

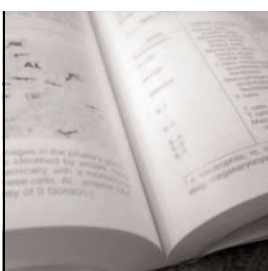


European Core Curriculum ***The Students' Perspective***

5th International Follow-Up Conference on the
Bologna Process in Medical Education

6 - 10th July, 2006
Bristol (UK)

European Medical Students' Association (EMSA)
International Federation of Medical Students' Associations (IFMSA)



© 2006 International Federation of Medical Students' Associations (IFMSA) and European Medical Students' Association (EMSA).

The user may copy the "European Core Curriculum - *the Students' Perspective*" in full for educational, personal, or public non-commercial purposes, provided he / she / it complies with the following:

1. The user may not charge for copies
2. The user must include the following attribution statement prominently on each copy of the core curriculum:

© 2006 IFMSA and EMSA. A product of the 5th Bologna Process follow-up conference. Bristol (UK), July 2006.

How to reference this document:

IFMSA/EMSA (2006), European Core Curriculum - *the Students' Perspective*. Bristol (UK).

Correspondence:

Mr. Jan Hilgers

IFMSA Medical Education Director 2005-2006

Rothenbacher Weg 12

51503 Rösrath

Germany

Executive Summary	2
Preamble	3
Clinical Skills	5
Communication	6
Critical Thinking	7
Health in Society	8
Life Long Learning	9
Professionalism - Attitudes, responsibilities, and self development	10
Teaching	12
Teamwork	13
Theoretical Knowledge	14
Participants	16
References	18

Note:

The domains of the “European Core Curriculum - *the Students’ Perspective*” are listed in alphabetical order.

From 6-10th July 2006, the 5th Bologna process follow-up conference organised by the European Medical Students' Association (EMSA) and the International Federation of Medical Students' Associations (IFMSA) took place in Bristol (UK).

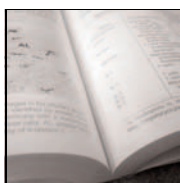
More than 40 medical students' representatives from 15 countries agreed on an outcome-based European core curriculum from the students' perspective. The "European Core Curriculum - *the Students' Perspective*" expresses the medical students' opinion on which abilities, knowledge, and attitudes graduates of medical schools in Europe should have gained and be assessed in accordingly.

Over the last few years, in innovative medical education, focus has shifted from acquisition of knowledge towards the achievement of concrete learning outcomes. Society and stakeholders are now more interested in the final product of the educational programme rather than the processes used to reach them. Therefore the core curriculum does not prescribe neither teaching nor assessment methods to be used but only the final product of the educational process.

The core curriculum is structured in nine domains with 76 learning outcomes which are listed in alphabetical order:

- Clinical Skills,
- Communication,
- Critical Thinking,
- Health in Society,
- Life Long Learning,
- Professionalism - Attitudes, Responsibilities, and Self Development,
- Teaching,
- Teamwork,
- Theoretical knowledge.

The curriculum will serve medical students and all other stakeholders in medical education as a common framework which can easily be adjusted for specific national or local needs. It serves as a common basis aiming to maintain and even improve the quality of education, healthcare and mobility, therefore furthering the establishment of a European Higher Education Area.



This document was adopted by the general assembly of IFMSA in August 2006 (Zlatibor, Serbia) and by the general assembly of EMSA in October 2006 (Pec, Hungary).

Since 2003, the European Medical Students' Association (EMSA) and the International Federation of Medical Students' Association (IFMSA) have collaborated in developing the European Higher Education Area in the field of medicine resulting in widely recognised position papers ^{i, ii}. The 5th Bologna follow-up conference in Bristol (UK) hosted more than 40 medical students' representatives from 15 European countries discussing a **“European Core Curriculum for Medicine - *the Students' Perspective*”**.

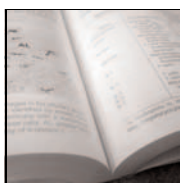
Participants of the above mentioned conference agreed on the development of an outcome-based core curriculum designed to fit society's need for optimal patient care and safety ^{iii, iv, v}. The medical profession differs from other professions in that it is the outcome of education rather than the educational process that has a significant bearing on public health. The focus in medical education has for too long been based on the educational process instead of the product of education ^{vi, vii, viii, ix, x, xi, xii}. Consequentially, as medical students of Europe, we embrace the challenge of working with Medical Schools to take more responsibility for the final product of education instead of focusing on providing knowledge in excess of the core abilities gained by each graduate.

