, Erasmus Office & International Relations

## COMENIUS UNIVERSITY – HOLDER OF EXTENDED UNIVERSITY CHARTER

Since the academic year 2001/2002 the credit system has been introduced at the Faculty of Medicine - that is compatible with the European Credit Transfer System (ECTS), the diploma and the title is valid in all EU countries.

First to third year's courses provide theoretical and pre-clinical lectures, labs and practical classes, the remainder from the fourth to sixth years include diverse clinical experiences.

High quality medical education is central to our mission.

Currently the Comenius University Medical Faculty offers two main undergraduate study programmes:

1. General Medicine
2. Dentistry

both in 6 year day-time doctoral study in Slovak or in English languages.

No external undergraduate doctoral programmes are offered.

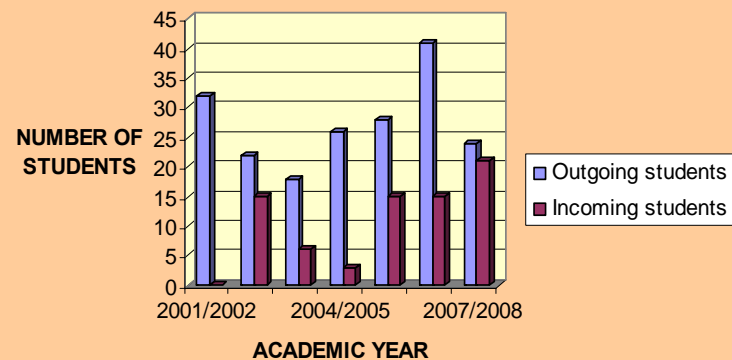
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## Education in Europe



### ERASMUS MOBILITY



### Bologna Process – implementation of two or three cycle system:

Representatives of all three Faculties of Medicine in Slovakia (Bratislava, Martin, Kosice) have agreed to continue teaching General Medicine and Dentistry in 6-year state examination programs and not to implement two or three cycle system in their medical curricula.

**Erasmus – inspiration for Bologna process**

# Bologna Process needs Academic Career Consulting in Medical Education



Ruddy Verbinnen<sup>o</sup> ", Bart Rombaut\* "

<sup>o</sup> Academic Career Consultant, \* Vice Dean of Education, " Faculty of Medicine and Pharmacy - Vrije Universiteit Brussel

Vrije  
Universiteit  
Brussel

## Introduction

At the Faculty of Medicine and Pharmacy of the Vrije Universiteit Brussel (VUB) the advice of 1 FTE Academic Career Consultant is open to all teachers and (potential) students, national and international. As the job title says, the 'ACC' deals with any questions or challenges in connection with the educational path and curriculum.

- **Goal:** to reveal the introduction of 'educational path counseling' (EPC) in all Flemish universities and its use for all students in Europe.
- **Background:** the impact on the Higher Education (incl. Medical Curriculum) of the Bologna Declaration and Process is big. Information is needed.

## To provide clear information for medical students :

- with regards to the curriculum and professional possibilities
  - a tailor-made educational path (APL, APEL,... ) or individualized study program
  - exemptions or retakes
  - on mobility and flexibility
  - recognition of qualifications (ECTS and ECVET)
  - choice among several Masters
  - 30 ECTS standard in English
  - ...
  - on the impact of the Bologna Declaration and Process

## Conclusions

The 'ACCs' are key persons for teachers and students regarding to the information on Bologna. They facilitate the recognition of study periods in Medical Faculties undertaken by mobile European students.

We would like to plead for a **European network** of these 'ACCs'.  
All interested persons are welcome to take contact.



# Specificity of accreditation of medical schools



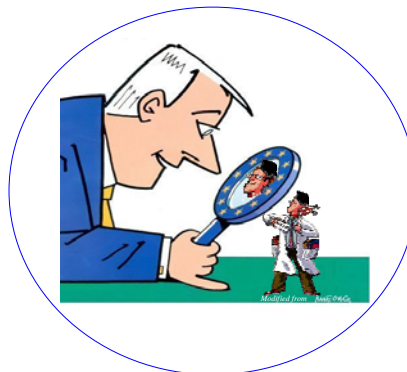
Professor Jadwiga Mirecka  
Department of Medical Education, Jagiellonian University Medical College,  
Kraków, Poland  
former Vice –President of the Accreditation Commission for Polish Medical  
Universities

**Introduction:** Whereas in the USA and Canada accreditation of medical schools has been implemented approximately 100 years ago in Europe an introduction of accreditation is related to the Bologna Process and thus of much shorter duration. Besides, the accreditation systems established in Europe are designed in principle for all institutions of Higher Education (HE), and with few exceptions are not geared specifically towards medical education.

**Concept:** Based on the experience of the Accreditation Commission for Polish Medical Universities medical schools accreditation combines at the same time an evaluation of aspects typical for all HE institutions with those which are specific for medical schools therefore making it essentially 2 in 1 process).

## Aspects typical for all HE institutions

1. Accreditation procedure (self-evaluation, site visit, report of the visiting team, decision regarding accreditation)
2. Specification of institutional mission and its reflection in the curriculum
3. Organization of education
4. Methods of assessment
5. Staff: qualifications and development
6. Internal systems for quality assurance
7. Facilities (lecture halls, library, computer rooms, laboratories)
8. The role of students and support for extracurricular activities



## Aspects specific for medical schools:

1. Integration of basic and clinical sciences
2. Information overload (core curriculum, evidence based medicine)
3. Mapping of clinical reasoning, problem solving and team, work in the curriculum
4. Premises for clinical training (hospital, out-patients clinics, emergency and chronic care units)
5. Range of diseases and specialist procedures for demonstration
6. Direct access of students to patients (numerical ratio, personal responsibility of students)
7. Practical training of clinical skills (list of skills, training laboratories, specific assessment of skills)
8. Teaching role of clinical staff (qualifications, conflict of duties between medical service and teaching)

## In addition accreditation of medical schools:

- is focused more on outcomes (“safe doctor”) than on educational process itself
- takes into account specific standards developed for medical education: (WFME Global Standards for Medical Education) and European Specification of the Global Standards
- should follow the WHO/WFME Guidelines for Accreditation of Basic Medical Education

## References:

- Basic Medical Education. WFME Global Standards for Quality Improvement <http://www.wfme.org>
- WHO/WFME Guidelines for Accreditation of Basic Medical Education. Geneva/Copenhagen 2005

**Take-home message:** Accreditation of medical schools should not rely on „one fits all size” model, but combine a „generic framework” with specific elements and criteria

# “Life Science University Krems”

## Implementing Bologna in the Medical Education

### A Proposal

Univ. Prof. Dr. Heinrich Kern

Founding Commissioner of the Life Science University Krems

#### Background:

In 1999, Austria, like 28 other European countries, signed the Declaration of Bologna with the goal to establish the European Higher Education Area. The introduction of the Bachelor and Master structure is on the way in most fields of university studies, but the Austrian medical universities remain on the one cycle system. The country of Lower Austria wants to establish a new medical university, thus giving the opportunity to discuss new ideas about the medical education in Austria. The LSU Krems is developing a two cycle study lasting a total of five years. The first cycle consists of the Bachelor of Medicine and the second cycle of the Master of Medicine. When both consecutive degrees are completed students will be promoted to Doctor of Medicine (Dr. med. univ.).