The field of medicine is rapidly expanding; advancing research and technology have extended our core knowledge necessitating a dynamic and modern curriculum to serve new demands. This focused education will empower graduates to serve their population with the most accurate and relevant knowledge and abilities. All stakeholders in medical education should increase communication to develop these curricula and associated appropriate methods of assessment ^{xiii, xiv}, optimising the outcome of medical education and the consequential standard of the medical profession.

We aimed neither to reinvent the wheel nor neglect the existence of established and elaborated core curricula ^{ix, xv, xvi, xvii, xviii, xix, xx}. Whilst these documents have paved the way in outcome-based initiatives and we have incorporated some of their key ideas, we wanted to express the opinion of European medical students. As a diverse group currently experiencing a broad base of undergraduate medical education with equally varied educational techniques, we are in an optimal position to propose a curriculum suited to modern healthcare needs. We suggest the use of this curriculum as a framework which could easily be adopted and adjusted for national and local needs.

In developing a core curriculum, harmony and subsequent mobility will be increased throughout the European Higher Education Area. While the core values remain constant throughout Europe, we embrace the individuality and diversity of the countries, regions and individual institutions. This is reflected in the nature of an outcome-based curriculum, not prescribing the educational approach which leads to the end-point, but the overall outcome.

Whilst we believe that the current course of medical studies should lead to a common European medical degree, with specialisation occurring at a post-graduate level, the opportunity to tune individual interests and abilities at the undergraduate level is an important one. Thus, we welcome the opportunity for



faculties and their students to foster a unique profile through educational opportunities and programmes. This will facilitate a culture of diversity and increased evolution of the field.

This document is a demonstration of the hard-work and dedication of European medical students to facilitate change and contribute to improved patient care and safety in our future work as medical professionals. We acknowledge our responsibilities and are prepared for the challenges associated with being at the forefront of reform. However, we are only one stakeholder in the field of medical education and therefore present our opinion as a basis for further work and co-operation. This will create a motivational environment for learning leading to further excellence in healthcare ^{iv}.

On behalf of the participants,



Paul de Roos
Medical Education Director 2005-06
EMSA



Jan Hilgers
Medical Education Director 2005-06
IFMSA



Emily Rigby
President
Organising Committee



Note:

The domains of the “European Core Curriculum - *the Students’ Perspective*” are listed in alphabetical order.

Graduates should have acquired and mastered clinical skills and practical procedures in order to confidently perform them in the professional environment. We appreciate the need for a specific list determining the skills and procedures. Whilst this is beyond the scope of this document, we acknowledge those outlined in previous documents ^{ix, xv, xvi, xvii, xviii, xix,}

Basic Diagnostic Tools

- Graduates should be able to take a detailed and relevant history.
- Graduates should be able to perform both general and targeted physical examination.
- Graduates should be able to utilise diagnostic procedures, imaging techniques and laboratory (paraclinical) tests where appropriate and interpret results adequately.

Clinical Reasoning

- Graduates should be able to demonstrate sufficient clinical reasoning to enable them to use the basic diagnostic tools to arrive at a diagnosis and management plan in light of all the acquired information.

Treatment and Care

- Graduates should be able to formulate and carry out an appropriate management plan.
- Graduates should be able to recognize and manage emergency conditions.
- Graduates should be able to administer advanced life support as defined by international guidelines ^{xxi}.
- Graduates should be able to apply appropriate palliative care.

Clinical Record Keeping

- Graduates should be competent in maintaining clinically and legally valid patient records which are easily readable.

Patient-Centred Approach

- Graduates should be able to consider the patient as a whole taking into consideration his social and psychological background.
- Graduates should be able to take into account the patient's understanding and experience of their condition and treatment.
- Graduates should be able to adapt treatment to the particular patient, evaluating both effectiveness and evidence.



Graduates should have the communication skills that facilitate the practise of acquired competencies. This is vital to excellence in patient care.

- Graduates should be able to communicate effectively and efficiently with all relevant parties in the medical environment. This includes:
 - Appropriate communication in every situation using different communication tactics
 - Awareness of their own and others' non-verbal communication.
 - Effective communication with patients, regardless of their backgrounds and/or disabilities.
 - The ability to effectively explain medical issues to a patient
 - Effective communication with other healthcare workers
 - The ability to communicate with all organisations that serve the public.
- Graduates should show respect, openness and honesty with patients and aim to communicate with empathy and intuition.
- Graduates should put all their efforts in creating an atmosphere of confidentiality.
- Graduates should find a way to communicate, even when there are barriers to the communication.
- Graduates should be able to use interpreters and be aware of the difficulties concerning this type of communication.
- Graduates should be able to communicate through all common modalities, including verbal, non-verbal, oral and written communication.
- Graduates should be able to give and receive feedback.



Critical thinking is the systematic evaluation of information preceding any professional decision and action. We emphasise that this skill is integral to all aspects of the doctor's role.

- Graduates should be able to question medical procedures and treatment protocols before their application.
- Graduates should be able to find the evidence base for clinical decisions.
- Graduates should stay up-to-date with recent scientific developments and implement evidence based medicine in daily practice. This includes:
 - The ability to evaluate relevant scientific texts and learning resources.
 - An awareness of the limitations of current medical knowledge.
- Graduates should be able to apply quality assurance methods in professional practice.
- Graduates should be able to effectively and critically use resources in professional practice.



As future doctors in a rapidly changing environment we are obliged to adjust our attitudes to the expectations of society. We consider knowledge of the basic principles of public health issues as essential for our work as future physicians at a local, national and international level. Therefore, we stress the importance of including environmental, cultural and international health related issues in our medical curriculum.

Environmental Issues

- Graduates should know the impact of social, political and economic factors on the health of individuals and the community.
- Graduates should know the key risk factors, strategies for prevention and screening programmes for the most common conditions.
- Graduates should be able to identify vulnerable populations and respond appropriately.
- Graduates should be able to promote health in individual patients and in society. This includes:
 - Active education of patients.
 - The ability to identify health hazards in the environment and use the existing protocols to notify the responsible authorities accordingly.
 - The ability to formulate their opinion on these issues and participate actively in shaping health policies.

Ethnicity and Cultural Issues

- Graduates are able to work with patients from different cultures, religions, social and ethnic backgrounds. This includes:
 - Approaching all patients with equality, regardless of their background.
 - Effective communication with patients, regardless of their background.
- Graduates can identify specific ethnic and social groups susceptible to certain conditions.
- Graduates understand the impact of cultural, religious and social aspects on health, health behaviour and the treatment process.

International Health Issues

- Graduates should be familiar with the structure of European and International health politics and all its stakeholders.
- Graduates should be aware of the existence of epidemics and infectious diseases worldwide and know their prevention, treatment and relevant reporting procedures.
- Graduates should be conscious of the limitations of access to healthcare in certain areas of the world and their causes.



Life long learning is the refreshment and application of knowledge that a physician should perform with continuity for the rest of their career. A physician should be someone who is constantly up-to-date with their medical knowledge, ensuring that the patient care is evidence based and applied according to the current standards.

- Graduates should be able to identify their own learning needs.
- Graduates should learn strategies to continuously update their relevant medical knowledge and its practice.
- Graduates should assess knowledge and sources of information in terms of their relevance and reliability.
- Graduates should be aware of the benefits of life long learning and realise the consequences of not taking part in learning processes.



Professionalism - Attitudes, responsibilities, and self development

Professionalism is an ongoing process, which starts during student-life but continues developing as the student moves into the role of a physician. Undergraduate education leads to a profession and students need to gain the abilities appropriate to a physician's role and identity. Students should play an active part in the development of their role as physicians and they should be provided with a framework to facilitate this development.

Besides acquiring professional attributes, students should develop an ethical foundation in order to ensure optimal patient care in their future work. In addition, graduates should be aware of society's expectations and should possess sufficient management skills to be able to function within the healthcare sphere.

Professional Attitudes

- Graduates should possess the ability to build a positive professional relationship with the patient. This includes:
 - Showing respect for the patient's autonomy as well as their ability to make informed decisions about their own health and life.
 - Respecting confidentiality as defined by the relevant legal and ethical guidelines.
- Graduates should be willing to constantly refresh and update their knowledge and skills throughout their professional career.
- Graduates should be willing to teach colleagues the knowledge and skills they themselves have mastered.
- Graduates should be prepared to use their knowledge to educate and guide patients and the society in general.
- Graduates should be active in their contribution to the advancement of medicine.



Management, Responsibility and Decision Making

- Graduates should be able to apply basic knowledge concerning leadership and management to professional situations.
- Graduates should employ strategies to cope with crises, conflict, uncertainty, errors and time limits.
- Graduates should have knowledge of the healthcare system in terms of effective patient care and cost effectiveness. They should be able to pay specific attention to rational prescription and use of resources.
- Graduates should have the ability to uphold the S-T-E-E-E-P (Safe, Timely, Efficient, Effective, Equitable, and Patient-centered) principle of patient care ^{iv,v} by bearing in mind the consequences of their actions, and be able to learn from mistakes.