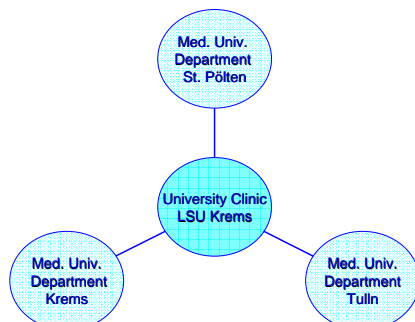
#### Bachelor of Medicine

- Achieved solid knowledge in various fields of basic sciences
- Understands and comprehends anatomy, physiology and pathology of the human body
- Has competence in fundamental medicine
- Received early clinical experience
- Acquired insight in various fields of health care, like e.g. medical statistics, ethics, law, management

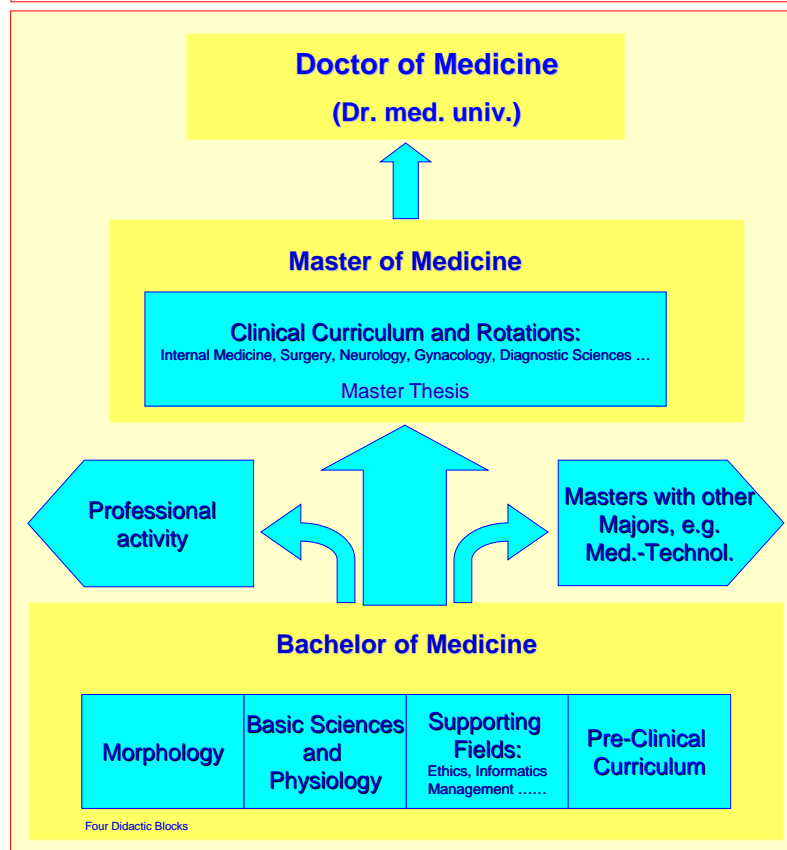
#### Master of Medicine

- Competent to work as a physician
- Competent to work in research
- Competent in administrative duties which require medical expertise
- Prepared for post graduate studies

**Clinical Rotations:** students are confronted to a broad diversity of patients and diseases



#### Private Life Science University Krems



This proposal, developed by experts of Medical Education in Austria, demonstrates an enriched curriculum and a current study path with the ambition to train a highly qualified medical doctor. Students would achieve this goal by working longer and studying more, which would result in an outstanding education.

## LSU Krems – Ba/Ma – 5years

# International Student Exchange Programs Faculty of Medicine & Surgery University of Florence 2 - Mobility Secretariat



**Giulia Iannone, Susan Rosselli**  
Erasmus and International Mobility Office  
Faculty of Medicine & Surgery - University of Florence, Italy

## Introduction

The International Mobility Secretariat of the Medical Faculty, in close liaison with the Faculty Delegate, the Didactic Committee, the Student Services Office and the Central Mobility Offices, processes incoming and Outgoing Student Mobility applications and registers the arrival and departure of students coming to and leaving the Faculty.



## Goals

- To implement new exchanges for medical Students and Teaching Staff from the EU and overseas.
- To make incoming students and staff welcome in our Faculty.
- To offer advice and support, optimizing social and academic integration.

## Exchange Student Services

- *International Mobility Secretariat* for information, application, registration and orientation.
- *University Language Center* for a free course in Italian.
- *University Canteen*: €3 for a 3-course meal.
- *University Libraries and Internet points*: free access for study and consultation.
- *University Sports Center*

## Strengths

- Long-term Experience and Motivation.
- Optimal relations through understanding, encouragement and good will.
- Steady increase in Exchanges.
- Excellent feedback.

## Weaknesses

- Short staffed
- Inadequate financing
- Scarce online facilities

## Conclusions

- ❖ The International Mobility Secretariat is a driving force of our Medical Faculty.
- ❖ Operating with competence, it supports students through the entire procedure of their exchange.

**Over 100 Medical Students & Staff visit our Faculty yearly: would you like to come too?**



# Initiatives of the University of Prishtina's Faculty of Medicine to cope with Bologna



**Fatmir S. Dragidella**

School of Dentistry, Faculty of Medicine, Prishtina

University of Prishtina is founded in 1970. Faculty of Medicine is founded in 1969.