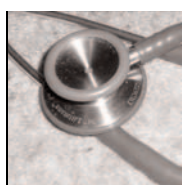
- Graduates must be able to handle the responsibility needed to work as physicians.
- Graduates should be aware of and able to fulfil their legal responsibilities and obligations as doctors and be able to fulfil those.
- Graduates should know the limits of their knowledge, skills, experience, time, physical capabilities and health. To ensure patient safety, graduates must be able to seek appropriate help and assistance when they are beyond their own capacity.
- Graduates should have the ability to make decisions, both independently and as a part of a team.
- Graduates should be able to make professional decisions knowing that these may have great impact on peoples' lives. Therefore, difficult decisions should, where relevant, be taken in conjunction with colleagues, the multi-disciplinary team, patients and/or their relatives.

Self Awareness

- Graduates must be able to continually evaluate and reflect on their work and role as a practitioner. They should be able to show development in response to both external feedback and self-assessment.
- Graduates need to be confident in their thoughts and actions within their level of competence whilst being aware of their own limits.
- Graduates should be aware of the pressures of a demanding profession and they should be prepared to deal with a stressful environment. Graduates should be familiar with resources available for stress management.

Ethical Principles

- Graduates should apply relevant ethical codes to everyday clinical work and be able to express a well-considered opinion on ethical issues.
- Graduates should be able to ensure appropriate interactions with the healthcare industry.



We believe teaching to be an essential component of professional and educational interaction on every level in the medical field and that it plays a key role in maintaining excellence within the healthcare system.

- Graduates should be able to teach colleagues, students, other healthcare providers, patients and their relatives, communities and society at large. This includes:
 - Knowledge of teaching methods.
 - Having the skills to choose the most suitable method and content for the situation and the group or person being taught.
 - The ability to teach the latest up-to-date information in the subject they are teaching.
- Graduates should have knowledge of assessment methods and have the skills to choose the most suitable method for the situation, group or person being assessed.



Graduates should aim to ensure optimal patient care by being able to work effectively as part of a team whenever necessary. He should therefore be able to demonstrate the skills and attitudes necessary to fulfil the relevant role.

- Graduates should be able to identify situations where teamwork is necessary and the appropriate composition of the team.
- Graduates should be able to work in a multidisciplinary team.
- Graduates should be able to distinguish the various roles they may be required to play and identify which ones are pertinent to the situation at hand.
- Graduates should demonstrate the attitudes and abilities necessary to work effectively in a team, aiming for excellence in patient centred care. These should include:
 - Leadership where appropriate
 - The ability to share information
 - Showing respect for, and understanding of, other professionals
 - The ability to effectively occupy different roles within a team as required by the situation
- Graduates should be aware of additional diagnostic and therapeutic options available within other healthcare professions.
- Graduates should be familiar with the relevant procedures of collaboration and communication with other bodies within the specific healthcare and legislative framework.



Graduates must have acquired a scientific foundation for the practice of medicine and be able to translate the knowledge gained into medical practice and professional competence.

They must be aware of the rapid changes and advances in knowledge and recognise the importance of lifelong learning. Newly qualified doctors must make a commitment to exchange of knowledge with peers, be able to recognise the limits of their knowledge, and be able to access appropriate sources of information and evaluate them.

Basic Sciences, Clinical Disciplines and Research

- Graduates should have core knowledge relevant to common clinical settings, in basic sciences and clinical disciplines.
- Graduates should understand diseases and biological variation based on knowledge of both the healthy and unhealthy body. They need to apply the principles of basic sciences, including research to clinical practice.
- Graduates should have knowledge of research theory.

Humanities, Social and Behavioural Sciences

- Graduates should have knowledge of medical ethics.
- Graduates should understand the influence of social and behavioural sciences on the practice of medicine.

Community and the Environment

- Graduates should understand social, environmental and occupational influences on health in the community.
- Graduates should have knowledge about cultural and religious variation within the population, and understand how people from different cultures or religions present and cope with common illnesses, treatment, death and dying.



Healthcare System

- Graduates should know the structure and functions of the healthcare system, the role of the doctor and other professions in the healthcare system.
- Graduates should know their legal obligations regarding patients' treatment and records.
- Graduates should have sufficient knowledge about the information technology of the healthcare system in which they are working.
- Graduates should know how prevention programmes can improve the health of the community and keep their knowledge up-to-date.

European Dimensions

- Graduates should know about other healthcare systems since medical practice cannot be seen only within one country's perspective.
- Graduates should preferably have acquired knowledge (both written and oral) in one or more European foreign language and should have knowledge about European cultures.



The following medical students' representatives have participated in the conference and contributed to the core curriculum:

Denmark:

Maja S. Basnov
National Officer on Medical Education
IMCC-Denmark
University of Aarhus

Jill R. Mains
National Spokesperson for Internships
Danish Association of Medical Students
(FADL)
University of Aarhus

Louise Stoerling
Medical Students' Council
University of Southern Denmark, Odense

Patrick Weinmann
Chairman of Medical Students' Committee
Marburger Bund
BVMD-Germany
University of Hamburg

Greece:

Christos Chronis
HelMSIC-Greece
Aristotle University of Thessaloniki

Nikolaos Davaris
Local Officer on Medical Education
HelMSIC-Greece
Aristotle University of Thessaloniki

Finland:

Liisa Karttunen
FiMSA-Finland
University of Helsinki

Valpuri Saarinen
President
Finnish Medical Students' Association
University of Tampere

Pyry Tapio
FiMSA-Finland
University of Tampere

Luxemburg:

Pit Braquet
President
ALEM-Luxembourg
University of Paris

Malta:

Becca Fenech
Former National Officer on Medical
Education
MMSA-Malta
University of Malta

France:

Marie Mizzi
ANEMF-France
University of Mérignac

Thomas Tatulli
Vice President on External Affairs
ANEMF-France
University of Toulouse

Netherlands:

Emmaline Brouwer
National Officer on Medical Education
IFMSA-The Netherlands
University of Maastricht

Florence de Man
IFMSA-The Netherlands
Free University of Amsterdam

Germany:

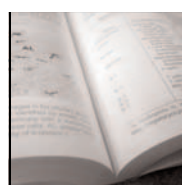
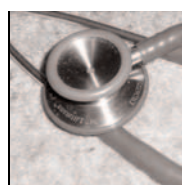
Jan Hilgers
Medical Education Director
International Federation of Medical
Students' Associations
National Officer on Medical Education-
Assistant
BVMD-Germany
University of Cologne

Ulf Krister Hofmann
BVMD-Germany
University of Freiburg

Paul de Roos
Medical Education Director
European Medical Students' Association
IFMSA-The Netherlands
Free University of Amsterdam

Salmaan Sana
Local President
IFMSA-The Netherlands
Free University of Amsterdam

Sybrich Tiemersma
Secretary General
European Medical Students' Association
University of Groningen



Christel van der Donk
Local Officer on Medical Education
IFMSA-The Netherlands
University of Maastricht

Hanneke van der Wijngaart
Local Student Assessor
IFMSA-The Netherlands
Free University of Amsterdam

Norway:

Torstein S. Hansen
Former National Officer on Medical
Education
Norwegian Medical Students' Association
University of Trondheim

Einar Vie Sundal
Board Member Norwegian Medical
Students' Association
Norwegian Medical Students' Association
University of Bergen

Poland:

Pawel Chomicki
EMSA Poland National Co-ordinator
Local President
Medical University of Warsaw

Anna Jablonska
National Officer on Medical Education
IFMSA-Poland
Medical University of Warsaw

Magdalena Restel
EMSA Poland Secretary General
Medical University of Warsaw

Marek Wolski
Medical University of Warsaw

Kornelia Zareba
Local President
IFMSA-Poland
Jagiellonian University Med. College Krakow

Slovenia:

Katja Kovac
Former Medical Education Director
International Federation of Medical
Students' Associations
Former National Officer on Medical
Education
SloMSIC-Slovenia
University of Ljubljana

Matija Svagan
National Officer on Medical Education
SloMSIC-Slovenia
University of Ljubljana

Spain:

Miguel Cainzos Achirica
President
Spanish Medical Students' Council (CEEM)
University of Santiago de Compostela

Iago Garetta
Local President
University of Barcelona

Yevgeniya Pastushenko
Secretary
Spanish Medical Students' Council (CEEM)
University of Zaragoza

Sweden:

Adina Welander
International Relations Officer
Swedish Medical Students' Association
Karolinska Institute

Turkey:

Halit Aytar
President Local Committee
Turkish Medical Students' International
Committee
Ankara University