There are five branches of studies:

- **Medicine (1969)**
- **Dentistry (1975)**
- **Pharmacy (1996)**
- **Physiotherapy (2001)**
- **Nursery and midwifery (2003)**

**We want:**

- to be part of higher education area in Europe
- to implement Bologna processes in medical education
- Curricula reform and reconstructing
- Introducing a new teaching and learning formats
- Cooperation

**Weaknesses:**

- Very young population
- Low economic power
- Low and old infrastructure
- Low research capacity

**Curriculum Structure**

- 6 year curriculum for medicine and dentistry
- 5 year curriculum for pharmacy
- Three year (bachelor) curriculum for physiotherapy, nursery and midwifery
- 2,000 active students
- More than 4,000 graduates
- New curricula from academic year 2007/08
- In near future: PhD studies

Implementing the Bologna process into medical education is a way to go forward for a better future

**Together ...**





# International Student Exchange Programs Faculty of Medicine & Surgery University of Florence -1- Teaching

**Maria Grazia Giovannini, Laura Della Corte**

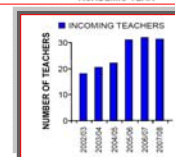
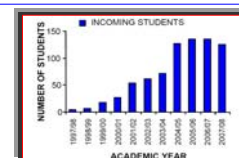
Erasmus and International Mobility Delegates, Faculty of Medicine and Surgery,  
University of Florence, Italy

## Introduction

The Delegate and the Committee for International Mobility of the Faculty of Medicine at Florence University strongly believe in International Student Exchange Programs. We consider them a top investment for future Medical Doctors who today have the opportunity to practise in the different countries of a united Europe.

During the last 12 years we have greatly expanded our Exchange Activities both throughout Europe and overseas. The number of incoming Exchange Students and Teaching Staff visiting our Faculty has steadily increased since the program started in 1996, reaching the present plateau of over 100 Students and 30 Teaching Staff per year for the last 3 years.

Over the last 4 years our International Mobility Activities scored between 1<sup>st</sup> and 3<sup>rd</sup> place among those of all the Italian Medical Faculties in the Italian CENSIS Statistics.



## What do we offer incoming students?

| YEAR - SEMESTER               | STUDY PLAN                                      | CREDITS (ECTS) |
|-------------------------------|---|----------------|
| 4th year<br>I sem.<br>Winter  | MEDICAL SURGICAL SPECIALTIES 1                  | 8.0            |
|                               | Embryology                                      | 2.0            |
|                               | General Surgery & Medicine                      | 2.0            |
|                               | MEDICAL SPECIALTIES                             | 8.5            |
|                               | Infective Disease                               | 2.0            |
| 4th year<br>II sem.<br>Summer | Chemistry & Biochemistry                        | 3.0            |
|                               | PHARMACOLOGY 1                                  | 3.0            |
|                               | MEDICAL SURGICAL SPECIALTIES 2                  | 6.0            |
|                               | Toxicology & Forensic Medicine                  | 2.0            |
|                               | Immunology                                      | 2.0            |
| 5th year<br>I sem.<br>Winter  | PHARMACOLOGY 2                                  | 3.0            |
|                               | MEDICAL SURGICAL SPECIALTIES 3                  | 14.5           |
|                               | Public Health                                   | 1.0            |
|                               | Thrombotic and Hemorrhagic Diseases             | 1.0            |
|                               | PHATHOLOGICAL ANATOMY 1                         | 8.0            |
| 5th year<br>II sem.<br>Summer | ADP (integrative didactic activity)             | 2.0            |
|                               | ADP (professional practical training activity)  | 7.0            |
|                               | PATHOLOGICAL ANATOMY 2                          | 8.0            |
|                               | LOCOMOTOR DISEASES & PLASTIC SURGERY            | 2.5            |
|                               | Locomotor Diseases                              | 1.5            |
| 6th year<br>I sem.<br>Winter  | Reproductive medicine                           | 1.5            |
|                               | Public Surgery                                  | 1.0            |
|                               | IMAGING DIAGNOSTICS                             | 4.0            |
|                               | CLINICAL MEDICINE 1                             | 7.0            |
|                               | Internal Medicine 1                             | 8.0            |
| 6th year<br>II sem.<br>Summer | Internal Medicine 2                             | 7.0            |
|                               | CLINICAL SURGERY 1                              | 3.0            |
|                               | LEGAL & OCCUPATIONAL MEDICINE                   | 4.0            |
|                               | MEDICAL GENETICS 1                              | 1.0            |
|                               | HYGIENE 2                                       | 2.5            |
| 6th year<br>I sem.<br>Winter  | GERIATRICS 1                                    | 1.0            |
|                               | CLINICAL TRAINING (15 weeks)                    | 20.0           |
|                               | ADP (integrative didactic activity)             | 4.0            |
|                               | ADP (professional practical training activity)  | 8.0            |
|                               | Other Activities (Non-conventional Medicine)    | 1.0            |
| 6th year<br>II sem.<br>Summer | CLINICAL MEDICINE 2                             | 14             |
|                               | CLINICAL SURGERY 2                              | 5.5            |
|                               | OBSTETRICS & GYNECOLOGY                         | 3.5            |
|                               | NEUROLOGY                                       | 5.5            |
|                               | PSYCHIATRY                                      | 4.0            |
| 6th year<br>I sem.<br>Winter  | PEDIATRICS 1                                    | 1.5            |
|                               | MEDICAL SURGICAL SPECIALTIES 4                  | 4.5            |
|                               | TEST  | 0.5            |
|                               | Autology  | 0.5            |
|                               | Concomitantly                                   | 0.5            |
| 6th year<br>II sem.<br>Summer | Military surgery                                | 0.5            |
|                               | CONFERENCES                                     | 0.5            |
|                               | PEDIATRICS 2                                    | 7.0            |
|                               | GERIATRICS 2                                    | 4.0            |
|                               | EMERGENCY MEDICINE & URGENCY                    | 5.5            |
| 6th year<br>I sem.<br>Winter  | Medical Emergencies                             | 2.0            |
|                               | Surgical Emergencies                            | 2.0            |
|                               | ADP (integrative didactic activity)             | 2.0            |
|                               | ADP (professional practical training activity)  | 1.0            |
|                               | Other Activities (Medical Surgical Emergencies) | 0.5            |
| 6th year<br>II sem.<br>Summer | ADP (integrative didactic activity)             | 2.0            |
|                               | ADP (professional practical training activity)  | 2.0            |
|                               | ADP (integrative didactic activity)             | 2.0            |
|                               | ADP (professional practical training activity)  | 2.0            |
|                               | ADP (integrative didactic activity)             | 2.0            |

❖ The core-curriculum consists of Integrated Courses, Modules and Clinical Rotations.

❖ Incoming students may take courses from 4<sup>th</sup> year onward.

❖ Class attendance is compulsory (minimum attendance permitted: 70%).

❖ Incoming students may attend and take exams for individual Modules.

❖ Italian CFU credits fully correspond to ECTS credits.

❖ In order to attend Clinical Rotations a basic knowledge of Italian is required.

❖ Incoming students may attend one Italian language course free of charge.

## Studying Medicine in Florence

### The Didactic Committee of the Faculty of Medicine

The Faculty of Medicine appoints members of its Teaching Staff to the Didactic Committee for International Mobility responsible for:

- > Acceptance of Incoming students' applications
- > Definition and approval of learning agreements
- > Approval of changes to original learning agreements and of extended study periods.

### Learning Agreement (LA)



The great diversity in the didactic needs of incoming students from so many different European Universities requires flexibility; each LA is "tailor-made", taking into consideration both our core curriculum and each students' specific requirements.

### Teaching and Learning

Most of the teaching still takes place in large lectures halls. Students are also expected to study and prepare for exams autonomously.



Incoming students may also attend clinical rotations (a minimum of 4 weeks per subject). Most lectures and clinical trainings are held in or near Careggi Hospital, the main University Hospital for the City of Florence.



### Assessment



Exam sessions are held in February, June/July and September and are mainly oral. Some courses have written tests during the semester or before the oral exam. A number of dates are available within each exam period and students can book the date of their choice.

Students not satisfied with their exam result may take that exam again, although rules apply as to how often an exam may be taken within the same examination period.

### Not only Medicine, but .....



...art, history and Tuscany too

## Strengths: Multiple European and Overseas Exchange Programs

82 European Partners



Correspondence address: Laura Della Corte, PhD, Associate Professor of Pharmacology, Delegate of the Dean for International Student Exchanges, Medical Faculty, Department of Pharmacology, Florence University, Viale Pieraccini 6, 50139 Florence, Italy.  
phone: +39.055 4271 226; e-mail: [laura.dellacorte@unifi.it](mailto:laura.dellacorte@unifi.it)

## Conclusions

Florence, Renaissance cradle of culture and humanities, still today promotes diversity in the name of University.

# Student Exchanges Today! A top investment for the Medics of Tomorrow!

# Update on the Bologna process in Medical Education at the Faculty of Medicine, University of Nis : New Curriculum and Quality Assurance



Prof. dr Dusica Pavlovic, Vice Dean

Prof. dr Dobrila Stankovic Djordjevic, Vice Dean

Prof. dr Milan Visnjic, Dean

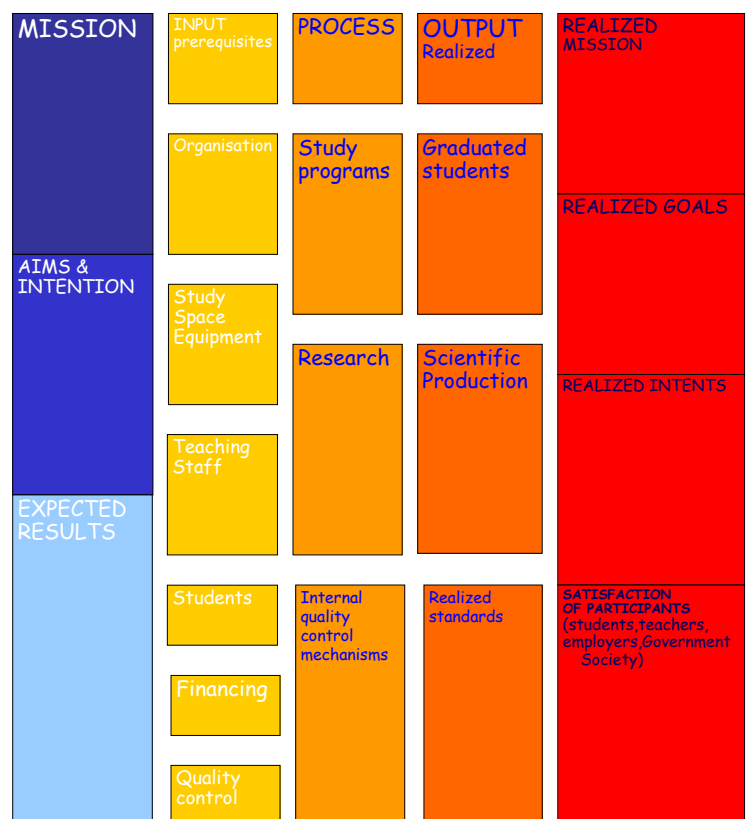
- Learning based on modern education theory, with appropriate IT support
- Interactive communication of teachers & students through various forms of teaching, consultations and learning
- A higher degree of student involvement (as the partners in the education process)
- A higher percentage of practical & individual student work
- Achievement and sustainability of the standards for self-evaluation and quality assessment of institutions of higher learning and study programs
- Establishment of the mechanisms to monitor various aspects of education & research quality

Our aim at the Faculty of Medicine in Nis is the establishment of a modern European system of higher learning in accordance with the Bologna process

**Center for Monitoring, Assurance, Improvement, and Development of Quality of Study Programs, Teaching and Research**

- Commission for the allocation of ECTS credits, ways to accumulate ECTS credits and student-burden assessment
- Commission for study efficacy analysis
- Commission for quality control and assurance
- Commission for monitoring, improvement and control of the quality of research activities

## A QUALITY ASSESSMENT MODEL



Faculty of Medicine, University of Nis  
Blvd. Dr Zorana Djindjica 81, 18000 Nis, Serbia, e-mail: domine@ptt.rs

**TOWARDS THE EUROPEAN STANDARDS IN EDUCATION**

# Implementing Bologna standards in the medicine curriculum at the Royal College of Surgeons in Ireland [RCSI]



**David T. Croke**

Vice-Dean, Faculty of Medicine & Health Sciences, RCSI

## Background

RCSI, a Recognised College of the National University of Ireland (NUI), has offered a five-year medical degree programme for over 25 years. In 2006 RCSI became the first established medical school in the Republic of Ireland to offer a four-year Graduate Entry Programme (GEP) in medicine. The curriculum has evolved considerably in the past decade, moving from a traditional discipline-based model via a partially integrated systems-based model to the current WFME-compliant, integrated, modularised & semesterised curriculum divided into three Cycles – Junior (JC), Intermediate (IC) & Senior (SC). The curriculum is partially compliant with the requirements of the ECTS system.

## Current status & goal

Course content in JC and IC has been elaborated as system- or theme-specific modules, denominated as 5-, 10- or 15-credits. The final two years of the programme, SC1 and SC2, remain discipline-based.

Our goal is to bring the curriculum entirely into compliance with the Bologna requirements:

- [a] through rationalising module structure in JC & IC to eliminate 15-credit modules and to reduce the number of 10-credit modules;
- [b] to redevelop the content of SC as a series of 5- & 10-credit modules

## Work-plan

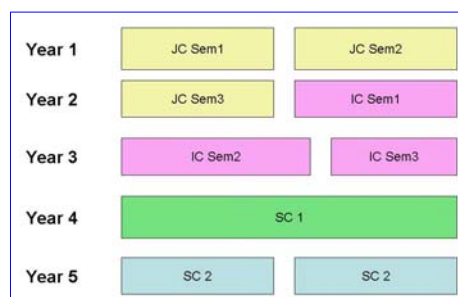
- [1] Combined JC & IC curriculum review in progress for implementation of revised structures from October 2009
- [2] Review of SC1 & SC2 to commence in 2010 (?) for implementation from October 2011 (?)

## Key issues

- [1] lack of direction from regulatory agencies in Ireland (IMC, HEA, HSE)
- [2] lack of coordinated efforts re the Bologna agenda among Irish medical schools
- [3] general lack of awareness in the Irish higher-education sector

## The RCSI Medicine Curriculum

### Five-year programme structure:



### Modular structure (credits)

| <u>Junior Cycle</u>            | <u>Intermediate Cycle</u>                      | <u>Senior Cycle</u>  |
|--------------------------------|--|--|
| 10 x 5-credit<br>4 x 10-credit | 1 x 5-credit<br>4 x 10-credit<br>1 x 15-credit | Medicine<br>Surgery<br>Ob/Gyn<br>Paediatrics<br>Psychiatry<br>GP<br>Sub-Intern |
| Total = 90                     | Total = 60                                     | NA   |

## Conclusions

RCSI is committed to the implementation of the Bologna / ECTS requirements in its curriculum structure & delivery. Progress has been made in the Junior & Intermediate Cycles, but much remains to be done in the clinical phase of the programme, the Senior Cycle.

# Suggestions for the implementation of a BA / MA system at Yerevan State Medical University



G.Kyalyan, A.Markosyan, G.Yaghjyan  
Yerevan State Medical University

## Introduction

Yerevan State Medical University (YSMU) began the implementation of reforms related to the Bologna Declaration in 2005. An educational model for a Bachelors and Masters system in medicine has been recently proposed for YSMU and could help to facilitate the transfer from the previous, pre-Bologna educational system to a new one. The model is currently being discussed and tested at YSMU.

## Concept

In the suggested model, undergraduate medical education will last 5 years and will result in a Bachelors degree.

After the Bachelors, focus in 8 major divisions of medicine will be offered in Masters programs where students will gain the necessary skills for both general medical practice and for their Masters sub-specialty. Upon completion, this track confers a MD-MSc degree.

For narrower medical specialties the graduates can apply to residency programs following the corresponding Masters programs. The duration of the residency programs will depend on the chosen specialty.

Holders of an MSc degree may also apply to a PhD program (third stage of education).

An extensive curriculum development project is currently being carried out at YSMU for best implementation of the reforms.

## Strengths

- graduates interested in biomedical research would have a chance to choose a more focused/appropriate path after 3 years of the Bachelor of Medical Sciences.
- the degree Medical Doctor (MD), widely accepted in many countries, is still awarded.

## Weaknesses

- There are not sufficient working places in the labour market for the holders of a BA degree yet.

## Suggested BA/MA system in YSMU

| Medical Doctor (MD)  |                     | Clinical Residency         | CME                |
|--|---------------------|----------------------------|--------------------|
| Bachelor of Medicine, Bachelor of Surgery (MBBS)   | Master in ... (MSc) |                            |                    |
| 3 years  | 2 years             | 2-5 years                  | LLL                |
| Basic medical sciences   | Clinical sciences   | various narrow specialties | various activities |
| Bachelor of Medical Sciences (BMS)   | PhD<br>3-5 years    |                            |                    |
| Master of Sciences (MSc)<br><small>(e.g. in Anatomy, Physiology, Neuroscience, etc.)</small> | 2 years             |                            |                    |
| PhD  | 3-5 years           |                            |                    |

## Conclusions

- The reforms need devotion and careful assessment.
- The faculty should be open and prepared for the reforms.
- Curriculum development is an essential step in the reform.
- Health care policy reform should be made by the Government to ensure workplaces for graduates.

The BA/MA model suggested by YSMU might be a good platform for further discussion of the problem!



# The 3 + 3 Ba-Ma structure is inappropriate for undergraduate medical education

Prof. J. De Maeseneer, MD, PhD

Chairman Educational Committee – Faculty of Medicine and Health Sciences

The Bologna-structure, applied to medical education, leads to a 3 + 3 medical curriculum. On the other hand all stakeholders emphasise the need for an educational continuum integrating basic medical sciences, clinical training, research and patient care throughout the whole curriculum.

- There is no societal “output” for a bachelor in medicine after 3 years
- A “Master in medicine” after 6 years is not allowed to take responsibilities in health care independently

- A comprehensive integrated and problem oriented medical curriculum does not fit into the bachelor-master dichotomy.
- The traditional preclinical-clinical dichotomy is no more relevant in a modern medical curriculum

- Bologna requires clear “objectives” for a bachelor degree: they are difficult to formulate
- Actually, the bachelor degree is just an artificial “STOP” utilised e.g. for extra recruitment from other disciplines



## Conclusion:

A consistent implementation of Bologna in medicine could be designed as follows:

- 6 Years of bachelor-training
- Variable number of years master-training leading to:
  - Master in family medicine
  - Master in specialist medicine (cardiology, surgery, ...)
  - Master in occupational medicine
  - ...

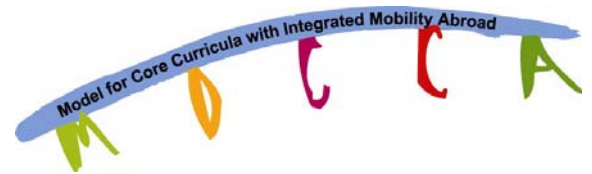
**3 + 3 Ba-Ma structure is inappropriate for undergraduate medical education**

# Public Health Education Integrating Mobility: The MOCCA Approach

Henny Annette Grewe

Markus Heckenhahn

Faculty of Nursing and Health Sciences, Fulda University of Applied Sciences/Germany



## Introduction

The MOCCA project (2006-2008) was designed to support higher education institutions in developing study programmes that integrate transnational mobility. The project was coordinated by the German Academic Exchange Service and involved National Agencies and comparable organisations, Bologna experts, university staff and students from Estonia, Finland, Germany, Lithuania and the United Kingdom.

The theoretical and general recommendations for curriculum design developed by the group of experts have been validated by translating them into practical curriculum design, modelling a Master's programme in public health.

## Aim and Concept

To foster student mobility and to consider students' individual preferences concerning the places and subjects of a mobility period.



- 1) Integration of flexible study parts into public health programmes.
- 2) Scheduling of the flexible parts to achieve a time slot for individual learning arrangements.
- 3) Assessment and crediting of competences that are developed through a mobility experience.

## Strengths

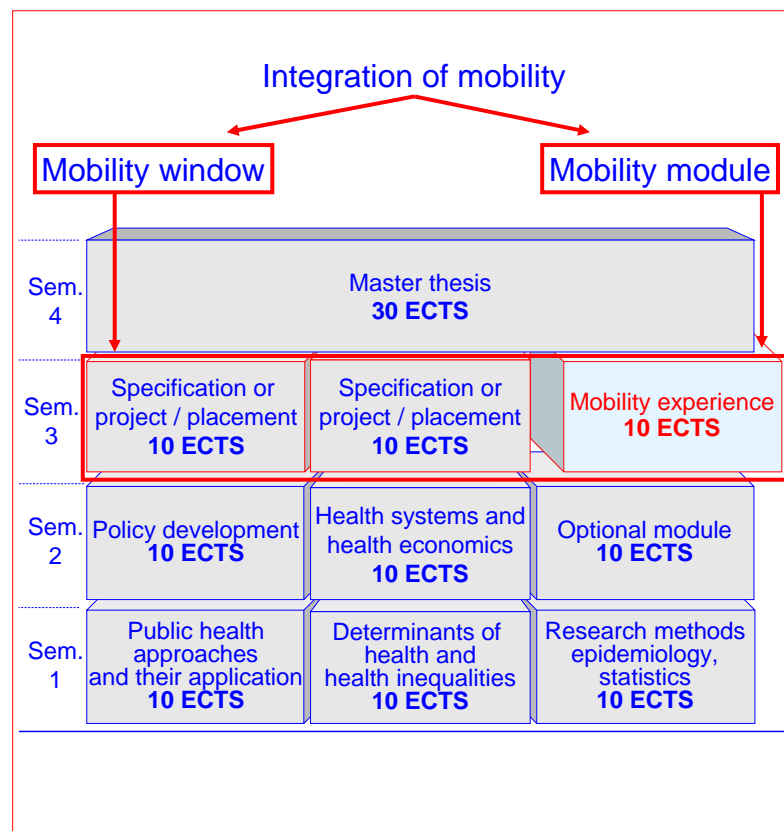
**Simple programme structures...**  
 ...facilitate the transfer within the European higher education area.

**Recognition of individual learning in the context of mobility...**  
 ...rewards the student's additional efforts.

## Weakness

**Individual learning pathways...**  
 ...require individual supervision and adequate resources.

## Result: The Public Health Programme



## Conclusions

Conceptual innovation of study programmes in accordance with the Bologna recommendations can facilitate student mobility even within short study cycles.

**Make students mobile!**

# Bologna Process and scientifically qualified doctors – no conflict of interest



Jörg Pelz, Manfred Gross

Prodekanat Studium und Lehre, Charité Universitätsmedizin Berlin, Germany

## Introduction

Medical education in Germany aims at a “scientifically and practically qualified doctor in medicine”. Medical faculties put different emphasis on the diverse aspects of medical education. The faculty of the Charité regards the physician as a scientist as the key element of the academic education. In the two curricula of the Charité, the traditional one and the reformed one, students have to complete two scientific projects during their studies and have to present their results as posters or oral presentation.

## Concept

- Teaching of scientific methods and concepts starts right from the beginning.
- Scientific methods in medicine cover much more than ‘the experiment’, - they include among others study design, qualitative studies and biostatistics.
- All students have to develop, conduct and present individual research project
- The process of critical thinking develops not only as an element of doing science but becomes a constitutive element in the learning process.

## Strengths and Weaknesses

*The Bologna-Process lays a strong stress on intensive research projects which complete its three cycles of education qualification. This leads to an early familiarisation of students with scientific concepts and methods and emphasises critical thinking.*

*The faculty has to deal with a high amount of scientific projects, has to develop lots of research outlines, supervise students, discuss results and provide time, money and room for different research activities.*

## Science and research projects in the current curricula of the Charité

### Traditional

### Reformed

## Curriculum of the Charite

4<sup>th</sup> semester:

Course on scientific methods and on biostatistic  
Research project, written report and oral presentation

5<sup>th</sup> semester:

Course on scientific methods, bioinformatics and biostatistic  
Research project, written report

Bologna

1<sup>st</sup> -5<sup>th</sup> semester:

Elements of scientific methods in all modules one mandatory science module, optional modules on science, scientific methods

6<sup>th</sup> semester

Research project, Bachelor thesis

7<sup>th</sup> semester:

Course on scientific methods and on biostatistic  
10<sup>th</sup> semester:

Research project, written report,  
or two abstracts from scientific congresses  
or significant part of dissertation project

10<sup>th</sup> semester:

Research project (critical review), poster and oral presentation  
or significant part of dissertation project, poster and oral presentation

Bologna

7<sup>th</sup> -10<sup>th</sup> semester:

Elements of scientific methods in all modules, optional modules on science, scientific methods

10<sup>th</sup> semester

Research project, Master thesis

## Conclusions

Medical faculties can emphasise science and research in their curricula without the Bologna-Process. Medical faculties which attach importance to research and science could (and should) adopt the Bologna-Process without any loss of content and quality.

**The Bologna-Process supports scientific medical education which is already implemented– it facilitates its implementation of scientific**

# International, national and institutional implementation of the BOLOGNA MODEL at the IULIU HATIEGANU University's MEDICAL SCHOOL -Impact on medical education



Prof. Anca Buzoianu MD, PhD;  
Dean of the MEDICAL FACULTY;  
Iuliu Hatieganu University Cluj Napoca ROMANIA

Romania is participating in the Bologna process since 1999 with Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain and Sweden, actively acting in Prague 2001, Berlin 2003, Bergen 2005, and London 2007.

The reform of curricula at the Medical Faculty of Cluj, started in 1996, aiming to introduce principles as self directed efficient learning, lifelong learning, critical judgment, use of scientific methods, development of social, ethical, communicative and economical competences, flexible learning paths.

From 2002 the faculty was the leading higher education institution in the negotiation process in respect for European directive No93/16/EEC and 2005/36/EC on the recognition of professional qualifications

## INSTRUMENTS AND MAIN CRITERIA

1. Adoption of a system of easily readable and comparable degrees
2. Adoption of a system essentially based on two main cycles, undergraduate and graduate
3. Establishment of a system of credits . such as the ECTS system
4. Promotion of mobility
5. Promotion of European co-operation in quality assurance
6. Promotion of the necessary European dimensions in higher education
7. Integrate life long learning into the overall strategy
8. Higher education institutions and students
9. Promoting the attractiveness of the European Higher Education Area
10. Establish a European research area

## IMPLEMENTATION

1. • Harmonization with the Medical Education Directive EC 93/16., Art. 23 par.2 (medical education in the EU consists of 5.500 hours of structured schooling or six years) and the EU directive on the recognition of professional qualifications (2005/36/EC), Art. 24.2
  - Introduction of the Diploma Supplement and similar measures.
2. • Current efforts to update the medical curriculum recognize that the early integration of basic and clinical science is essential to produce better doctors.
  - Introduction of the 'new' masters degrees after 6 years of integrated studies
3. A correct and consistent implementation of ECTS and the grading system as measure of the workload involved in a specific learning/teaching activity or unit in the curriculum e.g. a module, a course, a subject or discipline including a precise description of the unit in the curriculum, its content, level, learning/teaching methods and assessment.
4. Continuous growth in international mobility and student exchange through *transparency, recognition of degrees and courses, financial support, language courses, coordination, role of students associations*
5. *Cooperation with WFME, GMC, IIME, LCME, CIDMEF, AMEE – AMSE – MEDINE – NCME - EMA – UEMS – IFMSA – EMSA....*
6. Focus on language learning
7. Continuing medical education (CME) or the more comprehensive continuous professional development (CPD) realized by the utilization of modern teaching methods and self-directed learning as setting the foundation for life long learning.
8. • Recognition of students as .competent, active and constructive partners(25% from all academic and administrative structures).
  - Involvement of the profession (representatives of the health care delivery system), regulatory bodies, professional organizations
9. Attractive professional and extraprofessional offers for both European and non-European students.
10. Research Methodology Master degree.
  - Doctoral school

**CONCLUSIONS:** *We are concerned about the negative implications of the two-cycle structure on medical education. However, not implementing the two-cycle structure should not be an excuse not to implement the rest of the Bologna process.*

**For "progression" before acting locally, institutions must look globally through the implications of the existence of the European Higher Education Area after 2010.**



# Kazakh Medical Academy: the leader of reform medical education system in Kazakhstan



Timur Tapbergenov  
Rector of the Kazakh Medical Academy

## Introduction

The Kazakh Medical Academy is one of leading high medical schools in the field of the higher medical education in the country. Today Academy - the largest educational-scientific complex on preparation, certification and improvement of professional skill of medical and pharmaceutical staff. Fundamental search and applied scientific researches, high quality medical service the population, propagation of achievements of medicine and pharmaceuticals are closely connected to educational process. The academy heads educational-methodical association of high medical schools of Kazakhstan.

## Today

At all stages of the development the academy follows the concept of classical high medical school in realization of applied medical and pharmaceutical education. In academy the transition to a three-stage education system is carried out: a bachelor degree, a master degree, doctorate degree programme (PhD), on several specialities, and also to the credit technology of training. Academy the only high medical school in Kazakhstan where preparation of PhD students are carrying out.

## Future

The academy is a part of National medical holding. Holding mission is granting of a wide spectrum of medical services, introduction of the best management, professional training and development of an applied medical science. Our goal - to create the modern innovative high medical school integrated into the international community, with the stable and independent financial and economic system, rendering the innovative educational and medical services corresponding to the international quality standards and safety. Competitive graduates of high medical school - original brand of Kazakhstan in the international community.

## System of quality education of the Kazakh Medical Academy

The academy quality system the Belgian-Netherlands model of higher education quality improvement been choosed, based on model of the European fund of quality management (EFQM).

The quality estimation is based on nine criteria:

- the role management is the preparation qualified specialists;
- the policy and strategy in a field of the quality of specialists preparation;
- the use of teachers, employees and trainees potential for creation the specialists preparation quality;
- rational use of resources (material, financial and human);
- processes direction of specialists preparation quality;
- satisfaction of employers by quality of preparation of specialists in high medical school;
- satisfaction of teachers, employees and trainees by high medical school work;
- influence of high medical school on a society;
- achieved results of medical high school in planned goals of preparation specialists quality improvement.

## Conclusions

The big work on integration into world education and development of international cooperation been carried out. The basic directions of work in the field of the international cooperation are: participation in the international educational programs; scientific and technical collaboration with higher educational institutions, medical scientific and professional organisations.

**We are ready for cooperation and partnership**

# Cooperative Medico-technical and Administrative Qualification of clinical Management Assistants

Uwe Faust<sup>1</sup>, Brigitte Jachmann<sup>2</sup>

<sup>1</sup>Scientific program director, Provadis School of International Management and Technology, Frankfurt, <sup>2</sup>Head MTA-Schule der städt. Kliniken Frankfurt-Höchst

Scientific and technical innovation, global competition and cost pressure of public systems require cross functional health care management skills to professionally coordinate hospital development according to future needs:

Medical and technical know how, special skills in medical informatic systems and software, sound economic knowledge with focus on health care management, social skills understanding, M.D.s., hospital managers and technical experts alike, process and project management, management of change, leadership skills, scientific English to communicate internationally.

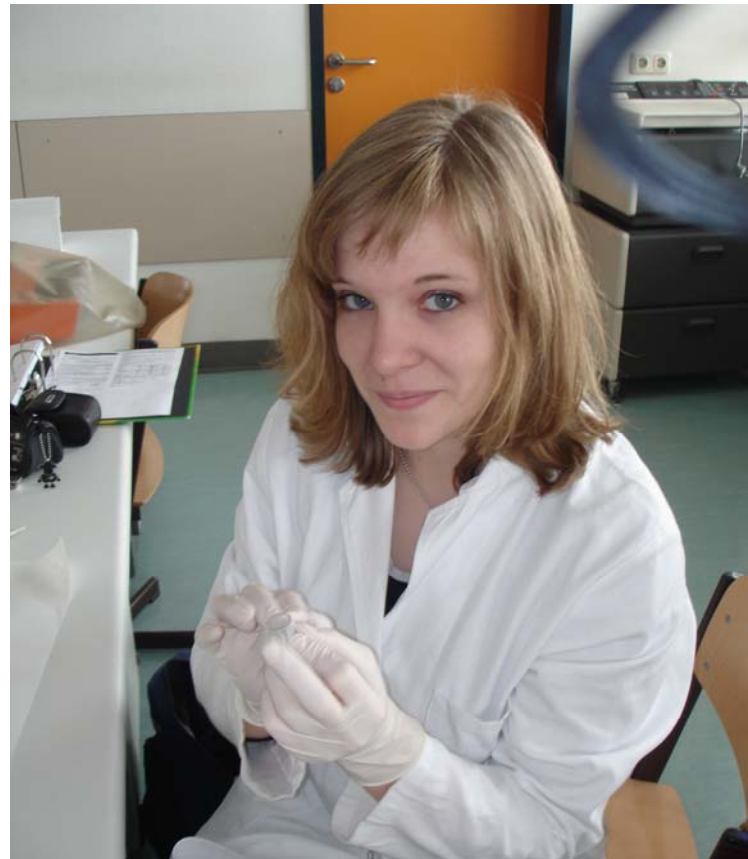
## Vocational Training: medico-technical assistant

- 3 years college course in a medical school associated with a hospital.
- Specialisation in radiology or medical lab diagnosis.
- internships in corresponding departments of medical centers and hospitals.
- 4400 hours of training.
- State exam MTA laboratory / radiology.



## Bachelor course: international business administration (health care)

3 ½ years university course in business administration with focus on health care management, leadership skills, project management, managing public administration systems, insurance matters and medical requirements, integrated into time schedule of vocational training: one afternoon and Saturday weekly, case studies with practical relevance to hospitals, bachelor thesis focussed on health care inside a hospital.



Tessa Frielinghaus,  
student of combined qualification model

**Our novel qualification program gives coordinative support to medical doctors, administrative hospital managers and technical experts alike in a team effort to compete successfully on a global scale**

**Health care performance is a team play**

# Symbiotic Faculty Development Including an Implementation of a Two-tier Medical Education

Dr Janine Henderson & Dr John Lewis, Directors of Problem Based Learning (PBL), Hull York Medical School (HYMS), United Kingdom (UK)  
Prof Egon Toft, Associate Dean, Pia Britt Elberg, Associate Professor, The Faculty of Medicine, Aalborg University (AAU), Denmark



## Background

The HYMS Degree in Medicine and the AAU Bachelor's Degree in Medicine with Industrial Specialisation are two new undergraduate programmes. The HYMS programme is divided into 3 Phases. HYMS utilises formal PBL during Phase 1 (Years 1 and 2) of its curriculum.

The Aalborg faculty approached HYMS in 2005 with a request to collaborate in the development and implementation of PBL in its programme.

### Objectives (1)

To deliver a 3 day experiential training course in implementing PBL in the AAU curriculum.  
To establish a collaboration between the two faculties.

This collaboration led to:

### Objectives (2)

Involvement of HYMS students in the development of the Aalborg curriculum.  
The exchange of students between the two universities for intercalated degrees.  
The admission of Aalborg graduates to Phase 2 of the HYMS curriculum. These students have completed their Bachelor's degree which is an equivalent of the HYMS Phase 1 curriculum.

### Aids to Progress

The progression of the project has required considerable enthusiasm from the key individuals. The involvement of students has been an important factor. Flexibility in approach has been a determining characteristic. For example specific modules have been introduced for the Aalborg programme to meet requirements of UK General Medical Council, and advanced clinical skills teaching delivered to Aalborg students by HYMS students.

### Obstacles to Progress

Existing national and faculty legislation did not accommodate the Bologna Process particularly regarding issues of formal entrance requirements including the equivalence of high school and other assessments.

## Outcomes

### PBL

- This part of the project has been completed.
- AAU is now self-sufficient in this component.

### Symbiotic Development

- HYMS students undertaking Student Selected Components of the HYMS curriculum at the Aalborg faculty (2006 – 2009).
- Developing plans between the two faculties for the exchange of students for intercalated degrees.
- Continuing collaboration with HYMS faculty members to develop clinical teaching at AAU.

### Bologna Process

- Applications for entry for postgraduate AAU students to Phase 2 of the HYMS curriculum equivalent to a two-tier process (2009 entry).

## Conclusions

The absence of an established Bologna protocol need not be a bar to developing successful interfaculty collaboration.

Close liaison with key faculty individuals to establish curricular needs is required to facilitate progress, adapting flexibly to issues as they arise.

Our experience from this project will be utilised in establishing future similar implementations with other international faculties.

### Transferable & Generalisable Principle

The enthusiasm and innovative thinking of stakeholders are vital resources in driving Bologna Process projects.

# The German Association for Medical Education (GMA) and the Bologna-Process



**GMA - Committee for Study Reform in the European Higher Education Area**

Chair: Waltraud Georg, Charité – Universitätsmedizin Berlin

The German Association for Medical Education (Gesellschaft für Medizinische Ausbildung – GMA) published in 2005 a position paper and recommendations on “Medical Education and the Bologna Process”. This careful analysis was widely discussed in the German-speaking area. In succession a new committee was established to work on the Bologna reform.

The Bologna-Process offers a chance for the reform and modernisation of the medical curricula. All activities should be critically monitored if they are in line with this goal. The GMA participates in this process and will support activities to improve medical education in Europe.

The implementation of the two cycle system in Switzerland gives us the chance to learn from mistakes and build on the positive aspects of the Bologna reform in Germany. Experiences from other European countries will add to this ongoing process!

## GMA - Committee for Study Reform in the European Higher Education Area

Presently work is done on the following topics:

- Collection of material to support activities within the Medical Faculties
- Clarification of the regulatory framework for the implementation of the two cycle system in Germany
- Identification and description of the expenses in implementing the BA/MA structure
- Modularisation and the growing examination burden - a necessity?
- Mobility and collaboration
- Follow-up of BA graduates
- Structure of the quality assurance process

## Conclusions

More than 20 people from 15 different German-speaking Medical Faculties are working on the different topics. The structure of the GMA facilitates an open dialogue where we share ideas and learn from first-line experiences with the implementation of Bologna reforms.

**Improvement through exchange**