United Kingdom of Great Britain and Northern Ireland:

Brendan O'Brien
Medical Students' Committee Representative
British Medical Association
University of Cardiff

Amy Crees
University of Bristol

Kate Myall
University of Bristol

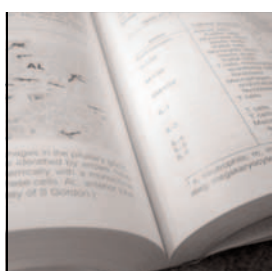
Emma Phillips
University of Bristol

Emily Rigby
European Regional Assistant for Medical
Education
International Federation of Medical
Students' Associations
University of Bristol

Alice Tsai
University of Bristol



- i IFMSA/EMSA (2004), *The Bologna Declaration and Medical Education - A Policy Statement from the Medical Students of Europe*. Megève (France).
- ii IFMSA/EMSA (2005), *Quality Assurance in Medical Schools - Moving from Quality Assurance to Quality Improvement*. Copenhagen (Denmark).
- iii EMS Council (2005), *An Outcome-based Core Curriculum In Patient Safety*. Warsaw (Poland).
- iv World Healthcare Students' Symposium (2005), *Statement of Beliefs*. Qawra (Malta)
- v Institute of Medicine, *Crossing the quality chasm: A new health system for the 21st century*, <http://www.iom.edu/file.asp?id=27184>
- vi Harden, R.M. (2002) *Learning outcomes and instructional objectives: is there a difference?* *Medical Teacher*, 24 (2), pp. 151-155
- vii Harden, R.M. (2002) *Developments in outcome-based education*, *Teacher*, 24 (2), pp. 117-120
- viii Harden R.M., Crosby J.R., Davis M.H. (1999) *AMEE Guide No. 14: Outcome-based education: Part 1 - An introduction to outcome-based education*, *Medical Teacher*, 21 (1), pp. 7-14
- ix Smith S.R., Dollase R. (1999) *AMEE Guide No. 14: Outcome-based education: Part 2 - Planning, implementing and evaluating a competency-based curriculum*, *Medical Teacher*, 21 (1), pp. 15-22
- x Friedman M. (1999) *AMEE Guide No. 14: Outcome-based education: Part 3 - Assessment in outcome-based education*, *Medical Teacher*, 21 (1), pp. 23-25
- xi Ross N., Davies D. (1999) *AMEE Guide No. 14: Outcome-based education: Part 4 - Outcome-based learning and the electronic curriculum at Birmingham Medical School*, *Medical Teacher*, 21 (1), pp. 26-31
- xii Harden R.M., Crosby J.R., Davis M.H., Friedman M. (1999) *AMEE Guide No. 14: Outcome-based education: Part 5 - From competency to meta-competency: a model for the specification of learning outcomes*, *Medical Teacher*, 21 (6), pp. 546-552
- xiii Miller G.E. (1990) *The assessment of clinical skills/competence/performance*, *Academic Medicine*, 65 (Suppl.), pp. S63-S67
- xiv Shumway J.M., Harden R.M. (2003) *AMEE Guide No. 25: The assessment of learning outcomes for the competent and reflective physician*, *Medical Teacher*, 25 (6), pp. 569-584
- xv British Medical Association, Medical Students Committee (2005), *Medicine in the 21st century - Standards for the delivery of undergraduate medical education*, London.
- xvi Frank JR. (Ed). 2005. *The CanMEDS 2005 Physician competency framework. Better standards. Better physicians. Better care*. Ottawa: The Royal College of Physicians and Surgeons of Canada.
- xvii General Medical Council (2003) *Tomorrow's Doctors - Recommendations on Undergraduate Medical Education* (London, GMC)
- xviii Core Committee, Institute for International Medical Education (2002). *Global minimum essential requirements in medical education*. *Medical Teacher*, 24(2), pp130-135.
- xix The Scottish Deans' Medical Curriculum Group (2002). *The Scottish Doctor - learning outcomes for the medical undergraduate in Scotland: A foundation for Competent and reflective practitioners*. *Medical Teacher*, 24(2), pp136-143.
- xx Newble D, Stark P, Bax N, Lawson M, (2005). *Developing an outcome-focused core curriculum*. *Medical Education* 2005; 39: 680-687
- xxi Advanced Life Support Working Group of the European Resuscitation Council (1998). *The 1998 Resuscitation Council guidelines for adult advanced life support*. *BMJ*, Jun 1998; 316: 1863-1869



With thanks to:

