MEDICAL DEGREE COURSE

ANNUAL REPORT

2005-2006

SCHOOL OF HEALTH SCIENCES
UNIVERSITY OF MINHO
Braga
January 2007

Foreword

The present report regards the academic year 2005-06, which was the fifth year of the Medical Degree Course at the University of Minho. The report consists on a circumstanced account of pedagogical activities developed throughout this fifth year, as well as, the results of a critical assessment of such activities, aiming at improving the curriculum and the teaching practices of the Medical Degree Course. (*)

The first two chapters deal with the academic year 2005-06, in what concerns the overall structure of the degree course, the development and functioning of the respective curricular areas (Chapter I) and the self-assessment of the first, second, third, fourth and fifth year experiences (Chapter II). Taking into consideration the results of this assessment, the planning and teaching programme for the academic year 2006-07 is presented in Chapter III.

(*) This Report synthesizes the objectives, methodologies and presents academic staff of the different curricular areas. A detailed description of the learning objectives and of the specific programmes of all the areas and corresponding curricular modules of the Study Plan curriculum is available at the Medical Education Unit (UEM) of the ECS and, on-line, at the intranet of ECS www.ecsaude.uminho.pt. Additionally and for the particular case of the Clinical Residencies that started running for the first time in the academic year 2005-06 – Medicine II Residency, Surgery Residency and Health Centres II Residency – specific reports were compiled with a detailed description the structure, development and functioning of each of the Residencies, as well as of the students' assessment in each of them (Appendixes).

List of Acronyms

ECS – School of Health Sciences

UM – University of Minho

MCQ – Multiple Choice Questions

SOQ – Short Open Questions

HSM – São Marcos Hospital

HSO – Senhora da Oliveira Hospital

UEM – Medical Education Unit

WWW – World Wide Web

COMPLEMENTARY MATERIALS TO THE PRESENT REPORT

Available, on-line, at the intranet of ECS's web page: www.ecsaude.uminho.pt.

- List of individual tutors of the students
- Scheduling for the curricular areas and modules
- Pedagogic materials and detailed learning-teaching methodology for each curricular area
- List of the "Option Projects (I, II, III, IV and V)".
- Vertical Domains: themes, lecturers and external speakers

Available at the UEM of the ECS

- Dossier "Socio-demographic characteristics of the students admitted to the Medical Degree Course in 2005-06", November 2005
- Dossier "Apreciação do Corpo Docente – 2005/06", UEM July 2006
- Dossier "Apreciação do funcionamento das Áreas Curriculares – 2005/06", UEM July 2006

INDEX ***Page***

CHAPTER I STRUCTURE AND FUNCTIONING OF THE DEGREE COURSE IN 2005-06

1.1. Study Plan

The Study Plan of the Medical Degree Course for 2005-06 is set out in Chart I.1. It is essentially the one presented in the 2004-05 Report. Minor changes have been made resulting from the previous year experience and evaluation of the Medical Degree Course.

Chart I.1 Study Plan of Medical Degree Course / 2005-06

Phase	Scientific Area	Curricular Unit	Weeks		Credits
			Curricular	Final Eval.	
I	CSH	Introduction to the Medical Degree Course	4		4.0
	CBB	Molecules and Cells	12	1	24.0
	CBB	Functional and Organic Systems I	12	2	25.0
	SC	Training in a Health Centre	1		1.0
	SC	First Aid	1		1.0
		Option Project I	4		4.0
	CSH	Vertical Domains I	*		1.0
		Final Exams		2	
		Freshman Welcome Week	1		
		1st Year - Total	**40**		**60.0**
	CBB	Functional and Organic Systems II	14	2	25.5
	CBB	Functional and Organic Systems III	14	2	25.5
	CSH+SC	Family, Society and Health	2		2.0
	CSH+SC	Follow up of a Family I	*		2.0
		Option Project II	4		4.0
	CSH	Vertical Domains II	*		1.0
		Final Exams		2	
		2nd Year - Total	**40**		**60.0**
II	P	Biopathology and Introduction to Therapeutics	23	1	42.0
	SC	Introduction to Community Health	5		4.0
	C	Introduction to Clinical Medicine	5	1	7.5
	CSH+SC	Follow up of a Family II	*		1.5
		Option Project III	4		4.0
	CSH	Vertical Domains III	*		1.0
		Final Exams		1	
		3rd Year - Total	**40**		**60.0**
III	SC	Health Centre Residency I	7		10.5
	C	Medicine I Residency	12	1	18.0
	C	Maternal and Child Health Residency	11	1	17.0
	C	Mental Health Residency	4		6.5
	C+P+CBB	From the Clinic to Molecular Biology I	*		3.0
		Option Project IV	4		4.0
	CSH	Vertical Domains IV	*		1.0
		4th Year - Total	**40**		**60.0**
	SC	Health Centre Residency II	7		10.5
	C	Surgery Residency	12	1	18.5
	C	Medicine II Residency	12	1	18.5
	C	Optional Residencies	3		4.5
	C+P+CBB	From the Clinic to Molecular Biology II	*		3.0
		Option Project V	4		4.0
	CSH	Vertical Domains V	*		1.0
		5th Year - Total	**40**		**60.0**
IV	C	Health Centre Residency III	7		10.5
	C	Hospital Residencies	26		39.5
	C+P+CBB	From the Clinic to Molecular Biology III	*		3.0
		Option Project VI	7		7.0
		6th Year – Total	**40**		**60.0**

(*) Organized horizontally, in parallel with the curricular unit running in each module

C- Clinical; CBB- Biological and Biomedical Sciences; CSH- Human and Social Sciences; P- Pathology; SC- Community Health.

1.2. Course Coordination and Monitoring Structures

Coordination worked at the following levels: the Course Director; the Course Committee; the Coordinators of Phases, Areas and Modules; the Coordinators of Scientific Areas; the Scientific Council. The Clinical Coordination Group and the Residency Coordination Groups were the

Committees responsible for coordinating the implementation and development of the clinical areas of the Study Plan.

The lists of the 2005-06 members are presented below.

a) Course Director

- Joaquim Pinto Machado

b) Course Committee

- Joaquim Pinto Machado, Course Director and Coordinator of the area "Vertical Domains"
- Jorge Pedrosa, Coordinator of Phase I (1st and 2nd year)
- Cecília Leão, Coordinator of Phase II (3rd year)
- Nuno Sousa, Coordinator of Phase III (4th and 5th years)
- Manuel João Costa, (Coordinator of the UEM)
- Carlos Valério (Coordinator of Community Health Scientific Area)
- Pedro Morgado (Student, 5th year)
- Carla Marina Gonçalves (Student, 4th year)
- Pedro Miguel Azevedo (Student, 3rd year)
- Fábio André Amaral (Student, 2nd year)
- Diogo de Oliva Malheiro (Student, 1st year)

c) Scientific Council

(all the PhD holders in the faculty)

- Joaquim Pinto Machado, **President**
- Cecília Leão, **Vice-President**
- Adhemar Longatto Filho
- António Megre Eugénio Sarmento
- António Gil Castro
- Armando Almeida
- Fernando Rodrigues
- Isabel Maria Palmeirim
- Joana Palha
- João Carlos Sousa
- João Espregueira-Mendes
- Jorge Correia-Pinto
- Jorge Pedrosa
- Manuel João Costa
- Maria de Fátima Monginho Baltazar
- Nuno Jorge Carvalho Sousa
- Patrícia Maciel
- Paula Ludovico
- Rui Reis

Invited:

- António Jaime Botelho Correia Sousa
- António José Alegre Sarmento
- Carlos Valério
- Fernando Schmitt
- Clara Costa Oliveira
- Pedro Oliveira

Chart I.2. Area and Module Coordinators
1st, 2nd, 3rd, 4th and 5th Curricular Years / 2005-06

Curricular Area - Modules	Coordinator	Status
1st YEAR		
Introduction to the Medical Degree Course	Manuel João Costa	Assist. Prof. (ECS-UM)
Molecules and Cells	Cecília Leão	Full Prof. (ECS-UM)
- From Anatomy to Cellular Physiology	Paula Ludovico	Assist. Prof. (ECS-UM)
- Molecular Genetics Foundations	Fernando Rodrigues	Assist. Prof.(ECS-UM)
- Cells and Cellular Proliferation	Isabel Palmeirim	Assist. Prof. (ECS-UM)
Functional and Organic Systems I (SOF I)	Joana Palha	Assoc. Prof. (ECS-UM)
- General Introduction and Skeletal-Muscular/Skin System	Armando Almeida	Assist. Prof. (ECS-UM)
- Digestive System	Jorge Correia-Pinto	Inv. Assoc. Prof. (ECS-UM)
Training in a Health Centre	António Alegre Sarmento	MD (ECS-UM)
First Aid	Fernando Rodrigues	Assist. Prof. (ECS-UM)
Option Project I	Isabel Palmeirim	Assist. Prof. (ECS-UM)
Vertical Domains I	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (IEP-UM)
2nd YEAR		
Functional and Organic Systems II (SOF II)	Joana Palha	Assoc. Prof. (ECS-UM)
- Circulatory and Respiratory Systems	Jorge Correia-Pinto	Inv. Assoc. Prof. (ECS-UM))
- Urinary System	Armando Almeida	Assist. Prof. (ECS-UM))
- Reproductive System, Growth, Development and Aging	Armando Almeida	Assist. Prof. (ECS-UM)
Functional and Organic Systems III (SOF III)	Joana Palha	Assoc. Prof. (ECS-UM)
- Nervous System	Nuno Sousa	Assoc. Prof. (ECS-UM)
- Endocrine System	Joana Palha	Assoc. Prof. (ECS-UM)
- Synopsis of SOFs	Nuno Sousa	Assoc. Prof. (ECS-UM)
Family, Society and Health	Carlos Valério	MD (ECS-UM)
Follow-up of a Family I	Carlos Valério	MD (ECS-UM)
Option Project II	Armando Almeida	Assist. Prof. (ECS-UM)
Vertical Domains II	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (IEP-UM)
3rd YEAR		
Biopathology and Introduction to Therapeutics	Jorge Pedrosa	Assoc. Prof. (ECS-UM)
- General Pathology and Introduction to Pharmacology	Fernanda Milanezi	Inv. Assist. (ECS-UM)
- Genetics and Environment	Rui Reis	Assist. Prof. (ECS-UM)
- Immunopathology	Jorge Pedrosa	Assoc. Prof. (ECS-UM)
- Infectious Diseases	António Gil Castro	Assist. Prof. (ECS-UM)
- Neoplasia	Fernando Schmitt	Assoc. Prof. (FM-UP)
Introduction to Clinical Medicine	Nuno Sousa	Assoc. Prof. (ECS-UM)
Introduction to Health Community	Carlos Valério	MD (ECS-UM)
Follow-up of a Family II	Carlos Valério	MD (ECS-UM)
Option Project III	António Gil Castro	Assist. Prof. (ECS-UM)
Vertical Domains III	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (IEP-UM)
4th YEAR		
Hospital Residencies	Nuno Sousa	Assoc. Prof. (ECS-UM)
Health Centre Residency I	António Jaime Correia de Sousa	MD/MPH (ECS-UM)
From the Clinic to Molecular Biology I	Cecília Leão	Full Prof. (ECS-UM)
Option Project IV	Patrícia Maciel	Assist. Prof. (ECS-UM)
Vertical Domains IV	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (IEP-ECS)

Chart I.2.(cont.) Area and Module Coordinators
1st, 2nd, 3rd, 4th and 5th Curricular Years / 2005-06

Curricular Area - Modules	**Coordinator**	**Status**
5th YEAR		
Hospital Residencies	Nuno Sousa	Assoc. Prof. (ECS-UM)
Health Centre Residency II	António Jaime Correia de Sousa	MD/MPH (ECS-UM)
From the Clinic to Molecular Biology II	Cecília Leão	Full Prof. (ECS-UM)
Option Project V	Rui Reis	Assist. Prof. (ECS-UM)
Vertical Domains V	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (IEP-ECS)

1.3. Student Academic Orientation

As referred in previous reports, adding to the general counseling offices available at the University of Minho, medical students benefit from support provided by:
- the Medical Education Unit (UEM);
- the individual Tutors.

In what concerns tutorial assistance, each faculty member is responsible for the same students throughout the degree (list of tutors available online at www.ecsaude.uminho.pt).
Tutor-student interactions are based on individual student needs. As tutors essentially:
- provide guidance in study planning;
- monitor student academic and professional evolution.

1.4. Learning–Teaching Methodology

The delivery of the integrated curricular areas, proceeded through active and student centred learning methods often guided by the use of clinical problems/vignettes.
In PHASES I (1st and 2nd years) and II (3rd year) of the course, emphasis was put on "Learning-Teaching by Modules of Objectives" methodology detailed in previous reports. In summary, each of the modules included five phases:

Phase 1 - Presentation and discussion of objectives by students.

Phase 2 - Tutorised self-learning, in which student groups, accompanied by teachers, experience the available pedagogical resources in different environments (laboratorial, tutorial room, library).

Phase 3 - Certification that the main objectives were achieved and identification of learning insufficiencies.

Phase 4 - Tutorised self-learning (practical, individual electronic tutorship's and complementary activities). Individual e-tutorials are another possibility.

Phase 5 - Evaluation of the module; dedicated to the evaluation of skills and cognitive acquisition.

In PHASE III (4th and 5th years) of the course, the "Residency" model, which was inspired in the "Clerkships" model of North American Medical Schools, was adopted. Each Residency comprises two complementary experiences, corresponding to two learning contexts:

- the "Rotations": the supervised skill training in the clinical practice;
- the "Seminars": the learning of concepts and content that underlie the clinical practice.

The two experiences, although necessarily distinct, make use of methods that privilege the active involvement of the undergraduate student. With respect to the Rotations, the learning context is integrally clinical (Hospital or Health Centre). The students, organized in groups, rotate daily (from 9.00 A.M. to 1.00 P.M.) through the pertinent Hospital or Health Centre Departments. Under the supervision of a clinical tutor (the minimum ratio is 1 clinical tutor for each group of 3 or 4 pupils), the students are expected to comply with a duty list that includes: 1) the admission of patients; 2) the observation and taking patients' clinical histories; 3) the full compliance with the items in the corresponding duty lists (validated by the clinical tutors); 4) the observation of the medical activities of the clinical tutor; 5) the participation in Medical Department meetings. For each rotation at the Hospitals, the responsibility for clinical education is shared by Supervisors who set the calendar in accordance with the specific institutional contexts and further designate the tutors and stimulate the adequate involvement of the clinical staff (doctors, nurses and other health professionals). The tutors are responsible for teaching bedside at the run and for validation of student accomplishments in the duty list.

As mentioned above, every Residency has a cognitive program that is addressed in Seminars, which take place in the afternoon at the School of Health Sciences. The active involvement of students is stimulated by the discussion of clinical cases by panels of ECS staff and invited physicians with significant experience on the corresponding topics. Individual response systems - "clicker systems" - are used extensively as a means to generalize student participation in the discussions. The design of the Seminars is under the responsibility of eminent physicians – with a role designated as Moderator – that are responsible for the definition of cognitive program, for the selection of the panel members, for the study materials (including the bibliographies, the presentations and other materials that are deposited in the Intranet of the School) and, finally, for the written evaluations.

1.5. ECS Lecturers and Teaching Distribution

The academic staff and their corresponding teaching areas are presented in 1.7. As in previous years, on average, each faculty devoted about 6 hours/week to presential classes. Curricular activities were, as much as possible, concentrated in one of the semesters, the other one being essentially dedicated to scientific research.

A large number of guest professors also participated in the curricular activities. They have originated from other Schools of the University of Minho and from external Institutions (Universities, Hospitals and Health Centres, among others). Invited faculty presented thematic Seminars and Discussions on relevant issues of their expertise (for more detailed information see 1.7.).

The full composition of the regular teaching staff, as well as their qualifications and scientific area are listed in the 2006 School Report available on-line, at the intranet of ECS's web page: www.ecsaude.uminho.pt.

1.6. Student Profiles in 2005-06 and Retrospective Analysis

The Medical Education Unit compiled information on the applicants and on demographic and generic motivations of the students admitted to the medical undergraduate program in 2005-2006. Data related to admissions were compiled in a report – "Características socio-demográficas dos alunos admitidos em 2005/2006" – available for consultation at the Medical Education Unit. The report comprises information on the following parameters: number of positions and of candidates and profile of the admitted student in what regards the (i) choice priority, (ii) classification at admission, (iii) age and gender, (iv) geographic provenance, (v) personal history in the academy, (vi) literary qualifications of the parents, (vii) professional category of parents and (viii) factors that have had exerted a bigger influence on the choice of this degree. In summary, in the academic year 2005-06:

- there were 1173 applicants for the 60 positions available for the UM Medical Degree Course, a ratio of 20 candidates for each position;
- the highest percentage of students was admitted in their first option (68%) and with a high grade point average (mean: 18.53 on 20);
- all students have declared the intention of remaining in the same degree in the forthcoming academic year and all have in fact remained;
- students were mostly: (i) from the district of Braga and from the Northern regions at the seaside; (ii) female (70%); (iii) descendants of parents whose minimum educational attainment was Higher Education; (iv) selecting this medical program based on the quality of the teaching/learning processes and on the matching of the course to the educational/professional/vocational needs (100%); (v) studying full time.

Globally, the profile of the national students is similar to that of previous cohorts of students. For the first time, the School of Health Sciences also welcomed international undergraduate exchange students. Under an institutional SOCRATES/ERASMUS bilateral agreement two students from the Faculty of Medicine of the University Castilla-La-Mancha (Spain) attended the curricular areas "Biopathology and Introduction to Therapeutics", "Introduction to Community Health" and "Introduction to Clinical Medicine" of the 3rd curricular year. An

incoming student from Brasil enrolled in the 4th year Residency of Medicine I. The two Spanish students completed their program whereas the student from Brasil did not since he returned home before the final integrated examination.

1.7. Development and Functioning of Curricular Areas in 2005-06

The General Scheduling is set out in the ECS web page www.ecsaude.uminho.pt. All areas and modules defined in the study plan for the fifth academic years (Chart I.1.) took place.

The results of the experience of the 1st, 2nd, 3rd and 4th curricular years in 2004-05 were considered by professors and students as very positive. In accordance, the structure of the curricular areas of these four first curricular years was maintained in 2005-06. The alterations introduced were essentially in response to results of the internal evaluation presented in Report 2004-05. A detailed description of the learning objectives and of the specific programmes of all the areas and corresponding curricular modules of the Study Plan curriculum is in a separate binders available at the Medical Education Unit (UEM) of the ECS and, on-line, at the intranet of ECS's web page: www.ecsaude.uminho.pt. Additionally and for the particular case of the Clinical Residencies that started running for the first time in the academic year 2005-06 – Medicine II Residency, Surgery Residency and Health Centres II Residency – specific reports were compiled with a detailed description of the structure, development and functioning of each one of the Residencies, as well as of the students' assessment in each of them (Appendix I).

A synthesis of the general objectives, methodology, students' assessment and teaching staff for the different curricular areas in 2005-06 is presented bellow.

A) 1st Curricular Year

INTRODUCTION TO THE MEDICAL DEGREE COURSE

The curricular area "Introduction to the Medical Degree Course" is the first contact between the University of Minho's Medical Degree Course and the new coming students. The area must be effective in laying the foundations for their learning throughout the degree.

Based on the evaluation of the previous experiences, the structure of the area was not altered in 2005-06.

The area was organized into three integrates "sub-modules" that developed the

- the Medical Degree Course, learning by modules of objectives and introduction to the use of computers;
- basic statistics;
- laboratory practice.

Core bibliography

- AMI – Fundação de Assistência Médica Internacional (1998): Histórias para não adormecer, AMI .

- Bland M. (2000): An Introduction to Medical Statistics. New York, Oxford University Press, 3rd Edition.
- Bonifacino J.S. et al.(2001) : Current Protocols in Cell Biology. New York, John Wiley & Sons, Inc.
- Escola de Ciências da Saúde da Universidade do Minho: O Curso de Medicina da Universidade do Minho www.ecsaude.uminho.pt
- General Medical Council. *Tomorrow's doctors*. London: GMC, 2003. Also available at http://www.gmc-uk.org/med_ed/default.htm .
- Practical Skills in Biomolecular Sciences, Reed, Holmes, Weyers and Jones, Pearson Education Limited, 2003, 2ª Edition.

Methodology and students' assessment

The whole area was developed according to the method of "teaching-learning by modules of objectives".

Students' assessment was based on three cumulative grades:

1. Content – multiple choice test grades of the two final sub-modules, c_2 and c_3, (the last mark contributed 75% to the grade);
2. Practical – a grade computed from the assessment of a written report;
3. Attitudes

The final mark (CA_{ICM}) was computed as follows:

$$CA_{ICM} = [(1/4xc_2 + ¾xc_3)x\ 0.9 + 0.1\ x\ practical)]\ x\ 0.9 + 0.1\ attitudes$$

in which c_2 and c_3 stands for the marks of tests "2" and "3", respectively. 10% of the final mark was defined by a continuous assessment process. Students could benefit from a 10% bonus on this grade, by completing simple tasks along the course with a qualitative grade equal to or higher than "good".

Teaching Staff

Area Coordinator

Manuel João Costa (Assist. Prof. / ECS-UM)

Lecturers

The Medical Degree Course, learning by modules of objectives and introduction to IT

Manuel João Costa (Assist. Prof. / ECS-UM)

Basic statistics

Pedro Oliveira (Assoc. Prof. Agr. / EEng-UM)

Laboratory practicals

Manuel João Costa (Assist. Prof. / ECS-UM)

Raquel Andrade (Post Doc. / ICVS-ECS-UM)

MOLECULES AND CELLS

The duration of the curricular area Molecules and Cells (MCs; 24 ECTS) is 12 weeks. The main purpose of this curricular area is to enable students with the basic knowledge and experimental tools important to the practice of molecular and cellular biology. Based on the results of the internal assessment, the structure of MCs was similar to that of previous academic year. The area was organized in three modules complemented by practical sessions along the area as follows:

- MODULE 1: FROM ANATOMY TO CELLULAR PHISIOLOGY (5 WEEKS)
- MODULE 2: MOLECULAR GENETICS FOUNDATIONS (3 WEEKS)
- MODULE 3: PROLIFERATION, DIFFERENTIATION AND CELL DEATH (4 WEEKS)
- EXPERIMENTAL SESSIONS (THROUGHOUT THE AREA)

The reorganization of the Medical Degree in ECTS resulted in the allocation of one extra week to "Molecules and Cells". Taking into account the breadth of the topics, this week was allocated to module 3 which provided more time to students for self-directed learning and interiorization of the concepts presented.

Similarly to the previous year, there were experimental sessions which developed throughout the area. This horizontal laboratory project targeted the development of student experimental/laboratorial skills and reinforced the crucial importance of laboratorial experimentation in the study of cellular functions.

Methodology

"Teaching-Learning by Modules of Objectives" methodology was applied (see 1.4).

Core bibliography

- Lodish H., Berk A., Zipursky L., Matsudaira P. Baltimore D., Darnell J. (2000) Molecular Cell Biology, Freeman and Company Publishing, 4th Edition.
- Garrett RH & Grisham CM. Ed. Saunders College Publishing, (1995): Molecular Aspects of Cell Biology.
- Nelson, D. L. Worth Publishers (2000): Lehninger Principles of Biochemistry (3rd Edition).
- Stryer, L. W. H. Freeman and Company (1995): Biochemistry (4th Edition).
- Scott F. Gilbert (2004) Developmental Biology, Sinauer Associates, Inc., Publishers (7th Edition).

Students' assessment

Students were evaluated by a cumulative process as presented below. The instruments used were written tests with MCQ and SOQ. In the module exams, only MCQ type questions were used, whereas in the integrated exam the questions included both the MCQ and SOQ types, with the latter essentially targeting integrative aspects of the different modules. In addition, the area implemented a practical examination which was composed stations that required quick demonstrations of laboratory skills and a brief oral examination by each faculty.

"Attitudes" were also assessed. Therefore, the calculation of the cumulative assessment of the area (CA) was obtained through the formula:

$$CA_{area} = 0.9 x f_a x \left(0.6 x \frac{\sum_{i=1}^{3} f_i \times C_{\text{mod}}}{3} + 0.1 x C_{LI} + 0.3 x f_b x C_{area} \right) + 0.1 x f_a x C_{AT}$$

In which

$$f_a = \begin{cases} 1, if\ C_{AT} \geq 10 \\ 0, if\ C_{AT} < 10 \end{cases} \quad f_i = \begin{cases} 1, if\ C_{\text{mod}} \geq 7{,}5 \\ 0, if\ C_{\text{mod}} < 7{,}5 \end{cases} \quad f_b = \begin{cases} 1, if\ C_{area} \geq 7{,}5 \\ 0, if\ C_{area} < 7{,}5 \end{cases}$$

The following items were taken into account:

A. Cognitive evaluation (90 %)

A1. Module evaluation (Cmod)

a. MCQ type questions exam

A2. Experimental evaluation (CLI)

a. Pre-preparation of the experimental procedure
b. Planning the experimental work in group
c. Oral questions in class
d. Oral presentation by the groups of the experimental work to be developed
e. Scientific report
f. Planning of a scientific experiment

A3. Integrated evaluation (Carea)

a. MCQ type questions exam (70%)
b. Practical examination (30%)
   i. Skills assessment
   ii. Problem solution (oral)

B. Attitudes transversal evaluation (Cat ; 10 %)

Teaching Staff

Area Coordinator

Cecília Leão (Full Prof. / ECS-UM)

MODULE 1: FROM CELLULAR ANATOMY TO PHISIOLOGY

Coordinator

Paula Ludovico (Assist. Prof. / ECS-UM)

Lecturers

Cecília Leão (Full Prof. / ECS-UM)

Paula Ludovico (Assist. Prof. / ECS-UM)

Fernando Rodrigues (Assist. Prof. / ECS-UM)

Isabel Palmeirim (Assist. Prof. / ECS-UM)

MODULE 2: MOLECULAR GENETICS FOUNDATIONS

Coordinator

Fernando Rodrigues (Assist. Prof. / ECS-UM)

Lecturers

Fernando Rodrigues (Assist. Prof. / ECS-UM)

Isabel Palmeirim (Assist. Prof. / ECS-UM)

MODULE 3: PROLIFERATION, DIFFERENTIATION AND CELL DEATH

Coordinator

Isabel Palmeirim (Assist. Prof. / ECS-UM)

Lecturers

Isabel Palmeirim (Assist. Prof. / ECS-UM)

Paula Ludovico (Assist. Prof. / ECS-UM)

Cláudio Sunkel (Assoc. Agreg. Prof. / ICBAS-UP)

EXPERIMENTAL SESSIONS

Raquel Andrade (Post Doc / ICVS-ECS)

Ana Mesquita (Researcher / ICVS-ECS)

Agostinho Carvalho (PhD student / ICVS-ECS)

Seminars (includes visiting lecturers)

- Cystic Fibrosis - Carla Moreira (MD / HSM, Braga)
- Mitochondrial Diseases: Biochemical and Molecular diagnosis – Laura Vilarinho (MD, PhD / Instituto de Genética Médica Dr Jacinto Magalhães, Porto)
- Inborn Metabolic Disorders - Almerinda Pereira (MD / HSM, Braga)
- Mitochondria Bioenergetics - Rodrigo Oliveira (Master Student / ICVS-UM)
- Molecular Methods of Diagnosis: Rett Syndrome - Patrícia Maciel (Assist. Prof. / ECS-UM)
- Microarrays - Rui Reis (Assist. Prof. / ECS-UM)
- Genetic Engineering and Research - Fernando Rodrigues (Assist. Prof. / ECS-UM)
- Animal models and experimental techniques in Developmental Biology studies - Isabel Palmeirim (Assist. Prof / ECS-UM).
- Knockout mice - Isabel Palmeirim (Assist. Prof. / ECS-UM).

FUNCTIONAL AND ORGANIC SYSTEMS I

The learning objectives for SOF 1 were not changed from the previous year. However, there was an investment in their reorganization towards improved coordination and integration.

The programmatic contents of each module (as defined in the 2004-05 Annual Report) were selected considering their relevance for clinical medicine.

SOF1 included the following modules:

MODULE 1. GENERAL INTRODUCTION AND THE SKELETAL-MUSCULAR/SKIN SYSTEM (8 weeks).

MODULE 2. DIGESTIVE SYSTEM (4 weeks).

Methodology and bibliography

In this curricular area, the methodology chosen was mainly based on "Teaching-Learning by Modules of Objectives".

The selected bibliography was:

- K. L. Moore e A. F. Dalley. Lippincott, Clinically Oriented Anatomy, Williams & Wilkins, 1999; (4th Edition)
- Snell, RS. Lippincott, Clinical Neuroanatomy for Medical students, Williams & Wilkins, 2001 (6th Edition);
- Abrahams, P.H., Hutchings, R.T., Marks Jr. S.C. McMinn's Colour Atlas of Human Anatomy, Mosby, 1998 (4th Edition);
- Weir, J. and Abrahams P.H., Imaging Atlas of Human Anatomy, Mosby, 1997 (2nd Edition);
- Human Sectional Anatomy: Atlas of Body Sections, CT and MRI Images (2nd Edition);
- Ellis, H., Logan, B., Dixon, A. Butterworth Heinemann, Surface Anatomy: the Anatomical Basis of Clinical Examination, 1999 (2nd Edition);
- Lumley, J.S.P., Physiology, Churchill Livingstone, 1996 (4th Edition);
- Berne, M.B., Levy, M.N., Histologia Básica, Mosby, 1998 (9th Edition);
- Young, B. and Heath, J.W., Langman's Medical Embriology, Churchill Livingstone, 2000 (8th Edition);
- Sadler, T.W. Lippincott, Harper's Biochemistry, Williams & Wilkins, 2000 (25th Edition);
- Murray, R.K., Granner, D.K., Mayes, P.A., Rodwell, V.W., Textbook of Biochemistry with Clinical Correlations, McGraw Hill, 2000 (4th Edition).

Students' assessment

Students were evaluated by a cumulative process resulting from the marks obtained in i) each curricular module, ii) the integrated exam preformed at the end of the curricular area and iii) the assessment of attitudes and behaviours. The written instruments to assess student knowledge included MCQ and SOQ.

Specifically:

i) Module assessment included a theoretical exam (50%) and a practical exam (50%).

The practical exam aimed to assess the skills allocated to each module; the theoretical exam was mainly aimed to assess knowledge and integration of knowledge.

ii) The integrated exam was composed by a theoretical written exam in which the contents of all modules where addressed together. Major emphasis was given to the resolution of "clinical cases". This exam was jointly prepared by members from the different sub-areas.

iii) Attitudes were continuously monitored and an "Attitude evaluation form" was filled for each student at the end of the modules by the respective teaching staff.

In order to calculate the cumulative assessment of the area (CA), the weightings allocated to the marks obtained in the modules, the integrated assessment and the attitude assessment were 0.63, 0.27 and 0.10, respectively. In addition, partial module assessments were given a weight proportional to its duration.

Therefore, the area CA (CA SOFs) was obtained through the formula:

$$CA_{SOFs} = 0.9 \times (0.7 \times \frac{\sum_{i=1}^{n} f_i \times C_{\text{mod}}}{n} + 0.3 \times f_a \times C_{area}) + 0.1 \times C_{attitudes}$$

where,

$$f_i = \begin{cases} 1, if\ C_{\text{mod}} \geq 7.5 \\ 0, if\ C_{\text{mod}} < 7.5 \end{cases} \qquad f_a = \begin{cases} 1, if\ C_{area} \geq 7.5 \\ 0, if\ C_{area} < 7.5 \end{cases}$$

The Teaching Staff

Area Coordinator

Joana Palha (Assoc. Prof. / ECS-UM)

Module Coordinator

MODULE 1. GENERAL INTRODUCTION AND THE SKELETAL-MUSCULAR/SKIN SYSTEM

Joana Palha (Assoc. Prof. / ECS-UM)

Armando Almeida (Assist. Prof. / ECS-UM)

MODULE 2. DIGESTIVE SYSTEM

Jorge Correia-Pinto (Invit. Assoc. Prof. / ECS-UM)

Staff

Nuno Sousa (Assoc. Prof. / ECS-UM)

Joana Palha (Assoc. Prof. / ECS-UM)

Jorge Correia-Pinto (Inv. Assoc. Prof. / ECS-UM)

Armando Almeida (Assist. Prof. / ECS-UM)

Patrícia Maciel (Assist. Prof. / ECS-UM)

João Carlos Sousa (Assist. Prof. / ECS-UM)

João Miguel Bessa (Invit. Assist. / ECS-UM)

Hugo Tavares (Invit. Assist. / ECS-UM)

Mário Oliveira (Invit. Assist. / ECS-UM)

Pedro Leão (Invit. Assist. / ECS-UM)

Manuel Lima Rodrigues (Invit. Assist. / ECS-UM)

Filipa Pinto Ribeiro (Invit. Assist. / ECS-UM)

Leonor Gonçalves (Monitor /ECS-UM)

Maria João Batista (Invit. Assist. / ECS-UM)

Luís Torrão (Invit. Assist. / ECS-UM)

Carla Rolanda (Invit. Assist. / ECS-UM)

Gustavo Melo-Rocha (Invit. Assist. / ECS-UM)

Rui Pedro Bastos (Invit. Assist. / ECS-UM)

João Paulo Fernandes (Invit. Assist. / ECS-UM)

José Mário Roriz (Monitor / ECS-UM)

Seminars (includes visiting lecturers)

MODULE 1

- Human anatomy and its anatomies (Nuno Sousa / ECS-UM)
- Imagiology of the axial skeleton (Nuno Sousa / ECS-UM)
- Development of the skeletal head (Nuno Sousa / ECS-UM)
- Surgical anatomy of the shoulder and elbow (J. Espregueira-Mendes / ECS-UM)
- Surgical anatomy of the hip and knee (J. Espregueira-Mendes / ECS-UM)
- Radiologic anatomy of the appendicular skeleton (R.Sampaio / C.Campos Costa / Private Clinic, Porto)
- Functional anatomy of the apendicular skeleton (Nuno Sousa / ECS-UM)
- Quistic fibrosis (Sebastian Beck / Centro de Genética Clinical)
- Cellular physiology (J. Correia-Pinto / ECS-UM)
- Osteoporosis (J. Soares-Fortunato / FM-UP)
- Physiology of osseous remodelling (J. Cibrão Coutinho / HSM-Braga)
- Calcium regulation of muscle function (J. Correia-Pinto / ECS-UM)
- Muscle-skeletal adaptation to exercise (Josué Pereira / Hospital S. João-Porto)
- Physiopathology of skin aging (Cristina Vasconcelos / HSM-Braga)

MODULE 2

- Clinical anatomy of the oral cavity (João Correia-Pinto / Hospital S. João-Porto)
- Digestive endoscopy. CPRE. (José Cotter / HSO-Guimarães)
- Surgical anatomy of the abdominal cavity. Laparoscopy (Mesquita Rodrigues / HSM-Braga)
- Hepatic and biliary surgery. Hepatic and pancreatic transplants (A. Falcão / HSM-Braga)
- Digestive glands (Armando Almeida / ECS-UM)
- Clinical anatomy of developmental aspects of digestive embryology (J. Correia-Pinto / ECS-UM)
- Gastro-esophagical reflux (José Luís Carvalho / Hospital S. João-Porto)
- Peptic ulcer (Raquel Gonçalves / HSM-Braga).
- Malabsorption bowel syndromes and short bowel (Paula Guerra / Hospital S. João-Porto)
- Inflammatory intestinal disease (Carla Rolanda / ECS-UM / HSM-Braga)

FIRST AID

As in previous years, this curricular area was assured by the "Portuguese Red Cross - Education of First Aid Direction". Assuming the format of a First Aid Course – type “FOR” (First Aid Supporting Course) of the “Cruz Vermelha Portuguesa” - had as central objective the development of the abilities necessary to give the first aid assistance to victims of accident or sudden illness.

The evaluation of the students included an oral-practical exam aiming at to assess student’s knowledge of practical and first aid procedures. The final classification corresponded to the classification gotten from the performance of the each student in this test.

The students who failed are the ones who obtained (i) "inapt" in one of the partial classifications of the subjects related to basic first aid situations, or (ii) two "inapt" in two of the partial classifications related to secondary aid situations.

Teaching Staff

Area Coordinator

Fernando Rodrigues (Assist. Prof. / ECS-UM)

Tutors/Cruz Vermelha Portuguesa

Conceição Horta (Director of the teaching Department / Cruz Vermelha Portuguesa)
Carlos Afonso (Cruz Vermelha Portuguesa)
Mário Fernandes (Cruz Vermelha Portuguesa)
Gabriel Campos (Cruz Vermelha Portuguesa)
Fernando Gonçalves (Cruz Vermelha Portuguesa)

TRAINING IN A HEALTH CENTRE

In the curricular area "Training in a Health Centre", students have for the first time the provision of basic health care, which is considered by ECS of great relevance for the training of a future doctor.

In the curricular year 2005-06, as in the previous year, the training took place at the following Health Centres: Barcelos, Terras de Bouro, Póvoa de Lanhoso, Vieira do Minho, Vila Nova de Famalicão and Vila Verde. Students were visitors at the following services: Administration, Public Health, Social, Nutrition, Psychology, General and Family practice, urgent consultations and Nursing.

The area includes the following objectives:

- to recognize and describe the role, organization and importance of Health Centres as providers of integrated primary health care systems;
- to recognize the scientific, technical, psychological and social characteristics of the several competences of the Health Centres and their inherent difficulties.

Methodology, bibliography and students' assessment

The methodology involved a minimum of theoretical lectures. It consisted on the direct observation by students of the activities running at the Health Centres and, as much as possible and advisable, their participation in these activities. Students rotated through the various services at the Health Centres. The training finished with a general meeting, where experiences and personal commentaries were exchanged and, when necessary, explanations were given.

Each student produced a report with a restricted length that consisted on a commentary to the developed work. The final mark considered the report and a measurement of their participation in the various activities (attendance, interest, behavior).

Teaching Staff

Area Coordinator

António Alegre Sarmento (MD / ECS-UM)

Lecturers

António Alegre Sarmento (MD / ECS-UM)

Margarida Lima (MD / Service Head - Gualtar Health Unit-Braga)

Work Supervisors

Health professionals (medicine, nursing nutrition and psychology) and social service and administratives from Health Centres of Braga.

B) 2nd Curricular Year

FUNCTIONAL AND ORGANIC SYSTEMS II AND III

The alterations previously suggested (2004-05 Annual Report) were considered successful. In accordance, the structures of SOF II and SOF III were maintained and the modules described bellow were included.

SOF II:

MODULE 3. CARDIOVASCULAR AND RESPIRATORY SYSTEM (8 weeks)

MODULE 4. URINARY SYSTEM (3 weeks)

MODULE 5. REPRODUCTIVE SYSTEM, GROWTH, DEVELOPMENT AND AGING (4 weeks)

SOF III:

MODULE 6. NERVOUS SYSTEM (8 weeks)

MODULE 7. ENDOCRINE SYSTEM (4 weeks)

MODULE 9. SYNOPSIS OF SOF (2 weeks)

Methodology and students' assessment

This curricular area adopted the "Teaching-Learning by Modules of Objectives" methodology was. For "Synopsis" the teaching method chosen was "Problem-based learning".

The methodology for students' assessment was the same described for SOF I (above).

Teaching Staff

Area Coordinator

Joana Palha (Assoc. Prof. / ECS-UM)

Module Coordinators

MODULE 3 CARDIOVASCULAR AND RESPIRATORY SYSTEM

Jorge Correia-Pinto (Inv. Assoc. Prof. / ECS-UM)

MODULE 4 URINARY SYSTEM

Armando Almeida (Assist. Prof. / ECS-UM)

MODULE 5 REPRODUCTIVE SYSTEM, GROWTH, DEVELOPMENT AND AGING

Armando Almeida (Assist. Prof. / ECS-UM)

MODULE 6 NERVOUS SYSTEM

Joana Palha (Assoc. Prof. / ECS-UM)

Patrícia Maciel (Assist. Prof. / ECS-UM)

MODULE 7 ENDOCRINE SYSTEM

Joana Palha (Assoc. Prof. / ECS-UM)

MODULE 8 SYNOPSIS OF SOFs

Nuno Sousa (Assoc. Prof. / ECS-UM)

Jorge Correia-Pinto (Inv. Assoc. Prof. / ECS-UM)

Staff

Nuno Sousa (Assoc. Prof. / ECS-UM)

Joana Palha (Assoc. Prof. / ECS-UM)

Jorge Correia-Pinto (Inv. Assoc. Prof. / ECS-UM)

Armando Almeida (Assist. Prof. / ECS-UM)

Patrícia Maciel (Assist. Prof. / ECS-UM)

João Carlos Sousa (Assist. Prof. / ECS-UM)

João Cerqueira (Inv. Assist. / ECS-UM)

José Miguel Pêgo (Inv. Assist. / ECS-UM)

André Carvalho (Inv. Assist. / ECS-UM)

Manuel Lima Rodrigues (Inv. Assist. /ECS-UM)

Leonor Gonçalves (Monitora / ECS-UM)

Maria João Batista (Inv. Assist. / ECS-UM)

Luís Torrão (Inv. Assist. / ECS-UM)

Carla Rolanda (Inv. Assist. / ECS-UM)

Gustavo Melo-Rocha (Inv. Assist. / ECS-UM)

Rui Pedro Bastos (Inv. Assist. / ECS-UM)

João Paulo Fernandes (Inv. Assist. / ECS-UM)

José Mário Roriz (Inv. Assist. / ECS-UM)

Seminars (includes visiting lecturers)

- Anatomoclinical correlations in the urinary system (Joana Santos / HSM-Braga)
- Urogenital embryology (Armando Almeida / ECS-UM)
- Diseases of the metabolism of aminoacids, nucleotids and organic acids (Maria Luís Cardoso / Instituto de Genética Médica Jacinto de Magalhães-Porto)
- Control of urine and neurogenic bladder (Carlos Mariz / Hospital S. João-Porto)
- Biochemical analysis of urine (Tiago Guimarães / FM-UP/Hospital S. João-Porto).
- Reflux nephropathy (Helena Jardim / FM-UP / Hospital S. João-Porto)
- Breast cancer (J.M. Gonçalves / Hospital Pedro Hispano-Matosinhos)
- Radiological anatomy of the reproductive system (R.Machado / Hospital S. João-Porto)
- Clinical anatomy of the male reproductive system. Andrology (Carlos Silva / HSM-Braga)
- Clinical anatomy of the female reproductive system (P.Vieira Castro / HSO-Guimarães)
- Fetal anatomy-ecography and fetal RM (Matos Cruz / HSM-Braga)
- Clinical approach of intersex (Filipa Vasconcelos / Hospital Pedro Hispano-Matosinhos)

- Erectile dysfunction (Estêvão Lima / Hospital S. António-Porto)

- Medically assisted reproduction (Cristina Godinho / HSO-Guimarães)
- Surgical anatomy of the nervous system (Carlos Alegria / HSM-Braga)
- Imagiological anatomy of the central nervous system (Nuno Sousa / ECS-UM)
- Radiculopathies (Paulo Pereira / Hospital S. João-Porto)
- Ethiology of the schizophrenic: genes and environment (Joana Palha / ECS-UM)
- Demyelinating diseases: multiple sclerosis (Maria Edite Rio / Hospital S. João-Porto).
- Epilepsy (João Campos Pereira / Centro Hospitalar do Alto Minho)
- Deafness and its correction (Manuel Lima Rodrigues / ECS-UM / Centro Hospitalar do Alto Minho)
- Central regulation of the autonomous nervous system (Silva Carvalho / Faculty of Medicine - Lisboa)
- Phototransduction: clinical applications (Amândio Rocha-Sousa / FM-UP /Hospital S. João-Porto)
- Morphological alterations associated to endocrine diseases (Nuno Sousa / ECS-UM)
- Disturbances of the thyroid hormones in pregnancy and its consequences to the newborn (Maria José Costeira / HSO-Guimarães)
- Hormone transport to the tissues (Joana Palha / ECS-UM)

FAMILY, SOCIETY AND HEALTH

The purpose of this area is to provide the essential cognitive knowledge for the curricular area "Follow-up of a Family", and the following themes were considered:

- FAMILY AND HEALTH
- FAMILY LIFE
- FAMILY AND SOCIETY
- FAMILY DOCTOR

Methodology

The methodology was as follows:

- interactive presentations;
- group work following lecturer questions;
- presentation of the results, discussion, synthesis, development perspectives and an essay on the running of "Follow up of a Family".

Core bibliography

- Baltes P.B. (1997): On the incomplete architecture of human ontogeny: selection, optimization, and compensation as foundation of developmental theory. Amer. Psychol. 52: 366-380.
- Georg C. and Salomon J. (1999): Attachment and caregiving: The caregiving behavioural system. I : J. Cassidy and P. Shaver (Eds), Handbook of Attachment: Theory, Research and Clinical Applications. New York, The Guilford Press, págs. 649-670.
- Kligman E.W. and Hale F.A. (1998): Clinical prevention. In: Robert B. Taylor (Ed.) Family -Medicine, 5th ed., New York, Springer, págs. 37-55.
- Leandro M.E. (2001): Sociologia da Família nas Sociedades Contemporâneas. Lisboa, Universidade Aberta, págs. 38-46, 68-111 e 277-294.

- Rolland J. (1994): Families, Illness & Disability: An Integrative Treatment Model. New York, Basic Books, cap.4.
- Zimmerman R. K. (1998): Health promotion. In: Robert B. Taylor (Bd). Family Medicine, 5th ed., New York, Springer, págs 56-63.

Students' assessment

For evaluation purposes the students elaborated a written report that included case analysis and personal reflections.

Teaching Staff

Area Coordinator

Carlos Valério (MD / ECS-UM)

Teresa McIntyre (Assoc. Agreg. Prof. / IEP-UM)

Lecturers

Maria Engrácia Leandro (Full Prof. / ICS-UM)

Teresa Macedo (MD / Gualtar Health Unit-Braga)

Margarida Lima (MD/Service Head - Gualtar Health Unit-Braga)

FOLLOW-UP OF A FAMILY I

As referred in previous Annual Reports, in the curricular area "Follow-up a Family" medical students testify the life of a family, how several generation relate within a family and understanding the influence of the family context and of interfering external factors, on the development, fulfilment and well–being – therefore on the health – of each one of its members.

Methodology and bibliography

The families were chosen according to the following criteria:

- enrolment in a Health Centre from Braga and Vila Verde;
- steady couple with an unborn or newborn child;
- absence of serious problems (for example, domestic violence, alcoholism, drugs addiction, psychopathy);
- informed assent.

Preference factors:

- the existence of other children;
- having at least one elderly person living with the family or coexisting with them on a frequent basis.

Clinicians who agreed to participate were informed ("Teachers Script") of the purposes, activities and methodologies of this curricular area and, obviously, about their role as

"Tutors" (supervising a group of four students that visit the families) or as "Coordinating Tutors" (supervise tutors' actions in their Health Centres).
Identical information was given to the students ("Student Script").
Student activities in "Follow-up of a Family":

- periodic visits (on a monthly basis in the 2nd Year);
- meetings with the tutor after every visit (experience exchange, reflection and advisement).

Preceding the first visit every student was introduced to "their" family by the corresponding clinicians.
The communication skills development was made during six and seven workshops, in 2nd and 3rd years, respectively, where observation and recording techniques in the family context were used, as well as thematic videos and practical exercises of interpersonal communication.
Based in those methods, critical reflection and contents integration were promoted, preparing the students for the activities.
The basic cognitive support for this area was provided in the curricular area "Family, Society and Health".

As for workshops, bibliography was:

- Ivey A.(1994): International Interviewing and Counseling: Facilitating. Client Development. 2nd ed. California, Books/Cole Publishing Co.
- Dewey J. and Hall E.T. (1993): Interpersonal Communication. In Deaux K, Dane F.C. and Wrightsman S.(Eds): Social Psycology in the 90´s. California, Brooks/Cole Publishing Co.
- Jandt F.E. (1998): Intercultural Communication. An Introduction. London, Sage Publications.

Students' assessment

The following evaluation items were contemplated: (i) a written paper on the family visits (70% of the final classification); (ii) a written report on the workshops (30% of the final classification).

Teaching Staff

Area Coordinator

Carlos Valério (MD/ECS-UM)
Teresa McIntyre (Assoc. Agreg. Prof. / IEP-UM

Lecturers

Maria Engrácia Leandro (Full Prof. / ICS-UM)
Jorge Silvério (Assist. Prof. /IEP-UM)
Teresa Macedo (MD / Gualtar Health Unit-Braga)

C) 3rd Curricular Year

FOLLOW-UP OF A FAMILY II

The objectives are the ones that had been defined in 2nd year, with increased depth and focusing new questions. The methodology, students' assessment and bibliography were also as described above for Follow-up of a Family I.

Teaching Staff

Area Coordinator

Carlos Valério (MD / ECS-UM)

Teresa McIntyre (Assoc. Agreg. Prof. / IEP-UM

Lecturers

Maria Engrácia Leandro (Full Prof. / ICS-UM)

Jorge Silvério (assist. Prof. / IEP-UM)

Teresa Macedo (MD / Gualtar Health Unit-Braga)

Margarida Lima (MD/Service Head - Gualtar Health Unit-Braga)

BIOPATHOLOGY AND INTRODUCTION TO THERAPEUTICS

In the Study Plan of the Medical Degree Course of the University of Minho, "Biopathology and Introduction to Therapeutics" (BPT) is a curricular area which is a part of Phase II (3rd year) lasting for 24 weeks, which correspond to 45 ECTS.

The general themes in pathology, genetics, immunology, microbiology/parasitology and pharmacology are approached in a coordinated and integrated manner.

In 2005-06, this curricular area was organised into the following modules:

MODULE 1. GENERAL PATHOLOGY AND INTRODUCTION TO PHARMACOLOGY (5 WEEKS)

MODULE 2. GENETIC AND ENVIRONMENTAL PATHOLOGIES (4 WEEKS)

MODULE 3. IMMUNOPATHOLOGY (4 WEEKS)

MODULE 4. INFECTIOUS PATHOLOGY (5 WEEKS)

MODULE 5. NEOPLASIA (4 WEEKS)

Methodology

Following the methodology adopted by the School, in this curricular area, the methodology chosen was mainly based on "Teaching-Learning by Modules of Objectives", structured into thematic modules (4-5 weeks each) developed into 5 sequential phases (see 1.4). In the final phase of the curricular area, one week was devoted to the preparation and discussion of integrative clinical problems, involving learning objectives from the different modules.

Core bibliography

- Basic Pathology: Kumar V, Cotran RS, Stanley L. Robbins Basic Pathology - 7th Edition, WB Saunders Company, 2003.

- Genetics: Turnpenny P, Ellard S. Emery's Elements of Medical Genetics - 12th Edition, Elsevier, 2005.
- Microbiology/Parasitology: Murray PR, Rosenthal KS, Kobayashi GS, Pfaller MA. Medical Microbiology - 4th Edition, Mosby, 2002.
- Immunology: Godsby RA, Kindt TJ, Osborne BA, Kuby J. Immunology - 5th Edition, WH Freeman and Company, 2003.
- Pharmacology: Oswald W, Guimarães S. "Terapêutica Medicamentosa e suas Bases Farmacológicas" – 4th Edition, Porto Editora, 2001.

Students' assessment

Students' assessment was performed by a continuous process, including one exam at the end of each module and a final integrated examination at the end of the curricular area. Module assessment was performed by means of a theoretical exam (50%) and a practical exam (50%). The theoretical exam consisted of MCQ and OQ based on a clinical case. The practical exam included SOQ and MCQ. The overall assessment combined acquisition of knowledge, laboratorial skills and attitudes. Furthermore, the final Integrated Examination consisted of Open Questions, based on integrative clinical cases. Attitudes were continuously monitored and an "attitude evaluation form" was filled in for each student at the end of the modules by the respective teaching staff.

In order to calculate the final mark of the area, the relative weight allocated to module assessment, integrated exam and attitudes were 63 %, 27 % and 10 %, respectively. Each module was given equal weight within the partial mark calculation.

Therefore, the area CA (CA BPT) was obtained through the formula:

$$CA_{BPT} = 0.9 \times (0.7 \times \frac{\sum_{i=1}^{n} f_i \times C_{\text{mod}}}{n} + 0.3 \times f_a \times C_{area}) + 0.1 \times C_{attitudes}$$

where,

$$f_i = \begin{cases} 1, if\ C_{\text{mod}} \geq 7.5 \\ 0, if\ C_{\text{mod}} < 7.5 \end{cases} \qquad f_a = \begin{cases} 1, if\ C_{area} \geq 7.5 \\ 0, if\ C_{area} < 7.5 \end{cases}$$

Teaching Staff

Area Coordinator

Jorge Pedrosa (Assoc. Prof. / ECS-UM)

Fernando Schmitt (Assoc. Prof. / FM-UP)

Modules Coordinators

MODULE 1. GENERAL PATHOLOGY AND INTRODUCTION TO PHARMACOLOGY

Fernanda Milanezi (Inv. Assist. / ECS-UM)

MODULE 2. GENETIC AND ENVIRONMENTAL PATHOLOGIES

Rui Reis (Assist. Prof. / ECS-UM)

MODULE 3. IMMUNOPATHOLOGY

Jorge Pedrosa (Assoc. Prof. / ECS-UM)

MODULE 4. INFECTIOUS PATHOLOGY

António Gil Castro (Assist. Prof. / ECS-UM)

MODULE 5. NEOPLASIA

Fernando Schmitt (Assoc. Prof. / FM-UP)

Lecturers

Adhemar Longatto (Assist. Prof. / ECS-UM)

Ana Horta (Assist. / ECS-UM)

António Gil Castro (Assist. Prof. / ECS-UM)

António Megre Sarmento (Inv. Full Prof. / ECS-UM)

Elisabete Sousa (Inv. Assist. / ECS-UM)

Fátima Baltazar (Assist. Prof. / ECS-UM)

Fernanda Milanezi (Inv. Assist. / ECS-UM)

Fernando Pardal (Inv. Assist. / ECS-UM)

Fernando Schmitt (Assoc. Prof. / FM-UP)

Isabel Mesquita (Inv. Assist. / ECS-UM)

Jorge Pedrosa (Assoc. Prof. / ECS-UM)

Paula Sampaio (Assist. Prof. / EC-UM)

Pedro Monteiro (Inv. Assist. / ECS-UM)

Jorge Pinto Basto (Inv. Assist. / ECS-UM)

Rui Reis (Assist. Prof. / ECS-UM)

Tiago Teixeira (Inv. Assist. / ECS-UM)

Seminars (includes visiting lecturers)

MODULE 1

- Clinical Trials (António Sarmento/ ECS-UM)
- Pharmaceutical preparations and routes of administration (Fátima Baltazar / ECS-UM)
- Cell aging (Vitor Costa / ICBAS-UP)
- Hormones and Hyperplasia (Fernando Schmitt / FM-UP)
- Tuberculosis and chronic inflammation (Jorge Pedrosa / ECS-UM)
- Repair and Cell Regeneration (Fernando Schmitt / FM-UP)
- Shock and Thromboembolism (António Megre Sarmento / ECS-UM)

MODULE 2

- Molecular diagnostic tools (Rui Reis / ECS-UM)
- Populations Genetics (Jorge Rocha / FC-UP)
- Genetic counselling (Jorge Pinto Basto / ECS-UM)
- Obesity (Medina / FM-UP)
- Drug addictions (Amélia Tavares / FM-UP)

- Multifactorial diseases (Jorge Pinto Basto / ECS-UM)
- Immunogenetics: Igs and TCR (Manuel Vilanova / ICBAS)

MODULE 3

- Ontogeny and activation of B Lymphocytes (Manuel Vilanova / ICBAS)
- Immunodeficiencies (Carlos Vasconcelos / Hospital Santo António)
- Activation and regulation of acquired immune responses (António Gil Castro / ECS-UM)
- Haematopoiesis (Alexandra Mota / Hospital Santo António)
- NK Cells (Margarida Lima / Hospital Santo António)
- Asthma (António Megre Sarmento / ECS-UM)
- Systemic autoimmune diseases (Carlos Vasconcelos / Hospital Santo António)
- Bone marrow transplantation (Jorge Campilho / IPO-Porto)

MODULE 4.

- Virus in clinical practice. Introduction (Narciso Oliveira / HSM)
- Respiratory infections (Alexandra Teixeira / HSM)
- HIV (Rui Sarmento / Hospital Joaquim Urbano)
- Atypical pneumonias (José Mariz / HSM)
- Mycoses (Glória Cunha Velho / Hospital Santo António)
- Malaria (Marta Azevedo / HSM)
- Microbial Biodiversity (Cecília Leão / ECS-UM)
- Zoonoses (Ana Horta / ECS-UM)
- Prions (Ana Horta / ECS-UM)
- Vaccines (Jorge Pedrosa / ECS-UM)

MODULE 5.

- Cancer: general concepts (Manuel Sobrinho-Simões / FM-UP e Venância Alves / FM-USP Brasil)
- HPV and female genital tract cancer (Adhemar Longatto / ECS-UM)
- H. pylori and gastric cancer (Fátima Carneiro / FM-UP)
- Fine-needle aspiration cytology (Fernando Schmitt / FM-UP)
- Tumor angiogenesis (Fernando Schmitt / FM-UP)
- Lymphomas and leukaemias (José Cabeçadas / IPO Lisboa)
- Clinical manifestations of malignancies (Luís Costa / FM-UL)
- Conventional therapies in cancer treatment (Luís Costa / FM-UL)

INTRODUCTION TO COMMUNITY HEALTH

The main objective of this area is to provide students with tools and knowledge that will allow them to acquire competences in the field of Community Health, training them to operate in order to improve the health level of populations.

Regarding the education plan, the themes in this area will be further developed and applied in the "Health Centre Residencies" in the 4th, 5th and 6th years.

The area is organized in a single module that includes the following themes: (i) health, disease and handicap; (ii) health systems; (iii) health economy/ management; (iv) quality in

health; (v) basic demography; (vi) epidemiology; (vii) basic biostatistics and its use in epidemiology.

Methodology and bibliography

"Teaching-Learning by Modules of Objectives" methodology was applied, in which each module includes the development of five different phases, including the one dedicated to evaluation (see 1.4). In addition, external and internal practical lessons and seminars were included.

The practical lessons were developed in Phase 2, in a tutored environment and consisted of practical problem solving, epidemiological cases simulated or adapted, applied biostatistics exercises, health management and quality exercises.

Students' assessment

The evaluation of students included:

- written exam (MCQ and SOQ) – (70%);
- poster: production of a poster on a free theme of health education / promotion in groups of 6 students – (20%);
- attitudes and behavior: (10%).

Teaching Staff

Area Coordinator

Carlos Valério (MD/ECS-UM)

Lecturers

Carlos Valério (MD / ECS-UM)
António Alegre Sarmento (MD / ECS-UM)
Mário Freitas (MD / ECS-UM)

Seminars (includes visiting lecturers)

- Health promotion (Vera Soares / IEP-UM)
- Community nutrition (Sandra Lourenço / Centro de Saúde de Braga)
- The evolution of health systems (Constantino Sakellarides / ENSP-UNL)
- General and family medicine (Jaime C. Sousa / ECS-UM and Unidade Local Saúde - Matosinhos)
- Public health (Maciel Barbosa / ARS-Norte – Braga)
- Health determinants (Emília Nunes / Direcção Geral da Saúde)
- Prevention in Public Health (Maciel Barbosa / ARS-Norte – Braga)
- The cost of Health (Jorge Simões)
- Enviromewntal health (Olga Mayan)
- Ocupational Health (Sousa Uva)
- ONSA (Portuguese National Health Observatory) (Marinho Falcão / Instituto Nacional de Saúde Dr.Ricardo Jorge - Lisboa)

Lectures

- Health systems: regression or transformation? (Constantino Sakellarides /ENSP-UNL)
- The flu pandemics: a handful of fears and uncertainties (Marinho Falcão / Instituto Nacional de Saúde Dr. Ricardo Jorge - Lisboa)

INTRODUCTION TO CLINICAL MEDICINE

As it was stated in previous Reports, the curricular area "Introduction to Clinical Medicine" focused mainly on the anthropology of the relationship physician-patient and its development when questioning, examining and monitoring the patient's condition, the latter constituting the key elements of the "Clinical Method". Such methodology involved the acquisition of cognitive skills but, as often as possible, anchored in the reality of direct contact with the patients.

As it was carried out in Hospital settings, the subject "Introduction to Clinical Medicine" provided the students with the knowledge and the understanding of the reality of hospital (its functions, organization, management, costs and problems) as well as its daily routines, with special emphasis on the work of the Medical Doctors, their relationships with other health professionals and the condition of the living-in patients.

Students' assessment

The final classification is the result of:

- attitude evaluation;
- task execution evaluation;
- final exam (mainly multiple choice questions).

Student final classification was the arithmetic average of the above three components. To approve the individual marks had to be resistive in every components.

Teaching Staff

Area Coordinators

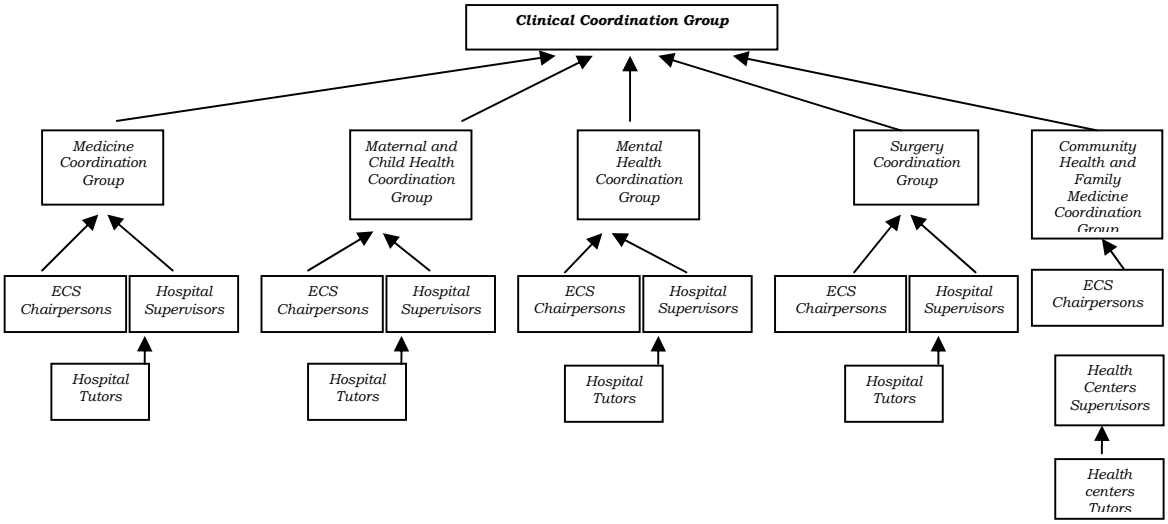
Joaquim Pinto Machado (Full Prof. / ECS-UM)
Nuno Sousa (Assoc. Prof. / ECS-UM)
Mário Cerqueira Gomes (Inv. Full Prof. / ECS-UM)
Óscar Rolão Candeias (MD / Hospital Director of Internal Medicine / ECS-UM)
Damião Cunha (MD, PhD / Hospital Director Cardiology /ECS-UM)
Abel Rua (MD / Hospital Director of Internal Medicine / HSM)
Jorge Cotter (MD / Hospital Director of Internal Medicine / HSO)
Sousa Basto (MD / Hospital Director of Dermatology/ HSM)

D) 4th and 5th Curricular Years

CLINICAL RESIDENCIES

"Organization of Clinical Learning: Coordination Strategies"

As stated in previous reports, the learning settings for the Phase III and Phase IV of the Medical Degree Course are multicentric and dependent on complex coordinating network, as shown in the diagram bellow.



The coordination works at the following levels: the Clinical Coordination Group; the Residency Coordination Groups (one for each of the Residencies); Hospital (Residency) Supervisors; Chairpersons responsible for the cognitive teaching modules within each Residency.

The mission and composition, as well as, the lists of the members of these Coordinating Groups are detailed in the Annual Report/2006 of the School.

HOSPITAL RESIDENCIES

The objectives and the implementation strategy obeyed to that referred in the previous Report.

In 2005-06 the Hospital Residencies that had their first edition were the following:

- RESIDENCY OF MEDICINE II
- RESIDENCY OF SURGERY
- OPTIONAL RESIDENCIES
- HEALTH CENTRE RESIDENCIES II

The corresponding activity detailed Reports are presented in Appendixes.

Teaching Staff, Clinic Supervisors and Tutors

See ECS Report – 2006

OPTIONAL RESIDENCIES

The main objective of Optional Residencies is to deliver formative clinical experiences complementary to the core residency programme. Students select a Residency from a set of options listed by the School of Health Sciences. They consist either on basic clinical training at the bedside and may take place in Services which are not contemplated on the core Residency Program or in complementary training in Services contemplated in the core Residency Programme.

Organization of the area

1. The Optional Residences were divided in 2 periods (P1 and P2) of 5 working days:
    a. P1: 3, 4, 5, 10, 11 and 12 of April of 2006.
    b. P2: 19, 20, 21, 24, 26 and 27 of April of 2006.
2. There was a minimum of 24-hour of clinical training.
3. Students were allowed to choose the same service for the 2 periods.

Scheduling

The schedule is defined by the supervisor at the service, in accordance to the rules defined above.

Options in 2005-06

1. The School of Health Sciences compiled a list of electives with a total of 67 and 63 training options, respectively for P1 and P2.
2. The list was presented to the students by the Area coordinator in a class meeting.
3. Students were given two weeks to decide.

Ranking and Placements

Students were ranked according to the average numerical grade at the end of the 4th curricular year, as calculated by the central academic services of the University of Minho. In a general class meeting, students selected from the option list according to their position in the ranking.

Students' assessment

The classification of this curricular area corresponds to a mark attributed by the supervisor at the service. The mark originates from a grate of evaluation especially created for the effect, composed of 4 parameters:

i. Professionalism (integrity, interpersonal relations, empathy, initiative, commitment) - 3 /20 values.
ii. Problem solving - (identification and proper dealing with problems in practice) - 7 /20 values.
iii. Clinical competence (performance) - 5/20 values.
iv. Knowledge and its use (recall and application of knowledge, synthesis) 5/20 values.

HEALTH CENTRE RESIDENCIES

These residencies were carried out in urban and rural Health Centres and in Public Health Operative Units (PHOU), located in the geographical areas of Braga, Guimarães and neighbouring administrative districts.

Students participated in health teams (one or two per team) tutored by Family Physicians (General Practitioners); personnel from different areas with varied skills and expertise, like nurses, social workers, nutritionists, psychologists, secretaries, and other staff were involved in the team/ teaching work. In the Public Health Units (PHOU), students were tutored by Public Health doctors, with the participation of environmental health and other technicians.

Teaching / learning was based on scripts (handouts) structured as "*Handbooks for guidance and recording*"; its aims were organised according to the level of knowledge, skills and attitudes that represent the student competence acquisition when he/she finishes the residency, namely "*Primary care knowledge*", "*Clinical knowledge and skills*" and "*Attitudes*". The handbook contains charts and assessment tables.

The activities performed by students had mostly a practical feature, including clinical and non-clinical activities, always under tutor's pedagogical guidance.

The detailed Report of the Health Centre Residencies II that started running for the first time in the academic year 2005-06, is presented in Appendixes.

Core bibliography

- Cecil G. Helman (2001). Culture, health and Illness, Butterworth Heinemann (4th edition).
- Ian R. McWhinney (1997). A textbook of Family Medicine. Oxford University Press, (2nd edition).
- World Organization of Family Doctors (WONCA) (2002). European definition of Family and General Medicine
http://www.woncaeurope.org/Web%20documents/European%20Definition%20of%20family%20medicine/European%20Definition%20in%20Portuguese.pdf (last access, March 2007)
- Family Medicine Principles and Practice (2003). Edited by Robert B. Taylor, Alan K. David, Thomas A. Johnson, Jr., D. Melessa Phillips, and Joseph E. Scherger, New York: Springer Verlag (6th edition).
- Martin Zurro A, Cano Perez JF (2003). Atencion primária. Concepto, Organizacion y Práctica Clínica. Madrid: Harcourt Brace (5ª Edição)
- Robin C Fraser (editor) (1999). Clinical Method - a general practice approach. Butterworths-Heinemann, 3rd Edition.
- Programa de Actividade preventivas y promocion da la Salud (PAPPS). Actualizacion 2001. Atencion Primaria 2001; 28 (supl 2, Noviembre).

Teaching Staff

Area Coordinator

António Jaime Correia Sousa (General Clinic Assist.–MPH/Local Health Unit - Matosinhos)

Clinic Coordination Group

As the Hospital Residencies (see ECS Report – 2006)

Community Health and Family Health Coordination Group

Carlos Valério (MD / ECS-UM)

António Jaime Correia Sousa (General Clinic Assist.–MPH/Local Health Unit - Matosinhos)

António Alegre Sarmento (MD / ECS-UM)

Ana Mateus (MD / General Clinic Assist. – Local Health Unit/Matosinhos)

Luís Laranjeiro (MD / Head of General Clinic Service/Guimarães Health Centre)

Margarida Lima (MD / Head of General Clinic Service/Gualtar Health Unit)

Mário Freitas (MD / ECS-UM)

Staff

Ana Almeida, Ana Mateus, Clara Barros Fonseca, Luís Laranjeiro, Margarida Lima, Maria José Ribas, Teresa Nunes

Clinical Supervisors and Tutors

Listed in the ECS Report - 2006

FROM CLINIC TO MOLECULAR BIOLOGY

In the curriculum of the Medical Degree course, the curricular area "From the Clinic to Molecular Biology" is included in PHASES III and IV (4th, 5th and 6th years). In this curricular area, the critical discussion and learning of new and emergent subjects on biomedical research is encouraged contributing to the formation of a new generation of physicians/researchers. The teaching/learning methodology focused on thematic discussions national and international experts on those themes.

In 2005-06, for each academic year (4th and 5th) three thematic conference cycles, each one with the duration of three days, were organized as follows.

Seminars

4th curricular year

1st Cycle: 10 and 11 of November, 2005

Theme: "Molecular cardiology"

ECS Supervisor: Isabel Palmeirim

Visiting Lecturer: Prof. Paulo Bettencourt (FM-UP and Serviço de Medicina Interna do Hospital de S. João, Porto)

2nd Cycle: 2 and 3 of February, 2005

Theme: "Schizophrenia: From Geographic maps to genetic maps"

ECS Supervisor: Joana Palha

Visiting Lecturer: Ann Goodman (Statistical Sciences and Epidemiology Division, Nathan S. Kline Institute for Psychiatric Research, Orangeburg)

3rd Cycle: 1 and 2 of June, 2005

Theme: "From Biology to Haematological Clinic"
ECS Supervisor: Jorge Pedrosa
Visiting Lecturer: Margarida Carvalho Lima (Serviço de Hematologia Clínica, Unidade de Citometria, Hospital Geral de Santo António, Porto)

5th curricular year

1st Cycle: 24 and 25 of November, 2005
Theme: "Paediatrics Surgery"
ECS Supervisor: Jorge Correia-Pinto
Visiting Lecturer: Juan Tovar (Cirurgia Pediátrica, Hospital Universitário "La Paz", Madrid)
2nd Cycle: 6 and 7 of April, 2005
Theme: "Molecular Pathology and Nefropathology"
ECS Supervisor: Fernando Schmitt (FM-UP)
Visiting Lecturer: Marcello Franco (Departamento de Patologia, Escola Paulista de Medicina, Universidade Federal de São Paulo, Brasil)
3rd Cycle: 22 and 23 of June, 2005
Theme: "The Medicine waiting for you"
ECS Supervisor: Isabel Palmeirim
Visiting Lecturer: Leonor Parreira (FM-UL, Lisboa)

Methodology and students' assessment

Biomedical scientific research papers were given to the students to support the following activities:

- Student presentations and discussion of scientific papers. For each theme, the selected paper was part of the work under development in the research group of the invited speaker. An active student participation in discussions was encouraged involving the teaching staff from our School of Health Sciences and the invited speaker.
- Seminars and lectures given by the invited speaker.

The students' assessment included:

1. Partial assessment (seminary cycles, C1)
   - Assiduity
2. Integrated evaluation (C2)
   - Presentation and discussion of scientific papers by groups of students (3-4 students per group)
3. Final area evaluation (C_{DCBM})

$C_{DCBM} = 0.25 \times C1 + 0.75 \times C2$

Area Coordinators

Cecília Leão (Full Prof. / ECS-UM)
Jorge Pedrosa (Asssoc. Prof. / ECS-UM)

Joana Palha (Assoc. Prof. / ECS-UM)

Isabel Palmeirim (Assist. Prof. / ECS-UM)
Jorge Correia-Pinto (Inv. Assoc. Prof. / ECS-UM)
Fernando Schmitt (Assist. Prof. / FM-UP)

E) 1st, 2nd, 3rd, 4th and 5th Curricular Years

OPTION PROJECTS I, II, III, IV and V

The study plan of the Medical Degree, contemplates "Option Projects" (Option Project I, II, III, IV, V and VI) from the 1st to the 6th year of the course. Each Option Project is based on individual work freely chosen by the student.

The total freedom and flexibility in the selection of a subject for the Option Project by the students for the 4 weeks (3 weeks for the practice + 1 week to prepare the final report and the 10 minute oral presentation] allowed them to choose a subject that can usually be included in one of the following main activities: (1) observation of the activity within a medical unit or speciality, in a medical department of a private or public Institution, (2) preparation of an updated revision on a wise and up-to-date medical subject; (3) knowledge of the current reality of health-related institutions (function, management and interaction with society), (4) analysis of the operation of social Institutions oriented for the assistance to people in need (example: Institutions that attend, treat and assist handicapped people or Institutes for the assistance to drug addicts or to victims of domestic violence] 5) to develop a research plan and undertake it in a laboratorial institution; 6) to develop an epidemiological study; 7) to know the reality of diverse treatment approaches, namely those developed by complementary medicine.

The geographical locations of the projects were distributed mainly in the north of Portugal, with some exceptions, such as one student who undertook her project in Lisbon and three students who led their projects in Mozambique.

The thematic and geographical distribution of the Optional Projects (I, II, III, IV and V) performed by students in 2006, as well as the respective work themes and Supervisors are available on ECS site - http://www.ecsaude.uminho.pt.

Methodology and students' assessment

The organization of the optional projects implies multiple contacts between the area coordinator and the students.

At the end of the option project each student handed in a written report and prepared an oral presentation of his/her work (10 minutes), presented to the other students of the course and to the Teaching Staff of the school, followed by a general discussion (5 minutes). For this effect, an "Internal Conference of the Medicine Course" was organized and took place at the Health Science School on July 2006.

The assessment was performed according to rules previously established for the Option Projects. It follows a summary of the students' assessment in 2005-06.

1 - Supervisor Evaluation

9/20 (scale / 45 % of the final classification).

2 - Oral Presentation and discussion

4/20 (scale / 20 % of the final classification).

3 - Written Report

5/20 (scale / 25 % of the final classification).

- Attitudes

2/20 (scale / 10% of the final classification).

Teaching Staff

Area coordinators

Option Project I – Isabel Palmeirim (Assist. Prof. / ECS-UM)
Fernando Rodrigues (Assist. Prof. / ECS-UM)
Paula Ludovico (Assist. Prof. / ECS-UM)

Option Project II – Armando Almeida (Assist. Prof. / ECS-UM)

Option Project III – António Gil Castro (Assist. Prof. / ECS-UM)

Option Project IV – Patricia Maciel (Assist. Prof. / ECS-UM)

Option Project V – Rui Reis (Assist. Prof. / ECS-UM)

External Supervisors

Available on ECS Internet page – http://www.ecsaude.uminho.pt

VERTICAL DOMAINS: "TO FEEL THE PULSE TO LIFE"

The main objectives of the curricular area "To Feel the Pulse to Life", integrating "Vertical Domains" and contemplated from the 1st to the 5th year of the course, were stated in previous Annual Report and relate to science, philosophy, ethics, law, history, literature, art and religion. The outcomes of the area emphasize the personal development of the undergraduate students, nurturing their will and capabilities to use their attributes to serve their future patients and communities. The verticality along the curriculum proportionates integration in context of other curricular areas, of the domains which are explored and also of dimensions that belong to their daily lives, while human beings participating in their communities of affections, leisure and commitments. A list of the domains that are explored is composed of Philosophy, Anthropology, Ethics, Law, History, Literature, Arts, Religion, "Cases of the month" (the positive or negative aspects of daily news, which deserve analysis and reflection), "Blanket of rags" (pieces of fiction texts, poems, musical and digital compositions suggested by students) and "A personal confession" (a live interview of the class to individuals whom, by different reasons, are worthwhile to know, to question and discuss).

The area produces also the "literary monthly menus". Having has leitmotif Literature, they are a pretext to stimulate the sensitivity and the reflection of all the persons committed to medical degree course of University of Minho. These menus have four parts: it begins with "Starters" (short thoughts), followed by "the main dish" (a piece of a literary book), and by a "Desert" (a poem); it ends with some sentences about "learn to live". These "literary monthly menus" are monthly sent (except in August and September) by email to all students, teachers, researchers and other workers of the School.

Methodology, students' assessment and bibliography

The methodology depended on the questions and goals under consideration but there was always student active participation. Probably the high point of this methodology was the sessions "Poetry declamation/construction" (2nd year).

In what concerns the assessment of this area, the student learning assessment focused only in the student assiduity.

From the bibliography concerning the domains of "Science", "Ethics" and "History of Medicine", we emphasize:

- Santos S.M. (2002): Universidade do Minho – missão a revisitar? FORUM 31:29-62.
- Cervo A.L. e Bervian P.A. (1983): Metodologia Científica (3ª Edition). S. Paulo. McGraw-Hill.
- www.almaz.com/nobel /medicina.
- Evans M., Louhiala P. and Puustinen R. (2004): Philosophy for Medicine. Applications in a Clinical Context. Radcliffe Medical Press, Oxford - S. Francisco.
- Mounier E. (2005): O Personalismo. Ariadne, Coimbra.
- Fox E., Arnold R.M. and Brody B. (1995): Medical Ethics Education: Past, Present and Future. Academic Medicine 70:761-769.
- Archer L., Biscaia J., Osswald W., Renaud M.(Coords.) (2001): Novos Desafios à Bioética. Porto Editora, Porto.
- Lain Entralgo P. (2002): O que é o Homem. Editorial Notícias, Lisboa.
- Sournia J. – Ch. (1995): História da Medicina. Instituto Piaget, Lisboa.

Materials prepared for individual sessions, available in the intranet of ECS.

Teaching Staff

Area Coordinator

Joaquim Pinto Machado (Full Prof. / ECS-UM)

Clara Costa Oliveira (Assist. Prof. / IEP-UM)

Themes, lecturers and external speakers

Available on ECS site - http://www.ecsaude.uminho.pt)

CHAPTER II SELF-ASSESSMENT OF THE ACADEMIC YEAR 2005-06

This Chapter concerns the functioning of the curricular areas in the present year. It includes a synthesis of the thorough and retrospective analysis of the yearly monitoring of the courses by the Medical Education Unit (available for consultation), self assessment of the areas and the considerations that emanated from were discussed in the "Scientific Council Reflection Days"

2.1. Student Performance

The analysis presented below is a synthesis of the student academic performance in 2005-06 for all the curricular years, which is also compared to previous editions. The detailed description is included in the specific files that are available on UEM and online on www.ecsaude.uminho.pt

First year students

The approval rates were of 100% in four areas: "Introduction to the Medical Degree", "Molecules and Cells", "Training in a Health Center" and "Option Project I". The area "Organic and Functional Systems I" had an attrition of 5% - identical to the previous academic year - and the lowest of the mean classifications (12 values). For the remaining areas, means correspond ranges of Good, Very Good or Excellent, thus suggesting an adequate adaptation of the new students to the School.

Second year students

The approval rates for the 2nd curricular year were 100% in all the areas. As to the mean classifications, they are relatively heterogeneous, the highest corresponding to the areas with the lowest number of ECTS: "Family, Society and Health", "Follow up of the Family I", "Option Project II" and "Vertical Domains II" (with means equal or higher than 16 values), respectively with 13, 68, 42 and 65% in the range of excellent. The mean classifications in the areas with more ECTS - Organic and Functional Systems II and III - were of 13 and 14 values. An analysis of the evolution of the classifications relatively to the previous year does not disclose significant alterations. Globally, the results suggest an adequate functioning of the 2nd year of the study plan.

Third year students

Approval rates were equal to or higher than 98% for all the areas, with mean classifications in the ranges of Good, Very Good or Excellent. In this respect, the 2% of failure rate in "Option Projects II" correspond to one student who, despite having signed in to take the area at the start of the academic year, did not attend the area. The values for the curricular areas with five or less credit units were the highest. Three areas had significant percentages of students with excellent grades - Option Project III (64%), Follow up of a Family II (53%) e Vertical Domains III (70%). The lowest grade range was registered in "Introduction to Clinical Medicine"

in which the percentage of students classified higher than "Good" did not exceed 6%. Globally, the results are suggestive of an adequate functioning of the corresponding edition of the third curricular year.

Fourth year students

The rates of approval were of 100% in all the curricular areas and the means were also very positive - comprehended between 15 – the cases of the "Medicine I" and "Maternal-Infantil" Residencies - and 18 values ("Option Project IV"). Student performance in the areas "From the Clinic to Molecular Biology I", "Option Projects IV" and "Vertical Domains IV" are worth noticing, since, respectively, 44, 65 and 57% were within the range of excellent. In the remaining areas of 4th curricular year, two types of distribution can be recognized: one for the Residences of "Mental Health" and "Health Centres I" - classifications were within the ranges of Good, Very Good or Excellent; another for the "Medicine I" and "Maternal-Infantil" residences, in which some students were classified as Fair and none as Excellent. An analysis of the evolution of the classifications of the different curricular areas relatively to the previous edition does not disclose drastic alterations in the means, even though some have decreased – the cases of "Vertical Domains IV", "Maternal Child" and "Health Centre" residencies. The most evident evolutions refer to the alteration in the distribution of classifications in the area "Health Center Residency" - where the biggest frequency of classifications evolved from Excellent to Very Good - and in "Vertical line Domains IV" – with wider distribution range.

Fifth year students

This was the first experience of functioning of the 5th curricular year. The results are quite positive. The rates of approval were 100% in all the areas and values of the means of the classifications were comprehended between 15 values - residences of "Surgery" and "Medicine II" - and 19 values - "Vertical Domains V" and "Option Project V". In what respects to the classifications within each area, there were various students with performances in the level of Excellent in the areas "Optional Residencies", "From Clinic to Molecular Biology II", "Option Project V" and "Vertical line Domains V"- respectively, 40, 42, 94 and 76%. The widest grade distributions were observed for the Residencies of Surgery and of Medicine II. As a conclusion, this was a successful first experience with the 5th curricular Year in ECS.

Attitudes

An evaluation of student attitudes in Phases I and II of the degree – which represents 10% of the final grade – is performed systematically, with forms developed for that purpose. It contemplates the following aspects: 1) assiduity; 2) behaviour; 3) participation. Classifications of the three curricular years have different patterns of distribution, with means converging to 15 and 16 values, similarly to previous years.

2.2. Student Ratings: Results from Questionnaires

In 2005-06 all curricular areas and ECS staff faculty members were rated by students. This was done with renovated questionnaires, in order to increase the coherence of the monitoring of the functioning of the course. The new questionnaires were designed by an ADHOC Commission nominated by the Scientific Council of the ECS in October 2005. The reformulated questionnaires, which were approved by the Scientific Council in February of 2006, replaced the existing instruments immediately after.

The new questionnaires made possible answers in a scale with 7 (seven) positions: ① I completely disagree; ② I strongly disagree; ③ I disagree; ④ I agree; ⑤ I strongly agree; ⑥ I completely agree; ⓪ I have no opinion. The total percentage of students who marked their answers on the 3 positions of agreement - ④ or ⑤ or ⑥ - were calculated. The computation and interpretation of the results was developed by the Medical Education Unit, which issued the corresponding rating reports, with three different templates: 1) forms on the appreciation of the functioning of the curricular areas; 2) forms on the global appreciation of the Faculty associated to each curricular area; 3) forms on the individual appreciation of faculty. The former two are made public whereas the latter is confidential and known only to the individual professor, to the area coordinator and to the Presidency of the ECS.

Below is a summary of the most relevant aspects of the reports issued by the UEM on global appreciation of faculty - "Apreciação da actividade docente" – and of the curricular areas - "Apreciação do funcionamento das áreas curriculares". For ratings on faculty of the areas of the 5th curricular year – the residencies in Internal Medicine II, Surgery and Health Centers II- which had their first edition in 2005-06, please refer to the corresponding individual reports (Appendixes).

2.2.1. Perceptions of Students about the Teachers

Molecules and Cells

Students rated Faculty as "very good". The majority (percentages equal to or higher than 89%) is in agreement with every item of the questionnaire. The option "completely agree" was selected for all the answers by a minimum of 40% of the students. The percentages of agreement are comprehended between 89% - "Gives orientations to direct my learning development" and "Stimulates and promotes critical reflections " – and 95% - "Is knowledgeable for the concepts and the phenomena implied in the distinct objectives ".

Organic and Functional Systems I

Students rated Faculty as "very good". The majority (percentages equal to or higher than 90%) is in agreement with every item of the questionnaire. The option "completely agree" was selected for all the answers by a minimum of 31% of the students. The percentages of agreement are comprehended between 91% - "Motivates me to reach the considered objectives"

– and 95% - “Is knowledgeable for the concepts and the phenomena implied in the distinct objectives and “Is an excellent professor”.

Organic and Functional Systems II

Students rated Faculty as “very good”. The majority (percentages equal to or higher than 83%) is in agreement with every item of the questionnaire. The percentages of agreement are comprehended between 83% - “Stimulates and promotes critical thinking” – and 92% - “Is knowledgeable for the concepts and the phenomena implied in the distinct objectives”.

Organic and Functional Systems III

Students rated Faculty as “very good”. The majority (percentages equal to or higher than 83%) is in agreement with every item of the questionnaire. The percentages of agreement are comprehended between 87% - “Stimulates and promotes critical thinking” and “Respects the timetable of the programmed activities“– and 94% - “Is knowledgeable for the concepts and the phenomena implied in the distinct objectives”.

Biopathology and Introduction to Therapeutics

Students rated Faculty as “very good”. The majority (percentages equal to or higher than 93%) is in agreement with every item of the questionnaire. The percentages of agreement are comprehended between 93% - “Motivates me to reach the considered objectives” – and 98% - “Is knowledgeable for the concepts and the phenomena implied in the distinct objectives”.

Introduction to Community Health

Students rated Faculty as “very good”. The majority (percentages equal to or higher than 80%) is in agreement with every item of the questionnaire. The percentages of agreement are comprehended between 80% - “Gives orientations to direct my learning development” – and 99% - “Respects the timetable of the programmed activities “.

Introduction to Clinical Medicine

Student rated their individual tutors in Introduction to Clinical Medicine of both of the affiliated hospitals very positively (92% qualified as “excellent tutors”). The majority (percentages equal to or higher than 83%) is in agreement with every item of the questionnaire. The percentages of agreement are comprehended between 83% - “The tutor was effective in helping me perform clinical procedures “– e 98% - “I was stimulated to share my ideas, knowledge and doubts” and “What I’ve learned in this service was useful”. 92% of the students declared to have been adequately supported and supervised. In summary, the data suggest that the performance of the individual tutors had quality.

Optional Residencies

Student ratings were gathered with the questionnaire applied in Introduction to Clinical Medicine (see above). Students rated their tutors very positively (94% qualify as "excellent tutors"). Students unanimously recognize the clinical competence of their tutors and the vast majority (87%) declares to have been adequately supervised.

2.2.2. Perceptions of Students about the Functioning of Curricular Areas

The following is a summary of the document "Apreciação do funcionamento das Areas Curriculares" elaborated by the UEM which is publicly available. Considering the significant number of curricular areas operating in 2005-06 and for the first time, the comments in the present report are issued relatively to the integrated PHASES of the study plan. This approach favours the development of a broad and integrated perspective on the course. In what the Residences of the 5th curricular years are concerned, with the exception of Optional Residencies, appreciations were included in individual detailed reports (Appendixes).

As mentioned above in this report, the questionnaires on the curricular areas were reformed during 2005-2006. The appreciations of some areas have been presented in the end of this sub-chapter, outside of the corresponding PHASE. They correspond either to areas that had finished before the conclusion of the reformulation of the questionnaires – for example, "Introduction to the Medical Degree" – or to areas for which the instruments of last year were maintained with the explicit intention of performing a longitudinal assessment – the case of the areas of "Option Projects".

PHASE I (1st and 2nd years)

The totality of the Curricular Areas (CA) that composes PHASE I of the study plan gathered very favourable appreciations. The application of the criteria to classify the CA disclosed a good functioning of two CA – "Family, Society and Health" and "Follow up of the Family I" - excellent of the CA "Training in a Health Centre" and very good for the remaining CA. No evident deficiencies were disclosed in any of the areas. The following items might require some attention in the corresponding CA, namely "the workload was adequate given the time available for the area", "The assessment methodology was coherent with the learning objectives" and "The previous academic training gave me the suitable preparation for this curricular area".

PHASE II (3rd year)

The totality of the Curricular Areas (CA) that compose PHASE II of the study plan gathered very favourable ratings. The application of the criteria to classify the CA disclosed the good functioning of two CA - "Introduction to Community Health" and "Vertical Domains III" - and very good for the remaining CA. The process did not reveal clear deficiencies in any of the

areas. The following indicators might require some attention: "The assessment methodology was coherent with the learning objectives" and " The previous academic training gave me the suitable preparation for this curricular area".

PHASE III (4th and 5th years)

These CA had their first or second edition in the current year. The areas that start running for the first time in 2005-06 are described in detail in the corresponding individual reports (Appendixes). The aspects resulting from student ratings to be taken into consideration were discussed in the "Scientific Council Reflection Days".

Others Curricular Areas

Introduction to the Medical Degree Course

The reformulated questionnaires were not applied for this area due to its early finishing in the academic year. In line with the previous edition, the area gathered positive appreciations from the students. The most favourable ratings refer to the excellence of the faculty, to aspects related with the learning about medical degree course and to the development of abilities. 67% of the students affirm that they would take the CA if it was not compulsory in the plan of studies, a signal of appraise for the utility of this curricular area.

Optional Residencies

Technical issues related to the % of returned questionnaires prevent the appreciation of the functioning of this curricular area.

Option Projects

The appreciations collected for the Option Projects were clearly positive. The area is qualified as Excellent by the majority of the students, for every curricular year. Students value their learning along the areas and are in general very favourable to the curricular aspects of the area, including the assessment process. In the academic year of 2005-06 and alike all the previous years, the curricular areas were classified as very Good or excellent.

2.3. Internal Evaluation and Alteration Proposals for 2006-07 1st, 2nd, 3rd, 4th and 5th Curricular Years

So far this report presented the results of the evaluation by the UEM, of the functioning of the course in 2005-06. In this process, the evaluated elements have been the Students, the Professors and the Program, having as background the results of ratings by the students, adapted to the pedagogical model, in the end of each curricular area. Supported by the results of these inquiries, the Coordinators of the different curricular areas promoted internal evaluations. The results were presented in the "Days of Reflection of the ECS Scientific

Council", in which global analysis on the different curricular areas led to the establishment of standards of functioning and improvement of the curricular program.
Bellow the results of this internal evaluation are summarized with reference to proposals of alterations for the school year 2006-07.

INTRODUCTION TO THE MEDICAL DEGREE COURSE

Student marks attained very good levels. Student ratings identified some positive and negative aspects of the area, as follows:

More positive aspects

- The integration of the different components.
- The structure of the area in micro-modules.
- The assessment process.
- The process of gathering feed-back.
- The general approach to the contents: IT, laboratory practice.

Less positive aspects

- Different strategies to promote the comprehension of the learning objectives by the students.
- Time investment for skill development.
- The organization of statistics and the respect for the schedule.

Alteration proposals for 2006-07

Other comments and further feed-back gathered along the area, recommend the following alterations:

- more contact between faculty in the preparation of the area;
- the use of real medical situations to anchor students interest and motivation for issues that are not of medical nature;
- to invest on the training of students to use the internet more critically;
- improve the organization of phase 2.

MOLECULES AND CELLS

The objectives proposed for this curricular area were fully accomplished. Based on internal evaluation of the pedagogic process, it is important to highlight that from the 12 questions presented to students 11 were scored with very good or excellent (>90%). Moreover, the item with a lower score, about 72%, does not report to this curricular area but instead to the former preparation obtained by the students (probably at the high school) to the successfully prosecution of this area. Concerning the questions about the learning-teaching methodology it is pleasant to see the level of satisfaction demonstrated by the students, nevertheless, phase 4 is still raising some questions. In fact, student still grad phase 4 with low levels of satisfaction

(67-83%), what is quite surprising for teaching staff since the occurrence of this phase was never required by the students. Regarding the laboratorial component the student's answer still indicate a very good level (88-89%).

Alteration proposals for 2006-07

Due to the high number of students, it was decided that during phase 3 the students will be divided in two groups instead of all the students together. The teacher responsible for one of the phase 1 groups will be responsible in the phase 3 by the other group.

FUNCTIONAL AND ORGANIC SYSTEMS I, II AND III

The student's evaluation of the curricular area reflects the alterations proposed for the present year, mainly regarding the effort to better clarify the teaching aims both in "phase 1" and in "phase 2" (whenever adequate). The precise definition of the timetables for "phase 4" considerably improved the student's appreciation of the activities proposed.

The existence of some specific teaching activities that involve teachers from the various sub-areas was considered positive, both by the students and by the staff. In some cases the time allocated for these activities justifies specific evaluation to be considered in the final mark of the respective module, which will be taken into consideration next year.

Despite the increase in the number of periodical meetings for the teaching staff, and consequently in the responsibility of the group as a team, the interaction among the staff can still be improved. For that purpose, monthly meetings have now been implemented.

It is unanimously accepted that efforts still need to be made to improve the evaluation of the student's skills. The staff considers this the competence more difficult to achieve, and recognizes the effort made by the Medical Education Unit to organize faculty development courses with specialists in assessment.

Regarding the evaluation of "attitudes", we recognized the need to implement, next year, a more systematic annotation of the student's "attitude" at the end of each activity. Considerations about each student will, from now on, be discussed in the monthly meetings of the teaching staff.

TRAINING IN A HEALTH CENTRE

In the academic year 2005-06, the health centres - Barcelos, Póvoa de Lanhoso, Terras de Bouro, Vieira do Minho, Vila Nova de Famalicão e Vila Verde – were maintained the previous years.

This cooperation brings additional advantages to the School: the possibility for the students to experience health care in a rural environment; to set up opportunities for these health centres to cooperate with "Residencies in Health Centres" in a near future; to facilitate the promotion of the School and its teaching methods to the health centres. One should emphasize the

supportive attitude from the health centres professionals, mainly the Directors, Medical Coordinators and Tutors.

There weren't significative changes regarding the organizational and pedagogic model, except for a few organizational and logistic adjustments; handbooks for both students and tutors were implemented, the assessment form was restructured and the topics of the individual essay were replaced.

In the report made by the UEM (Medical Education Unit) on the "Assessment of the curricular area", regarding the student evaluation, among the items on the questionnaire – tutors, the activities in the health centres, group work, essays and general indicators – the enquiry identifies as "excellent" the tutors' performance and, the area in general. The most important characteristic to consider for 2006-07 is the way the written essays are organised and assessed.

From the intensive evaluation process more and less positive aspects were identified, as indicated bellow:

More positive aspects

- The continuity of the participation of six health centres and the interest of their professionals.
- Significative improvement of the relationship with the health centres.
- The creation of a pool of tutors.
- The excellent participation of the students.
- The introduction of a "Handbook" and other pedagogic aspects.

Less positive aspects

- Some inexperience of the health centres/professionals.
- The relationship with the health centres is still insufficient.
- The number of tutors was less than initially expected.
- Students' assessment model still ineffective.

Alteration proposals for 2006-07

- To correct the least rated organisational and pedagogic aspects.
- To promote a permanent relationship with the health centres.
- To attract physicians to become tutors.

FIRST AID

The results of the experience of the previous year were considered by professors and students as very positive and thus will be maintained in the following years.

OPTION PROJECT I, II, III, IV AND V

The results of the experience of 1st, 2nd, 3rd, 4th and 5th years continued to exceed the expectations and should be noted that:

- the "Internal Congress" of each Option Project that, for beyond the scientific and pedagogical relevance, reinforced the already good relation existing between the students, as well as between students and professors;
- the "Challenge to Student Mobility"; the chance of accomplishment of studies in varied number of distinct Institutions functioned as an excellent stimulus to the mobility of the students, intra-UM and Inter-Institutions, national and international.

These results are strong stimuli to the continuation of this area with the format implemented since the beginning. Consequently, the purpose and format of organization of this area will be unchanged in the next year.

FAMILY, SOCIETY AND HEALTH

In general, there was an improvement of the area in comparison with the previous year and the results were considered by students as very positive.

More positive aspects

- A more solidification of the curricular area.
- A better score in the students' assessment of the area, when compared to the previous year.
- Maintenance of the good cooperation Community Health / Psychology / Sociology.
- Great improvement relatively to Family and Primary Health Care.

Less positive aspects

- The contents were yet very theoretical and there wasn't enough interactivity in the teaching methodologies.

Alteration proposals for 2006-07

- A more significative inclusion of subjects of medical kind in the cognitive contents of the area.
- To change the handbooks according to the new contents.
- To increase interactivity.

FOLLOW-UP OF A FAMILY I AND II

In general there was an improvement of the area in comparison with the previous year and the results were considered by students as very positive.

More positive aspects

- Third year workshops and its relationship with the visits.

- Continuity of the cooperation of the tutors from the health centres.
- Pedagogic training provided to the tutors.

Less positive aspects

- Modest inclusion of medical subjects in the cognitive content (workshops) of the area.
- Some cooperation problems due to tutors workload in clinical tasks and other tutorials.

Alteration proposals for 2006-07

- Increase the inclusion of medical issues in the cognitive content of the area.
- Improve the cooperation with tutors maintaining a permanent training.
- Increase the visits to the Health Centres to evaluate the development of the area.

BIOPATHOLOGY AND INTRODUCTION TO THERAPEUTICS

Students' assessment of the curricular area was performed by means of written questionnaires, followed by group reflections with the teaching staff.

We concluded that the purpose and general objectives enunciated for BPT have been fulfilled. In addition, the evaluation of the pedagogical process has led to the identification of the more and less positive aspects.

More positive aspects

- Students consider to have learned substantially in the curricular area.
- Phase 1, launched with problem/clinical cases and structured in concept maps, allowing a good definition of the learning objectives.
- Adequacy of the bibliographic resources, intranet and web, offered to the students for the development of Phase 2.
- Adequacy of the laboratory classes to the selected themes.
- Phase 3 in its various aspects, namely the group discussion of concepts, the problem centred approach, the integration of concepts in conceptual maps and the reflection concerning the clinical applicability of the acquired knowledge and skills.
- Assessment with integration of scientific disciplines.
- Relevance of the defined objectives.
- Relevance of the selected themes and contents for the future clerkships, as well as, their correlation with previous concepts.

Less positive aspects

- Insufficient time for self-learning in some modules.
- Skills assessment.

Proposed changes for 2006-07

As there was a very positive feedback from the changes introduced in the year 2005-2006 in the curricular area, the number, sequence and duration of the modules, as well as the basic format of the Phases and assessment will be maintained for the following year. Nevertheless, there are some minor alterations proposed for the year 2006-07, named:

- to continue increasing the time for self-learning, transferring some contents between modules, in order to level the work-load in the different modules;
- to improve the interactions with the other curricular areas, namely the ones that follow BPT, having in mind the improvement of the student skills.

INTRODUCTION TO COMMUNITY HEALTH

Overall, both the students and teaching staff considered that a significant improvement of the area was achieved in the present year.

More positive aspects

- Consistent structure taking into account the organization and reduction of the learning objectives.
- Strength relation between the seminars and the objectives of the area.
- High scientific quality of the seminars.
- The duration of the practical sessions.
- The poster sessions, as a formative element.
- Relationship between students and teaching staff.

Less positive aspects

- Holiday's period within the development of the area.
- Interconnections with other curricular areas.

Alteration proposals for 2006-07

- Improve the phase 4 of the learning-teaching methodology.
- Pursue the improvement of the interconnections with other curricular areas.
- Increase the number of practical sessions with problems base learning.

INTRODUCTION TO CLINICAL MEDICINE

Ratings disclose a very good functioning of the area revealing a very positive evolution from the previous experience. Emphasis must be put in the fact that students recognize the importance of the area for its personal and professional development. The area has been effective in terms of the construction of their professional identity.

Globally, the ratings suggest that the present experience has been successful in capturing student learning and commitment. A clearly favourable evolution can be traced since last year.

HOSPITAL RESIDENCIES

The implementation strategy of the Clinical Residencies obeyed to that referred in 1.7. In the particular case of Clinical Residencies that start running for the first time in 2005-06 specific reports were compiled with a detailed description of the structure, development and functioning of each one of the Residencies, as well as of the students' assessment in each of them (Appendixes).

HEALTH CENTRES RESIDENCIES

In these curricular areas the main objectives were achieved and the teaching staff feels that students are very enthusiastic with family and general medicine and public health. Moreover, the heath centre tutors continue to be very enthusiastic in this cooperation programme.

More positive aspects

Health Centre Residences (4th year)

- Consistent structure, highlighted from the selection and organization of the learning objectives.
- First edition of the Skills Laboratory.
- Reduction of the number of seminars.
- Evaluation better coordinated with the learning objectives.
- Increased discrimination of the students classification.
- Increased cooperation between teaching staff and UEM.

Health centres residences (5th year)

- First edition of the Skills Laboratory.
- First edition with success of the module "Public Heath".
- Reduction of the number of seminars.
- Evaluation better coordinated with the learning objectives.
- Increased discrimination of the student classification.
- The students developed "investigation protocols" at high scientific level.
- Involvement of the tutors in the evaluation process in an integrated form.

Less positive aspects (4th and 5th years)

- Low number of teachers and available rooms for practical sessions.
- Difficulties with the time management of the tutors, partly associated with their duties at Health Centres.
- Decrease of the number of tutors and difficulties in increasing the number of tutors.

Alteration proposals for 2006-07

- Reformulation of the learning objectives in articulation with health centres.
- Increase the number of tutors.

- Intensify the pedagogical training of tutors.
- Promote an improvement of assessment tools.
- Implementation of the problem based learning methodology applied to this area.
- Implementation of laboratory facilities within, at least 5, health centres.

VERTICAL DOMAINS / TO FEEL THE PULSE TO LIFE

From a general point of view, the area's sessions were successful, as demonstrated by assessment form. The classifications were globally very positive, essentially due to the fact that students' assessment only relied on in their presence in the sessions. However, the effective evaluation of this area objectives can only be verified when the actual students will be practicing medicine professionally.

None of the official assessment inquiry *itens* was evaluated less than 50%, being that 4th and 5th years presented the most negative results, namely in *item* 11 ("Globally, I consider this area as excellent"; 54% and 58%, respectively). These data demonstrate to be incoherent, in our view, when compared with the data obtained with the same students in what concerns the *item* (12) that better characterize this area ("Globally, this area contributed for my personal development"). For this *item*, the results have been 83% (4th year) and 68% (5th year). This same *item* has been evaluated very positively by the students from the other curricular years (90%, 87% and 74%, respectively).

The internal assessment performed at the end of each session revealed, in a total of 2407 answers, the following global results:

Very Good: 52.2%

Good: 34.6%

Fair: 11.3%

Bad: 0.1%

GLOBAL "Very good" and "Good": 86.8%

More positive aspects

- Elucidation of the objectives and contents of the area at the beginning of the 1st year (included in the area "Introduction to the Medicine degree course").
- Better planning and articulation of the ethics and history of medicine sessions with other curricular areas.
- The assessment form's area is more standardized with assessment forms of other curricular areas.
- The increasing interest demonstrated by students that actively participated in most of the sessions.

Changes proposals for 2006-07

- To pursue the articulation of this area contents with other curricular areas.
- To increase pedagogical quality of this area sessions, mentioning previously the objectives and methodologies of each session.
- At the end of each session, to proceed to an informal assessment of the student effective learning of the session, choosing (in an aleatory mode) some students to answer to three or four questions (with UEM's help).
- To elaborate a normative document on this area functioning.

CHAPTER III PEDAGOGICAL PLANNING AND PROGRAMMING FOR 2006-07

3.1. Structure and Global Functioning

The 2006-07 study plan (Charter III.1) will be maintained from 2005-06 (Charter I.1 of the present report). It has been prepared in response to a request for all degree courses of the University of Minho to consider the conversion into the new credits system and the specification of the number of hours that will serve as reference.

Chart III.1 Study Plan of Medical Degree Course / 2006-07

Phase	Scientific Area	Curricular Unit	Weeks		Credits
			Curricular	Final Eval.	
I	CSH	Introduction to the Medical Degree Course	4		4.0
	CBB	Molecules and Cells	12	1	24.0
	CBB	Functional and Organic Systems I	12	2	25.0
	SC	Training in a Health Centre	1		1.0
	SC	First Aid	1		1.0
		Option Project I	4		4.0
	CSH	Vertical Domains I	*		1.0
		Final Exams		2	
		Freshman Welcome Week	1		
		1st Year - Total	**40**		**60.0**
	CBB	Functional and Organic Systems II	14	2	25.5
	CBB	Functional and Organic Systems III	14	2	25.5
	CSH+SC	Family, Society and Health	2		2.0
	CSH+SC	Follow up of a Family I	*		2.0
		Option Project II	4		4.0
	CSH	Vertical Domains II	*		1.0
		Final Exams		2	
		2nd Year - Total	**40**		**60.0**
II	P	Biopathology and Introduction to Therapeutics	23	1	42.0
	SC	Introduction to Community	5		4.0
	C	Introduction to Clinical Medicine	5	1	7.5
	CSH+SC	Follow up of a Family II	*		1.5
		Option Project III	4		4.0
	CSH	Vertical Domains III	*		1.0
		Final Exams		1	
		3rd Year - Total	**40**		**60.0**
III	SC	Health Centre Residency I	7		10.5
	C	Medicine I Residency	12	1	18.0
	C	Maternal and Child Health Residency	11	1	17.0
	C	Mental Health Residency	4		6.5
	C+P+CBB	From the Clinic to Molecular Biology I	*		3.0
		Option Project IV	4		4.0
	CSH	Vertical Domains IV	*		1.0
		4th Year - Total	**40**		**60.0**
	SC	Health Centre Residency II	7		10.5
	C	Surgery Residency	12	1	18.5
	C	Medicine II Residency	12	1	18.5
	C	Optional Residencies	3		4.5
	C+P+CBB	From the Clinic to Molecular Biology II	*		3.0
		Option Project V	4		4.0
	CSH	Vertical Domains V	*		1.0
		5th Year - Total	**40**		**60.0**
IV	C	Health Centre Residency III	7		10.5
	C	Hospital Residencies	26		39.5
	C+P+CBB	From the Clinic to Molecular Biology III	*		3.0
		Option Project VI	7		7.0
		6th Year – Total	**40**		**60.0**

(*) Organized horizontally, in parallel with the curricular unit running in each module

C- Clinical; CBB- Biological and Biomedical Sciences; CSH- Human and Social Sciences; P- Pathology; SC- Community Health.

In the 2006-07 academic years, the course coordination structures will be maintained from 2005-06 with the composition presented below.

a) Course Director

- Joaquim Pinto Machado

b) Course Committee

- Joaquim Germano Pinto Machado, Course Director
- Maria Cecília Lemos Pinto Estrela Leão, Deputy Course Director
- Jorge Manuel Rolo Pedrosa, Coordinator of Phase I
- Joana de Almeida Pacheco Palha, representing the Coordinator of Phase II
- Jaime Correia de Sousa, representing the Coordinator of Phase III
- Nuno Jorge Carvalho de Sousa, Coordinator of Phase IV
- Manuel João Mendes da Costa, Coordinator of the Medical Education Unit
- Pedro Ricardo Luís Morgado (Student, 6th year)
- Vítor Hugo da Eira Pereira (Student, 5th year)
- Pedro Miguel Oliveira Azevedo (Student, 4th year)
- Fábio André Eleutério Amaral (Student, 3rd year)
- Diogo de Oliva Malheiro (Student, 2nd year)
- Ana Luísa Carneiro Morais de Sousa (Student, 1st year)

c) Scientific Council

(all the PhD holders in the faculty)

- Joaquim Germano Pinto Machado Silva, President
- Maria Cecília Pinto Estrela Leão, Vice-President
- Adhemar Longatto Filho
- António Carlos Megre Eugénio Sarmento
- António Gil Pereira de Castro
- Armando Alberto Nova Pinto Almeida
- Fernando José Santos Rodrigues
- Isabel Maria Mestre Palmeirim Alfarra
- Joana Almeida Santos Pacheco Palha
- João Carlos Cruz Sousa
- João Espregueira Mendes
- João José Fernandes Cardoso de Araújo Cerqueira
- Jorge Manuel Nunes Correia-Pinto
- Jorge Manuel Rolo Pedrosa
- Manuel João Tavares Mendes da Costa
- Maria de Fátima Monginho Baltazar
- Maria Margarida Teles de Vasconcelos Correia-Neves
- Nuno Jorge Carvalho Sousa
- Patrícia Espinheira Sá Maciel
- Paula Cristina da Costa Monteiro Ludovico
- Paulo Sousa Pereira
- Rui Manuel Vieira Reis
- Rute Carina Silva Moura

Invited

- António Jaime Correia Sousa
- António José Alegre Sarmento
- Carlos Alberto Almeida Valério
- Fernando Carlos de Lander Schmitt
- Maria Clara Costa Oliveira
- Pedro Nunes Ferreira Pinto Oliveira

Table III.1 Area and Module Coordinators
1st, 2nd, 3rd, 4th, 5th and 6th Curricular Years / 2006-07

Curricular Area -Module	**Coordinator**	**Status**
1st Year		
Introduction to Degree Curse	Manuel João Costa	Assist. Prof. (ECS-UM)
Molecules and Cells	Fernando Rodrigues	Assist. Prof. (ECS-UM)
- From Anatomy to Cellular Phisologu	Paula Ludovico	Assist. Prof. (ECS-UM)
- Molecular Genetics Foundations	Fernando Rodrigues	Assist. Prof. (ECS-UM)
- Cells and Cellular Proliferation	Isabel Palmeirim	Assist. Prof. (ECS-UM)
Organic and Functional Systems I	Joana Palha	Assoc. Prof. (ECS-UM)
- General Introduction and Musculoskeletal Systems	Armando Almeida	Assist. Prof. (ECS-UM)
- Digestive Systems	Jorge Correia-Pinto	Inv. Assoc. Prof. (ECS-UM)
Training in a Health Centre	António Alegre Sarmento	MD (ECS-UM)
First Aid	Isabel Palmeirim	Assist. Prof. (ECS-UM)
Optional Project I	Paula Ludovico	Assist. Prof. (ECS-UM)
Vertical Domains I	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (ECS-UM)
2nd Year		
Organic and Functional Systems II	Joana Palha	Assoc. Prof. (ECS-UM)
- Circulatory and Respiratory System	Jorge Correia-Pinto	Inv. Assoc. Prof. (ECS-UM)
- Urinary System	Armando Almeida	Assist. Prof. (ECS-UM)
- Reproductive System and Development Postnatal, Growth and Ageing	Armando Almeida	Assist. Prof. (ECS-UM)
Organic and Functional Systems III	Joana Palha	Assoc. Prof. (ECS-UM)
- Nervous System	Nuno Sousa	Assoc. Prof. (ECS-UM)
- Endocrine System	Joana Palha	Assoc. Prof. (ECS-UM)
- Synopsis of SOFs	Nuno Sousa	Assoc. Prof. (FM-UP)
Family, Society and Health	Margarida Lima	MD (ECS-UM)
Follow up of a Family I	Margarida Lima	MD (ECS-UM)
Opticional Project II	Armando Almeida	Assist. Prof. (ECS-UM)
Vertical Domains II	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (ECS-UM)
3rd Year		
Biopathology and Introduction to Therapeutics	Jorge Pedrosa	Assoc. Prof. (ECS-UM)
- General Pathology and Introd. to Pharmacology	Fátima Baltazar	Assist. Prof. (ECS-UM)
- Genetics and Environment	Rui Reis	Assist. Prof. (ECS-UM)
- Imunopathology	Adhemar Longatto	Assist. Prof. (ECS-UM)
- Infectious Pathology	António Gil Castro	Assist. Prof. (ECS-UM)
- Neoplasia	Fernanda Milanezi	Inv. Assist. (ECS-UM)
Introduction to Clinical Medicine	Nuno Sousa	Assoc. Prof. (ECS-UM)

Table III.1 Area and Module Coordinators
1st, 2nd, 3rd, 4th, 5th and 6th Curricular Years / 2006-07

Curricular Area -Module	Coordinator	Status
3rd Year (cont.)		
Introduction to Community Health	António Alegre Sarmento	MD (ECS-UM)
	Carlos Valério	MD (ECS-UM)
Follow up of a Family II	Margarida Lima	MD (ECS-UM)
Optional Project III	António Gil Castro	Assist. Prof. (ECS-UM)
Vertical Domains III	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (IEP-UM)
4th Year		
Health Centres Residencies I	António Jaime Correia de Sousa	MD / MPH (ECS-UM)
- General and Familiar Medicine	António Jaime Correia de Sousa	MD / MPH (ECS-UM)
- Public Health	Mário Freitas	Inv. Assist. (ECS-UM)
Hospital Residencies	Nuno Sousa	Assoc. Prof. (ECS-UM)
From Clinic to Molecular Biology I	Cecília Leão	Full Prof. (ECS-UM)
Optional Project IV	Rui Reis	Assist. Prof. (ECS-UM)
Vertical Domains IV	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (ECS-UM)
5th Year		
Health Centres Residencies II	António Jaime Correia de Sousa	MD / MPH (ECS-UM)
- General and Familiar Medicine	António Jaime Correia de Sousa	MD / MPH (ECS-UM)
- Public Health	Mário Freitas	Assist. Conv. (ECS-UM)
Hospital Residencies	Nuno Sousa	Assoc. Prof. (ECS-UM)
From Clinic to Molecular Biology II	Cecília Leão	Full Prof. (ECS-UM)
Optional Project V	António Alegre Sarmento	MD (ECS-UM)
Vertical Domains V	Joaquim Pinto Machado	Full Prof. (ECS-UM)
	Clara Costa Oliveira	Assist. Prof. (ECS-UM)
6th Year		
Health Centres Residencies III	António Jaime Correia de Sousa	MD / MPH (ECS-UM)
Hospital Residencies	Nuno Sousa	Assoc. Prof. (ECS-UM)
From Clinic to Molecular Biology III	Cecília Leão	Full Prof. (ECS-UM)
Optional Project VI	Patrícia Maciel	Assist. Prof. (ECS-UM)

General Scheduling for Curricular Areas and Modules

In the Curricular Year 2006-07, will take place the curricular areas of Phase I (1st and 2nd years), Phase II (3rd Year), Phase III (4th and 5th years) and Phase IV (6th year) that figures in the Study Plan on Charter III.1, according with the schedule available on ECS site www.ecsaude.uminho.pt

ECS Lecturers

A list with the teaching staff is presented in the Health Science School Annual Report - 2006. On average, each faculty will continue to devote about 6 hours/week to presential classes. Curricular activities will, as much as possible, concentrated in one of the semesters, the other one being essentially dedicated to scientific research.

A large number of guest professors from other University of Minho's Schools or other Institutions will also participate in the curricular activities, conducting Thematic Activities, Seminars and Round Tables about various issues of the different curricular areas.

3.2. Pedagogical Programming for 2006-07

The largely positive results of the previous experiences with the 1st, 2nd, 3rd, 4th and 5th years is a strong stimulus to the continuation of the format implemented in previous years. Therefore the organization of the areas will be basically maintained in 2006-07.

In what regards the Clinical Residencies, the results obtained reinforce the idea that multicentric clinical approaches are vital for a holistic formation of medical students, even though there are some difficulties arising from the specificity of each learning scenario. In 2006-07 the main challenge will be the implementation of the 6th curricular year, a year of profissionalization for the future MDs that will take place for the first time.

School of Health Sciences

January 2007

APPENDIXES

5th Year Clinical Residencies: Reports 2005-06

Appendix I: Medicine II Residency

Appendix II: Surgery Residency

Appendix III: Health Centre Residency II

Annex I

Surgery Residency

Index

1. Overview

The present report summarizes the organization and implementation of the 5th year Medical Degree's Surgery Residency (SR) at University of Minho's School of Health Sciences. The document presents and analyses the test scores and the ratings gathered on the Residency.

2. General organization and coordination of the Surgery Residency

Surgery is the first of the Medical Degree Programme's 5th year Hospital Residencies. In 2005, this Residency consisted on seven clinical clerkships: i. General and Vascular Surgery, ii. Orthopaedics, iii. Neurosurgery, iv. Gynaecology, v. Urology, vi. Ophthalmology and vii. ENT (Ear, Nose and Throat) and on four sequential modules with case-based seminars: i. General and Vascular Surgery and Locomotor's System (Orthopaedics/Trauma and Neurosurgery); ii. Genital-Urinary System (Gynaecology and Urology); iii. Organs of the Senses (Ophthalmology and Ear Nose and Throat); iv. General Surgery).

The clerkships were held in the two Hospitals affiliated to the School: the "HSM" (HSM) in Braga and the "HSO" (HSO), in Guimarães.

The corresponding general guidelines were set by the Clinical Areas Coordination Group (CACG).

The implementation and coordination of this particular Residency was under the responsibility of the Surgery Residency Coordination Group (SRCG), working under the Residencies' general framework (see outline below). The two of the SRCG's members that originated from each of the affiliated Hospitals - Dr. Mesquita Rodrigues (HSM) and Dr Carlos Santos (HSO) - were the Supervisors of the Residency at their Institutions before the SRCG.

LEVEL	STRUCTURE	ELEMENTS	DUTIES
Overall coordination	"Clinical Areas Coordination Group" (6 elements)	Pinto Machado Nuno Sousa Jaime Sousa Damião Cunha Cerqueira Gomes Óscar Candeias	Ensure that rules, procedures and deployment of the Residencies comply with the School's Philosophy
Clerkships* coordination	"Surgery Residency Coordination Group" (SRCG) (7 elements)	Pinto Machado Nuno Sousa Espregueira-Mendes Carlos Alegria Fausto Fernandes Mesquita Rodrigues * Carlos Santos **	• Define student tasks • Monitor teaching & learning in clinical settings • Involve Hospital Services • Assign discussion panelists • Supervise teaching materials and examinations

* Supervisor who originated from HSM
** Supervisor who originated from HSO

The SRCG responsibilities fell into different levels: i. the definition of the Residency's learning objectives, comprising clinical content, (predominantly lectured on campus seminars), skills and professional behaviour (mainly acquired/developed in Hospital rotations in groups of four); ii. the precise definition of the clinical procedures list (skills and tasks); iii. the selection of the assessment process and the pass/fail criteria; iv. the communication of the program to the Hospital tutors and to invited seminar speakers, respectively through the associated Supervisor and Chairperson; v. the design and the provision of questions and materials for examinations.

3. Clerkships

The responsibility for clinical teaching was shared with Hospital Supervisors, which assigned tutors (on a ratio of 1 tutor/ group with 4 or 5 students - the list is presented in Appendix 2), guaranteed an adequate involvement of clinical staff (physicians and nurses) and scheduled the rotations in accordance with each Hospital's specific contexts (see Table below).

Table 1 – Distribution calendar of rotations within affiliated Hospitals

	Vascular and General Surgery	Locomotor's System		Genital-Urinary System		Organs of the Senses	
		Orthopaedics and Trauma	Neurosurgery	Gynaecology	Urology	Ophthalmology	ENT
HSM	5	2	1	1	1	1	1
HSO	5	2	*	1	1	1	1

* All Students did this rotation in HSM

Students rotated daily (9.00-13.00h) through seven services, in groups of 4/5 accompanied by a tutor. Daily hospital duties included: 1) patient admissions (4); 2) patient observations and history taking in simulated records (colour files stapled to the patient's process); 3) the performance (training) of the planned procedure list (Appendix 1); 4) attendance of the tutor/supervisor's practice; 5) participation in the Medical Department/Service meetings.

4. Seminars

The cognitive programme was addressed in three weekly case-based Seminars (the calendar is presented in appendix 3). The Seminars were attended by the whole cohort of 5th year students and consisted on case discussions, led by "Discussion panels" (one for each of the four modules). Chairpersons shared the responsibility of defining the topics, for selecting the speakers – listed in Appendix 3 - for the quality of the course materials (including bibliography, audiovisuals and the texts that were uploaded on the School's intranet) and for the written assessments .

The seminars appointed to each module are presented in the table below.

Table 2 – Distribution of the number of sessions per topic and their chairpersons

Module	Chairpersons	Number of Sessions
General and Vascular Surgery	Dr. Mesquita Rodrigues (MD, HSM) Dr. Carlos Santos (MD, HSO)	13
Locomotor's System	Prof. Espregueira-Mendes (MD) Dr. Carlos Alegria (MD, HSM)	7
Genital-urinary System	Dr. Américo Santos (MD, HSM) Dr. Pedro Vieira de Castro (MD, HSO) Dr. Jardim da Pena (MD, HSM) Dr. Jaime Faria (MD, HSO)	5
Organs of the Senses	Dr. Luís Gonçalves (MD, HSO) Dr. Vitorino Ribeiro (MD, HSM) Dr. Fausto Fernandes (MD, HSO) Dr. Tiago Godinho (MD, HSM)	5

As a rule, the SRCG proposed "Russell, R. Williams, N. Bulstrode, C. (ed.) 2004. Bailey & Love's Short Practice of Surgery. 24th Ed" as the major bibliographic source, which was complemented, whenever suitable, with other references.

5. Assessment

5.2. Assessing student achievements

The following is an overview of the assessment procedure applied in the Residency, which is detailed in Appendix 4. In agreement with the School's principle that students should demonstrate knowledge, skills and attitudes, the assessment[1] was based on five parameters, equally weighed (20%) in the Residency final score: professional behaviour[2], skills[2], patient examination and discussion (evaluated at the Hospitals), module written exams and a final integration exam (evaluated at the School). Attention was paid to the demands of the SRCG and the criteria advanced by the CACG. Requirements such as format, logistics of examinations, grading, pass-fail decisions, satisfactory residency completion, recommended readings and others were announced to the students prior to the beginning of the Residency.

5.2. Results and commentaries

Final grade distributions are presented in table 3 in the following page. There was predominance (64%) of "*good*" performances. Twelve students were "*very good*" or "*excellent*", whereas three students (6%) failed the course. The grades computed from the five parameters averaged 15/20.

Table 3 – Final Grade distribution – Surgery Residency

Number of Students	**Nº of Students (%)**					**Average** ± Standard Deviation
	0-9	**10 - 13**	**14 - 15**	**16 – 17**	**18 - 20**	
	Failed	**Fair**	**Good**	**Very good**	**Excellent**	
50	3(6)	4(8)	31(62)	11(22)	1(2)	15 ± 1

A detailed analysis of the student's performance unveils global differences in the five parameters (see the following table). The grades for professionalism and skills were all equal or greater than 14/20 - 88 and 86% were "*very good*" or "*excellent*". However, grades in the written tests were lower. There were only 46% of the students with grades *"good"* or higher in the module or integrated examinations. The majority of students performed "fair" in module as well as in integrated written exams (50% and 42%, respectively). The three students that failed the minimal approval grade will be re-evaluated in July.

Table 4 – Discriminative grade distribution – Surgery Residency

	Nº of Students (%)						**Average** ± Standard Deviation
	0 – 7	**8-9**	**10 - 13**	**14 - 15**	**16 – 17**	**18 – 20**	
	Failed	**Poor**	**Fair**	**Good**	**Very good**	**Excellent**	
Professionalism	0 (0)	0 (0)	0 (0)	6 (12)	41 (82)	3 (6)	17 ±1
Skills	0 (0)	0 (0)	0 (0)	7 (14)	41 (82)	2 (4)	16±1
Hospital Exam	0 (0)	0 (0)	5 (10)	29 (58)	14 (28)	2 (4)	15±1
Module written examinations	1 (2)	1 (2)	25 (50)	15 (30)	7 (14)	1 (2)	13±2
Integrated exam	2 (4)	4 (8)	21 (42)	18 (36)	5 (10)	0 (0)	13±3

[1] The Medical Education Unit compiled and analysed all the grades and is responsible for the following computations and interpretations.
[2] Adaptation of the clinical student evaluation grid designed by the Jefferson Medical College (source: 2003-04 Student Handbook).

Similar to what had happened with this cohort of students in the previous year, the high grades obtained in clinical settings indicate a considerable correspondence between student's prior training and what the Hospital tutors considered to be adequate standards for a 5th year undergraduate resident. The less positive aspects were the failings and the lower grades registered for the written components. Student marks are, nevertheless, very good.

5.2. Student ratings: service and tutor

Student ratings on the Residency were assessed using a ten-item multiple choice questionnaire, with a 4 point Likert-type scale format (from Strongly disagree to Strongly agree). The questions were the following:

1. I have accessed all the service components (eg: meetings, visits, examinations, etc.)
2. I was stimulated to share my ideas, knowledge and doubts
3. The tutor was available to answer questions and to clarify doubts
4. Tutors' explanations were organized and clear
5. The tutor was keen on letting me contact patients with different pathologies
6. The tutor helped to me to carry through clinical procedures effectively
7. The tutor dominated the concepts, phenomena and clinical practice
8. I felt supported and supervised
9. He's/She's an excellent tutor
10. What I've learned in this service was useful

Students answered on paper copies of the questionnaires, at the end of each clerkship. Student choices and percentages were computed for each question, using an SPSS suite (SPSS 14.0).

5.2. Results and Commentaries

For a more straightforward discussion and easier visual interpretation of the data set, results were classified as "very good, good, poor, very poor" and colours were assigned to the different categories.

Table 5 - Criteria to define the relative performance of each item for faculty, based on the positive values of the answers for each question

76 – 100%	51 – 75 %	26 – 50%	0- 25%
Very Good	Good	Poor	Very poor

The general results for this rating are included in table 6. The "Positive values" for each questions and service presented in the tables, correspond to the sum of the percentages of the answers Agree or Strongly agree. Results correspond to the ratings collected for the same rotation, in both Hospitals.

Table 6. Positive values associated to each question, in the different rotations (%)

Question	Surgery	Orthopaedics and Trauma	Neurosurgery	Gynaecology	Urology	Ophthalmology	ENT
1	96	100	73	85	87	96	58
2	100	100	100	90	78	100	81
3	100	100	100	85	87	96	85
4	100	100	100	95	87	96	89
5	100	100	91	80	96	100	85
6	96	100	82	80	83	100	92
7	100	100	100	100	96	100	100
8	93	100	100	85	78	100	81
9	100	100	100	80	83	96	81
10	100	100	100	95	96	100	92
Average *	**99**	**100**	**95**	**88**	**87**	**98**	**84**

* Sum of all answers of "Strongly agree" and "Agree", divided by the total number of answers

Rotations were rated at very high levels with no exception. Students appreciated the usefulness of all rotations (item #10) and recognized unanimously that the tutors at the rotations of Surgery, Orthopaedics and Trauma and Neurosurgery were excellent (excellence was also recognized for the majority of the tutors on the remaining rotations, in particular at Ophthalmology (96%)).

The almost unanimous positive responses to item #7- *the tutor dominated the concepts, phenomena and clinical practice* - demonstrate that students appreciated tutor's professional and clinical competence. However, the ratings gathered for item #6 – *the tutor helped to me to carry through clinical procedures effectively* - at the rotations of Neurosurgery, Gynaecology, Urology and ENT, suggest that some tutors need to develop their training skills. The least positive ratings were gathered for item number #1 where the scores indicate that significant percentages of students have not accessed all the rotation's components at the ENT and also at the Neurosurgery rotations.

For some rotations, more information emerges when the ratings are analysed separately for the two Hospitals, due to heterogeneous performances (see table 7.). In fact, the somewhat lesser performances of the Gynaecology and ENT rotations on one hand and of the Urology rotation on the other, can be traced respectively to the services of the HSO and HSM. For the latter, the less positive ratings fell on the items 2, 6, 8 and 9. Taken as a whole, these results suggest that students would have appreciated greater availability and support from their tutors. The aspects that can be improved in the Gynaecology and ENT rotations at the HSO relate to: i. the access of students to all service components - also stressed for the rotation oat the HSM (item #1); ii. the availability of tutors (item #3); iii. the contact with different pathologies; iv. the extent that students felt to have been supervised. In Gynaecology, 40% of the tutors can improve the effectiveness of the clinical training (item #6) whereas 42% of the ENT tutors may work their skills to catch student involvement in their learning. The rotations of Surgery, Orthopaedics and Trauma, Ophthalmology, Gynaecology (at HSM) and Urology (at HSO), were rated excellent in both Hospitals. The performances of the remaining clerkship's rotations, albeit somewhat heterogeneous, are still very positive. Globally, the ratings sustain that the student perspectives on the clerkships have been very successful.

Table 7 includes data computed for the clerkship services separately for each one of the two Hospitals: Hospital S. Marcos (HSM) and Hospital Sra da Oliveira (HSO).

Table 7: Positive values associated to each question, for different services (%)

Question	Surgery		Orthopaedics and Trauma		Neurosurgery *	Gynaecology		Urology		Ophthalmology		ENT	
	HSO	HSM	HSO	HSM	HSM	HSO	HSM	HSO	HSM	HSO	HSM	HSO	HSM
1	93	100	100	100	73	70	100	100	80	93	100	75	43
2	100	100	100	100	100	80	100	88	73	100	100	58	100
3	100	100	100	100	100	70	100	88	87	100	92	67	100
4	100	100	100	100	100	90	100	100	80	100	92	83	93
5	100	100	100	100	91	70	90	100	93	100	100	75	93
6	93	100	100	100	82	60	100	100	73	100	100	92	93
7	100	100	100	100	100	100	100	100	93	100	100	100	100
8	93	93	100	100	100	70	100	88	73	100	100	67	93
9	100	100	100	100	100	60	100	100	73	100	92	67	93
10	100	100	100	100	100	90	100	100	93	100	100	83	100
Average **	**98**	**99**	**100**	**100**	**95**	**76**	**99**	**96**	**82**	**99**	**98**	**77**	**91**

* All students did this rotation in HSM

** Sum of all answers of "Strongly agree" and "Agree", divided by the total number of answers

5.2. Student ratings: seminars

Information about student perceptions on the Seminars was collected with a 13-item multiple choice questionnaire, using a four point Likert-type response format (from Strongly disagree to Strongly agree). Questionnaires were filled at the end of each session and results analysis was similar to the one presented on tutor ratings. The questions were the following:

1. The lecture was dynamic
2. The contents were approached with clarity
3. PowerPoint presentations were well organized and structured
4. The way the session was organized captivated my interest
5. Theories and concepts were linked to practice
6. Recent developments in the area were discussed
7. The recommended bibliography was useful
8. I felt encouraged to participate in case discussions
9. I understood and assimilated the seminar's contents
10. The seminar corresponded to my expectations
11. The seminar integrated in the area's/module's objectives
12. The seminar was useful to support the practical part of the residency
13. It was an excellent seminar

5.2. Results and Commentaries

The evaluation includes the positive values collected for all the lecturers. Those ratings, organized by subject, can be observed in the table below.

Table 8. Average (positive values) for each subject, in the respective set of its seminars (%)

Question	General and Vascular Surgery Average %	Locomotor's System Average %	Genital-Urinary System Average %	Organs of The Senses Average %
1	80	85	86	65
2	95	93	95	78
3	93	96	96	78
4	79	74	84	60
5	94	99	99	92
6	94	89	92	80
7	58	90	64	44
8	79	62	68	58
9	90	90	90	60
10	84	85	86	65
11	89	81	100	88
12	86	85	90	79
13	86	76	87	62
Average *	**86**	**86**	**89**	**63**

* This average represents the sum of all answers of "Strongly agree" and "Agree", divided by the total number of answers

In general, the vast majority of seminars gathered very positive ratings for all the inquiry's items. Globally, above 85% were rated as excellence. The seminars of Organs of the Senses - the module with the least positive results - were still rated excellent by 79% of the class. Student's expectations (item 12) were met by every module. The positive appreciations that refer to the way contents have been linked to with clinical practice (item 5) are of particular relevance, as they evidence the fulfilment of the seminars' major educational purpose.

Other aspects conquered general appraisal – like the clarity of the seminars (item 2) or the organization of the presentations (item 3) – whereas others did so only partially. The results suggest that lecturers were not always effective in promoting student participation (item 7) and that bibliography was sometimes not useful (item 7).

The content coverage of the sessions (items 10, 11) and the connection to practice (items 5, 6) are worth appraising. The items 1 and 4 related more to seminar presentation skills that can be addressed through Faculty Development.

In summary, the analysis suggests that Organs of the Senses is the module where relatively greater attention should be put, so that higher ratings can be gathered in future Residencies. Nevertheless, the seminar modules were all very well rated.

5.2. Tutor ratings: students, model, satisfaction

In 2005-2006 and for the first time, the School of Health Sciences was able to gauge the Hospital Tutors on the Residencies. The former was done with a questionnaire devised by the Medical Education Unit in tight collaboration with the CACG. Tutor ratings were gathered on student's attributes, on their impact on the Service, on the Residencies' model and on tutor's satisfaction at the completion of the Residency. The twelve-item multiple choice questionnaire, with a six point Likert-type scale format (from Strongly disagree to Strongly agree), included the following questions:

1. The interest of the students in the Residency was genuine
2. Students Knowledge was adequate for this Residency
3. The skills of the students at the entrance of the Residency were adequate
4. Students Attitude was adequate in this Residency
5. Students had a positive impact on the assistencial care
6. Students had a positive impact on the my professional activity
7. Globally, the Residency's model was adequate
8. The School of Health Sciences provided me with the necessary assistance and support
9. I developed a good relationship with the tutees
10. This experience as a tutor has raised my interest in teaching
11. I feel pleased with having been a tutor
12. I would be very pleased to be a tutor again

Tutors answered on paper copies of the questionnaires that were distributed at the end of the Residency and, with an important collaboration from the respective supervisors, returned the forms to the School of Health Sciences. Tutor responses were computed using an SPSS suite (SPSS 14.0).

5.2. Results and Commentaries

The general perception of the tutors, concerning the items enclosed in the inquiry, is summarized in the data included in table 9

Table 9. Positive values associated to each question, in the different rotations (%)

Question	Surgery
1	100
2	91
3	89
4	100
5	72
6	87
7	71
8	58
9	96
10	96
11	91
12	89
Average *	**87**

Globally, the input reveals highly positive appreciations. These were overwhelming for students attributes - their interest, their knowledge, their skills and their attitudes (items 1 through 4) – for the tutor/tutee relationship developed during the tutorial experiences (good for 96%) and for their effect on tutor's personal interest in teaching (96%).

The three aspects that gathered the least positive tutor ratings refer to organizational aspects, namely: i. 28% disagreed that students had a positive impact in assistencial care; ii. 29% - disagreed on the model of the Residency); iii. 29% - disagreed on the assistance provided by the School of Health Sciences. Those aspects deserve particular attention by the SRCG. Nevertheless, even in these items there was a positive impression of over 58% of the clinicians.

Tutors declared almost unanimously to felt pleased with the tutorial experience. Accordingly, a relative small number of tutors (5), stated that would not like to repeat the tutorial experience. In summary, the ratings uncovered a very positive impact of the clinical tutorial experiences.

6. Conclusions

The first experience with the Surgery Residency at ECS was very successful. The programme was put to practice, ratings were in very good levels and students have seen their expectations met. Student evaluations, with an average mark of 15/20, were very satisfactory (the three failures can be remedied in the examination that will take place in July). The ratings results are particularly interesting when one considers that the students now have four previous experiences with Residencies of the undergraduate program and are thus able to rate it relative to previous experiences. The challenge of successfully involving 157 new faculty at once within a different teaching & learning philosophy, far from being exhausted, came to a good start. The impressions of clinical supervisors and tutors have been documented, revealing an overall satisfaction with the experience, They are impressed with the quality of the fifth graders and they have left the view that students produced a beneficial impact on the services where they have resided. In their 5th year, the students demonstrate a knowledge of content, skills and attitudes that can give the School confidence on the effectiveness of the Medical undergraduate degree.

Appendixes

APPENDIX 1

List of Tasks and duties
Surgery Residency

Competence in clinical skills or clinical procedures has been defined according to three levels:

Level 1 Awareness and understanding of the reasons for carrying out the skill/procedure or have seen it demonstrated
Level 2 Ability to carry out the skill/procedure under supervision
Level 3 Ability to carry out the skill/ procedure without supervision or as routine

Procedures for General and Vascular Surgery	**Level**
Pre-operatory assessment	3
Arterial pulse assessment	3
Anorectal exam with anoscopy	3
Self preparation for entering surgical rooms	3
Participation in surgical intervention	1
Orotraqueal intubation	1
Raquianestesy	1
Superficial wounds treatment	3
Follow-up of operatory wound	3
Remove suture stitches	3
Nasogastric Intubation	2
Venopuncture and peripheral vein catheterization	3
Arterial Puncture	2
Administration of S.C., I.M. e I.V. injectables	3
Catheterization of the central vein	1
Algaliation	2
Paracentesis	2
Thoracocenthesis	1/2
Thoracic drainage	1
Application of local anaesthesia	1
Drainage of superficial abscesses	1
Coetaneous lesions removal	1
Care with digestive ostomies	1
Gaining informed consent	1
Simple sutures	2
Provide bad news to patients/relatives	1

List of tasks (minimal) to achieve during the residency:
Minimal number of:
_4_New admissions (clinical admissions and physical examination)

Procedures for Gynaecology	**Level**
Exam with speculum	3
Pap test	3
Gynaecological examination (pelvic exam)	2
Rectal touch	2
Small local surgeries	1
Colposcopy	1
Ultrasound (pelvic)	1
Clinical breast exam	2
Clinical History	3
Patient admission	3
Algaliation	2
Cervical Polipectoctomies	2
Histeroscopy	1
Techniques of the endometrial biopsy	1
Coetaneous and vulvular biopsies	2
Mammary nodule biopsy	1
Assistance to local surgeries	2
Assistance to gynaecological surgery	1

Procedures for Urology	**Level**
Urological Clinical History	3
Urological Clinical Exam	3
Rectal exam	2
Algaliation	2
Urologic ultrasound exam	1
Endourology	1
Getting acquainted with specific urologic material	1
Urinary derivations	1

Procedures for Ophthalmology	**Level**
Basic knowledge of surgical techniques actually used in ophthalmology	1

Auxiliary means of diagnosis and therapeutic in ophthalmology	1
Determination of visual acuity	3
Accomplishment and interpretation of the visual fields of confrontation	3
Evaluation of ocular movements	3
Observation of the anterior segment	3
Direct ophthalmoscopy exam	3
Evaluation of the pupilar reflex	3

Procedures for ENT	**Level**
ENT physical exam	3
Therapeutic proposal and its fundaments	3
Surgical proposal and its fundaments	3
Patient assessment	3
Requisition and interpretation of the subsidiary simple and ENT specific exams (audiogram and timpanogram)	2
Requisition and interpretation of ENT imagiology exams	2
Getting informed consent for surgery	2
Evaluation of clinical situations, determinate priorities and required measures for solving common problems	2
Nasogastric intubation	2
Endoscopy of the superior respiratory pathways	1
Wound treatment	2
Nutrition	2

Procedures for Orthopaedics and Trauma	**Level**
Assessment of a patient in traummatology	3
Attitudes before: a closed/exposed fracture and dislocation	1
Reduction of a shoulder dislocation	1
Reduction of a fracture by traction	1
Accomplishment of clinical history in Orthopedics	3
Accomplishment of physical exam: (vertebral column, shoulder, elbow, wrist, hand, pelvis, hip, knee, ankle, foot)	3
Assessment of the arterial pulses	3
Analysis of capillary reflex	3
Assessment of the functioning of the nerve: (radial, cubital, median, peronial, tibial, anterior, tibial posterior)	3
Research of reflexes on the: (Superior limb, Inferior limb)	3
Research of coetaneous sensitivity and sensitive dermatome	3
Articular punction	1
Accomplishment of peritendinous infiltration	1
Placement of elastic bandage	3
Accomplishment of posterior crusade	3
Accomplishment of immobilization against thorax - Gerdy/Velpeau	1/2
Accomplishment of the Robert Jones bandage	1/2
Placement of an aluminum splint in the finger	1
Placement of a splint for: (provisory immobilization, superior/inferior limb)	3
Accomplishment of closed cast	1
Assessment of immobilization risks	3
Accomplishment of: coetaneous and skeletal traction	1
Surveillance of a patient in traction	3
Preparation of the skin for orthopedic surgery	3
Surveillance and attitudes before the surgical drains	3
Surveillance of operatory wound	3
Prevention of scares	3

Procedures for Neurosurgery	**Level**
Summary and objective neurological exam	3
Surgical proposal	1
Interpretation of CT and MR images	2
Approach of patient with cranial trauma	3
Approach of patient with radicular syndromes	3

APPENDIX 2

List of clinicians involved in learning/teaching activities in the clerkships

Surgery Residency

Clerkship	Hospital	Supervisor	Tutors
General and Vascular Surgery	HSM	Mesquita Rodrigues	Joaquim Falcão Ricardo Pereira Sandra Martins Maia da Costa Fernando Pereira Mário Reis Sónia Vilaça Pedro Koch Conceição Antunes Fernando Manso Virgínia Soares Carlos Gomes
	HSO	Carlos Santos	Jorge Magalhães Salete Ferreira António Abreu Carlos Alpoim Manuel Ferreira Lima Terroso Celso Carilho
Neurosurgery	HSM	Carlos Alegria	Eva Gonzalez José António Costa Manuel Afonso Pinto Rui Almeida
Gynecology	HSM	Domingos Jardim Pena	Arlindo Ferreira Luis Castro Etelvina Cruz José Gabriel Silva Maria Teresa Silva Maria José Rocha
	HSO	Pedro Vieira de Castro	Pedro Oliveira Maria José Pires José Manuel Furtado Fernanda Tavares José Vivas de Freitas
Urology	HSM	Américo Ribeiro dos Santos	António Lemos de Sousa Manuela Mesquita Mário Cerqueira Vila Mendes Miguel Mendes
	HSO	Jaime Faria	Carlos Guimarães
Ophthalmology	HSM	Vitorino Ribeiro	Fernanda Silva Carla Pinto José Manuel Lemos
	HSO	Luis Gonçalves	António Fernandes
ENT	HSM	Tiago Godinho	Francisco Oliveira Vicente Azevedo Higino Fonseca Luis António Dias
	HSO	Fausto Fernandes	Angelino Barroso Castro Silva Carlos Matos Nuno Lousan Rui Fonseca
Orthopedics and Trauma	HSM	Agostinho Veloso	António Pedro Malheiro Helena Ferreira Mário Ventura
	HSO	Joaquim Ribeiro	Ramiro Fidalgo Victor Gomes Cruz Carlos Vilela Gomes António Gomes Cruz Manuel Loureiro

APPENDIX 3

Cognitive programme

Surgery Residency

Chairpersons

General and Vascular Surgery: Dr. Mesquita-Rodrigues
Dr. Carlos Santos
Locomotors System: Prof. Espregueira-Mendes
Dr. Carlos Alegria
Genital-Urinary System: Dr. Américo Santos
Dr. Pedro Vieira de Castro
Dr. Jardim da Pena
Dr. Jaime Faria
Organs of the Senses: Dr. Luís Gonçalves
Dr. Vitorino Ribeiro
Dr. Fausto Fernandes
Dr. Tiago Godinho

Data	Tema	Orador
	Module 1 - General and Vascular Surgery	
19/09/05	Politraumatizado: traumatismo abdominal	Dr. Fernando Ferreira
	Politraumatizado: traumatismo torácico	Dr. Ricardo Pereira
	Politraumatizado: TCE	Dr. Afonso Almeida Pinto e Dra. Eva González e Dr. Jaime Rocha
20/09/05	Hérnias da parede abdominal.	Dr. Pedro Koch
	Queimaduras	Dr. Joaquim da Costa
22/09/05	Tiróide e glândulas endócrinas	Dr. António Abreu e Dr. Teixeira Gomes
26/09/05	Mama (1/2 tempo).	Dr. L. Terroso
	Trombovenosa e tromboembolismo	Dr. Celso Carrilho
28/09/05	Patologia Venosa.	Dr. Miguel Salazar
	Urgências arteriais.	Dra Alexandra Canedo
	Patologia linfática	Dr. Amílcar Mesquita
	Module 2 - Locomotors System:	
29/09/05	Princípios do tratamento, fisiopatologia e complicações das fracturas e luxações. Regras das Imobilizações	Dr. Fernando Castilho e Dr. Pereira Mendes
	Fracturas, luxações e lesões nervosas do membro superior	Dr, César Igreja e Dr. Paulo Coutinho
	Fracturas, luxações e lesões nervosas do membro inferior	Dr. Helena Vaz e Dr. Nuno Tavares
03/10/05	Patologia do punho e mão	Dr. Mário Ventura e Dr. Eurico Bandeira
	Patologia do tornozelo	Dr. Paulo Amado e Dr. Nuno Sevivas
	Patologia do pé	Dr. Manuel Vieira da Silva
06/10/05	Patologia da bacia e anca	Dr. Vítor Caetano e Dr. Joaquim Ribeiro
	Patologia do ombro	Dr. Carlos Vilela e Dr. Joaquim Ribeiro
	Patologia do cotovelo	Dr. Pêro Silva e Sr. Rui Pinto
07/10/05	Patologia vertebral: cervical e lombar	Dr. Paulo Cibrão-Coutinho
	Síndromes radiculares	Dr. Afonso Almeida Pinto e Dr. Jaime Rocha e Dr. José António da Costa
10/10/05	Patologia intracraniana não traumática	Dr. Carlos Alegria
13/10/05	Traumatologia desportiva	Prof. Doutor Espregueira Mendes e Dr. Pedro Varanda
	Patologia do joelho.	Prof. Doutor Espregueira Mendes e Dr. João Lourenço e Dr. Alberto Monteiro
14/10/05	Imagem no sistema locomotor	Dr. Cláudio Laguna
	Tumores ósseos e tecidos moles	Dr. Pedro Cardoso
	Infecções ósseas e articulares	Dr. Gomes Cruz e Dr. Joaquim Ribeiro
18/10/05	Ortopedia infantil e do adolescente.	Dr. Álvaro Gil, Dr. Bartoli Tinoco,Dr. Frederico Teixeira Prof. Doutor Carlos Vaz
	Artrite e osteoporose	Dr. Gonçalo Borges
	Princípios da reabilitação do sistema locomotor	
	Module 3 - Genital-Urinary System	
24/10/05	Dor em Patologia Urológica	Dr. Mário Cerqueira Alves
		Dr. Miguel Mendes
25/10/05	Infecções em Ginecologia (DST e outras infecções genitais mais comuns)	Dra. Maria José Rocha
	Dor pélvica	Dra. Etelvina Cruz
	Endometriose	Dra. Carla Monteiro
	Fibromiomas	Dr. Luís Castro
27/10/05	Menopausa e THS	Dra. Ana Lanzinha
	Infertilidade	Dra. Sofia Dantas
	Contracepção	Dra. Alice Vilas-Boas
28/10/05	Pavimento Pélvico – prolapso genital, incontinência urinária e fistulas	Dr. Vivas de Freitas
	Oncologia ginecológica	Dr. Pedro Vieira de Castro
	Rastreio oncológico	Dr. Arlindo Ferreira
31/10/05	Hematúria	Dr. Manuel Vila Mendes

03/11/05	Saúde do Homem	Dr. Carlos Guimarães
	Module 4 - Organs of the Senses:	
07/11/05	Generalidades da ORL Patologia do Ouvido	Dr. Fausto Fernandes
08/11/05	Olho vermelho Diminuição da acuidade visual	Dr. José Manuel Lemos, Dra. Carla Ferreira, Dr. Fernando Silva
10/11/05	Nariz e seios perinasais Boca e Faringe	Dr. Fausto Fernandes Dr. Nuno Lousan
11/11/05	Referênciação em Oftalmologia Emergências em Oftalmologia Movimentos Oculares	Dr. António Fernandes
14/11/05	Patologia Cérvico-Facial	Dr. Tiago Godinho Dr. António Manuel Gonçalves
	Módulo 1 - General and Vascular Surgery	
21/11/05	Esófago	Dr. M.Nora
22/11/05	Estômago e duodeno	Dr. C. Alpoim
23/11/05	Patologia Colo-rectal	Dr. Mesquita Rodrigues
28/11/05	Fígado e Vias biliares	Dr. Joaquim Falcão Dr. Mário Reis Dra. Sónia Vilaça
29/11/05	Vias biliares e pâncreas	Dr. Costa Maia
02/12/05	Patologia anal e perianal. Nutrição em Cirurgia	Dr. Costa Pereira
05/12/05	Dor abdominal. Peritoneu e patologia apendicular	Dr. Gil Gonçalves

APPENDIX 4

Assessment Methodology

Items assessed at the Hospitals (requirements for promotion on a 0-20 scale)

1. Professional behaviour[3] (10)
2. Clinical skills[2] (10)
3. Patient examination and discussion: observation (clinical story e physical examination) of one patient (10)

Written examinations (requirements for promotion on a 0-20 scale)

4. Module examinations - Multiple Choice tests at the conclusion of each module (7,5 in every examination)
   Final grade: weighed average (Module1 x number of weeks + Module2 x number of weeks + …)
5. Final integration exam - with Multiple Choice Questions and Clinical cases (7,5)

To be promoted, each student should have attained an weighed average equal or higher to 9,5;
Grades from 7,5 to 9,5 in a module exam are admitted, in accordance with the assessment regulation of the School of Health Sciences.

Final grading

Surgery Residency final grade = 20% * (1 + 2 + 3 + 4 + 5)

[3] Adaptation of the clinical student evaluation grid designed by the Jefferson Medical College (source: 2003-04 Student Handbook).

Annex II

Medicine II Residency

Index

1. Overview

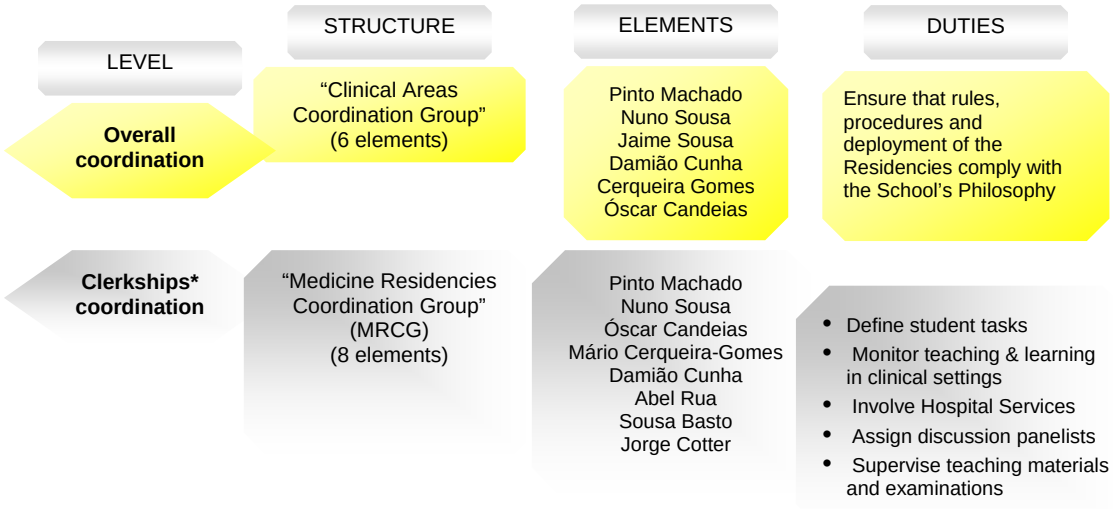
The present report summarizes the organization and implementation of the 5th year Medical Degree's Medicine II Hospital Residency (MIIHR) at University of Minho's School of Health Sciences. The document presents and analyses the student marks and the ratings gathered on the Residency.

2. General organization and coordination of the Medicine II Residency

Medicine II is the second of the Medical Degree Programme's 5th year Hospital Residencies. 2005 was the first edition of this Residency which integrated seven clinical clerkships - i. Internal Medicine, ii. Neurology, iii. Infeccious Diseases, iv. Hematology, v. Oncology, vi. Nephrology and vii. Dermatology - and cognitive modules on five topics: i. Nervous System, ii. Infecciology, iii. Hemato-Oncology, iv. Nephrology and v. Skin and Connective Tissues.

The clerkships were held in the two Hospitals affiliated to the School: the "HSM" (HSM) in Braga and the "HSO" (HSO), in Guimarães, under the general guidelines set by the Clinical Areas Coordination Group (CACG).

The implementation and coordination of this particular Residency was under the responsibility of the Medicine Residencies Coordination Group (MRCG) - which also designs the Medicine I Residency program in the 4th year - working under the Residencies' general framework (see outline below). The two of the MRCG's members that originated from the affiliated Hospitals - Dr. Sousa Basto (HSM) and Dr Jorge Cotter (HSO) - were the Supervisors of the Residency at their Institutions.



The MRCG responsibilities fell into different levels: i. the definition of the Residency's learning objectives, comprising clinical content, (predominantly lectured on campus seminars), skills and professional behaviour (mainly acquired/developed in Hospital rotations in groups of four); ii. the precise definition of the clinical procedures list (skills and tasks); iii. the selection of the assessment process and the pass/fail criteria; iv. the communication of the program to the Hospital tutors and to invited seminar speakers, respectively through the associated Supervisor and Chairperson; v. the design and the provision of questions and materials for examinations.

3. Clerkships

The responsibility for clinical teaching was shared with Hospital Supervisors, which assigned tutors (on a ratio of 1 tutor/ group with 4 or 5 students - the list is presented in Appendix 2), guaranteed an

adequate involvement of clinical staff (physicians and nurses) and scheduled the rotations in accordance with each Hospital's specific contexts (see Table below).

Table 1 – Distribution calendar of rotations within affiliated Hospitals (weeks)

	Internal Medicine	Neurology **	Infecciology	Imuno-hematology + Oncology	Nephrology	Dermatology
HSM	6	2	*	2	*	2
HSO	9	1	*	1	*	1

* These rotations were done in Internal Medicine

Students rotated daily (9.00-13.00h) through services, in groups of 4/5 accompanied by a tutor.
Daily hospital duties included: 1) patient admissions (18); 2) patient observations and history taking in simulated records (colour files stapled to the patient's process); 3) the performance (training) of the planned procedure list (Appendix 1); 4) attendance of the tutor/supervisor's practice; 5) participation in the Medical Department/Service meetings.

4. Seminars

The cognitive programme was addressed in three weekly case-based Seminars (the calendar is presented in appendix 3). The Seminars were attended by the whole cohort of 5th year students and consisted on case discussions, led by "Discussion panels" (one for each of the five modules). Chairpersons shared the responsibility of defining the topics, for selecting the speakers – listed in Appendix 3 - for the quality of the course materials (including bibliography, audiovisuals and the texts that were uploaded on the School's intranet) and for the written examinations. .
The seminars appointed to each module are presented in the table below.

Table 2 – Distribution of the number of sessions per topic and their chairpersons

Module	Chairpersons	Number of Sessions
Nervous System	Prof. N.Sousa Dr. Ramalho Fontes	5
Infecciology	Prof. António Megre Sarmento Prof. Rui Sarmento	8
Hemato-oncology	Prof. Óscar Candeias Dra Anabela Correia	8
Nephrology	Dr. Jorge Cotter	5
Skin and Connective Tissue Disorders	Dr. Abel Rua Dr. Sousa Basto	5

As a rule, the MRCG adopted "Kasper, D; Braunwald, E.; Fauci, A.; Hauser, S.; Longo, D. and Jameson, J.L. (2005). Harrison's Principles of Internal Medicine. 16th Ed. McGraw-Hill" as the major bibliographic source[4], which was complemented, whenever suitable, with other references.

5. Assessment

5.1.Assessing student achievements

The following is an overview of the assessment procedure applied in the Residency, which is detailed in Appendix 4. In agreement with the School's principle that students should demonstrate knowledge, skills and attitudes, the assessment[5] was based on five parameters, equally weighed (20%) in the

[4] Textbook used for the National exams of access to internship.
[5] The Medical Education Unit compiled and analysed all the grades and is responsible for the following computations and interpretations.

Residency final mark: professional behaviour[6], skills[2], patient examination and discussion (evaluated at the Hospitals), module written exams and a final integration exam (evaluated at the School). Attention was paid to the demands of the MRCG and the criteria advanced by the CACG. Requirements such as format, logistics of examinations, grading, pass-fail decisions, satisfactory residency completion, recommended readings and others were announced to the students prior to the beginning of the Residency.

5.2.Results and commentaries

The distribution of the final marks are presented in table 3. Table 4 refers to the marks at the time of completion of the Residency - the four students that did not succeed at that time were re-examined, and they actually approved the examination. Hence, all students succeeded in the program.

Table 3 – Final Grade distribution

Number of Students	N° of Students (%)						Average ± Standard Deviation
	0-8	0-9	10 - 13	14 - 15	16 – 17	18 - 20	
	Failed	Poor	Fair	Good	Very good	Excellent	
50	0(0)	0(0)	5(10)	33(66)	11(22)	1(2)	15±1

There was predominance (66%) of "*good*" performances. Twelve students were "*very good*" or "*excellent*". No students failed the course. The grades computed from the five parameters averaged 15/20.

Table 4 – Discriminative grade distribution

	N° of Students (%)						Average ± Standard Deviation
	0 – 7	8-9	10 - 13	14 - 15	16 – 17	18 – 20	
	Failed	Poor	Fair	Good	Very good	Excellent	
Hospital Exam	0(0)	0(0)	2(4)	29(58)	18(36)	1(2)	15±1
Professionalism	0(0)	0(0)	0(0)	3(6)	28(56)	19(38)	17±1
Skills	0(0)	0(0)	0(0)	4(8)	28(56)	18(36)	17±1
Module written examinations	0(0)	0(0)	24(48)	18(36)	7(14)	1(2)	13±2
Integrated exam	4(8)	7(14)	29(58)	8(16)	2(4)	0(0)	11±3

A detailed analysis of the student's performance unveils global differences in the five parameters (see the table above). The grades for professionalism and skills were all equal or greater than 14/20 - 94 and 92% were "*very good*" or "*excellent*". Grades in the written tests were the lowest. There were only 20% of the students with grades *"good"* or higher in the integrated examination. The majority of students performed "fair" in module as well as in integrated written exams (48% and 58%, respectively).

Similar to what had happened with this cohort of students in the previous year, the high grades obtained in clinical settings indicate a considerable correspondence between student's prior training and what the Hospital tutors considered to be adequate standards for a 5th year undergraduate resident. The less positive aspects were the lower grades registered for the written components. Student marks are, nevertheless, very good.

[6] Adaptation of the clinical student evaluation grid designed by the Jefferson Medical College (source: 2003-04 Student Handbook).

5.3.Student ratings: service and tutor

Student ratings on the Residency were assessed using a ten-item multiple choice questionnaire, with a 4 point Likert-type scale format (from Strongly disagree to Strongly agree). The questions were the following:

11. I have accessed all the service components (eg: meetings, visits, examinations, etc.)
12. I was stimulated to share my ideas, knowledge and doubts
13. The tutor was available to answer questions and to clarify doubts
14. Tutors' explanations were organized and clear
15. The tutor was keen on letting me contact patients with different pathologies
16. The tutor helped to me to carry through clinical procedures effectively
17. The tutor dominated the concepts, phenomena and clinical practice
18. I felt supported and supervised
19. He's/She's an excellent tutor
20. What I've learned in this service was useful

5.4.Results and Commentaries

For a more straightforward discussion and easier visual interpretation of the data set, the following criteria were used:

Table 5 - Criteria to define the relative performance of each item for faculty, based on the favourable responses* of the answers for each question

Qualitative appreciation: based on the favorable responses* to question i "He/She's an excellent tutor", according to the following criteria

Favorable Responses * (%)	*90-100*	*75-89*	*50 – 74*	*25 – 49*	*0 – 24*
Qualitative Classification	Excellent**	Very Good	Good	Week	Very week

**agree + completely agree*
***if question i gathers a % of answers equal or higher than 50%*

General results are included in table 6, which correspond to the ratings collected for the same rotation, in both Hospitals.

Tables 6.1 to 6.4 Positive values associated to each question, in the different rotations (%)

Internal Medicine, Infecciology and Nephrology

year	Scale	a	b	c	d	e	f	g	h	i	j
2005-2006	Completely Disagree	0	7	7	7	7	14	0	15	0	4
	Disagree	14	17	7	14	34	28	10	33	31	26
	Agree	28	45	34	45	28	41	35	33	41	37
	Completely Agree	58	31	52	34	31	17	55	19	28	33
	Favourable Responses*	86	76	86	79	59	58	90	52	69	70

Neurology

year	Scale	a	b	c	d	e	f	g	h	i	j
2005-2006	Completely Disagree	0	0	0	5	0	5	0	0	5	0
	Disagree	0	0	0	0	0	0	0	0	0	5
	Agree	27	45	27	31	36	36	18	48	36	24
	Completely Agree	73	55	73	64	64	59	82	52	59	71
	Favourable Responses*	100	100	100	95	100	95	100	100	95	95

Imuno-Hemato-oncology

year	Scale	a	B	c	d	e	f	g	h	i	j
2005-2006	Completely Disagree	0	0	0	0	0	0	0	0	0	0
	Disagree	4	0	8	0	4	12	4	12	4	8
	Agree	46	38	23	31	58	62	8	40	46	44
	Completely Agree	50	62	69	69	38	26	88	48	50	48
	Favourable Responses*	96	100	92	100	96	88	96	88	96	92

Dermatology											
year	**Scale**	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**
2005-2006	Completely Disagree	0	0	0	0	0	4	0	4	0	0
	Disagree	0	4	4	8	17	9	0	14	9	0
	Agree	43	35	30	26	17	30	26	18	30	19
	Completely Agree	57	61	65	66	66	57	74	64	61	81
	Favourable Responses*	100	96	96	92	83	87	100	82	91	100

The rotations that were developed in the Dermatology of the two Hospitals, gathered excellent ratings. Very positive ratings are also evident for the Hemato-oncology and Neurology rotations.

The data for the rotations of Internal Medicine, Infecciology and Nephrology were computed ensemble, since some tutors agglutinated the tutorial role on more than a single service. Results are very positive. In particular the majority of students recognize the medical expertise of the tutors and their availability. Nevertheless, the fact that 31% of the responses did not evaluate the tutors as excellent indicates that there is space for improvements. Coincidentally, 30% of the students disagrees that their learning had been useful. The roots for this comment can not be found in denials of access to service components (item a) or in confusing explanations by tutors (item d), but might be related to a wish for contact with a broader mix of pathologies (item e) or of increased supervision (item h).

Table 7 includes data computed for the clerkship services separately for each one of the two Hospitals: Hospital S. Marcos (HSM) and Hospital Sra da Oliveira (HSO).

Table 7: Favourable responses associated to each question, for different services (%)

Question	**Internal Medicine, Infecciology, Nephrology**		**Neurology ***	**Immuno-haemato-Oncology**		**Dermatology**	
	HSO	**HSM**	**HSM**	**HSO**	**HSM**	**HSO**	**HSM**
a.	100	83	100	88	100	100	100
b.	100	71	100	100	100	100	92
c.	100	83	100	75	100	100	92
d.	100	75	95	100	100	100	85
e.	100	50	100	88	100	100	69
f.	100	50	95	75	94	100	77
g.	100	88	100	100	94	100	100
h.	100	41	100	75	94	100	67
i.	100	63	95	88	100	100	85
j.	100	64	95	75	100	100	100

The ratings gathered for the rotations of Neurology and of Haematology + Oncology at HSM and of Dermatology, Internal Medicine at HSO are exemplary. The analysis/institution is revealing in what concerns the programs' topics of lesser strength. The data suggest that the bedside teaching at the rotations of Internal Medicine, Infecciology, Nephrology in HSM could evolve, particularly in what relates to items e,f and h. It is evident that students feel a need for more clinical supervision. According to students, the remaining rotations progressed to a quite satisfactory level in most of the aspects that were inquired.

5.5.Student ratings: seminars

Information about student perceptions on the Seminars was collected with a thirteen-item multiple choice questionnaire, using a four point Likert-type response format (from Strongly disagree to

Strongly agree). Questionnaires were filled at the end of each session and results analysis was similar to the one presented on tutor ratings. The questions were the following:

a. The lecture was dynamic
b. The contents were approached with clarity
c. PowerPoint presentations were well organized and structured
d. The way the session was organized captivated my interest
e. Theories and concepts were linked to practice
f. Recent developments in the area were discussed
g. The recommended bibliography was useful
h. I felt encouraged to participate in case discussions
i. I understood and assimilated the seminar's contents
j. The seminar corresponded to my expectations
k. The seminar integrated in the area's/module's objectives
l. The seminar was useful to support the practical part of the residency
m. It was an excellent seminar

5.6.Results and Commentaries

For a more straightforward discussion and easier visual interpretation of the data set, the following criteria were used:

Table 8 - Criteria to define the relative performance of each item for faculty, based on the favourable responses* of the answers for each question

Qualitative appreciation: based on the favorable responses* to question m *"It was an excellent seminar"*, according to the following criteria

Favorable Responses * (%)	*90-100*	*75-89*	*50 – 74*	*25 – 49*	*0 – 24*
Qualitative Classification	Excellent**	Very Good	Good	Week	Very week

**agree + completely agree*
***if question m gathers a % of answers equal or higher than 50%*

Legend:

Scale option chosen more often
Question with highest % of favorable responses
Question with lowest % of favorable responses
Question with less than 50% of favorable responses

The evaluation includes the positive values collected for all the lecturers. Those ratings, organized by subject, can be observed in the tables below.

Table 9.1 to 9.5. Average (positive values) for each subject, in the respective set of its seminars (%)

Nervous System

year	Scale	a	b	c	d	e	f	g	h	i	j	k	l	m
2005-2006	Completely Disagree	1	0	0	1	0	0	0	1	2	1	2	0	1
	Disagree	10	3	2	6	2	2	5	5	5	10	6	2	2
	Agree	53	50	39	56	42	60	52	63	53	66	60	49	40
	Completely Agree	36	47	59	37	56	38	43	31	40	23	32	49	57
	Favourable Responses*	89	97	98	93	98	98	95	94	93	89	92	98	97

Infecciology

year	Scale	a	b	c	d	e	f	g	h	i	j	k	l	m
2005-2006	Completely Disagree	3	0	0	2	0	0	5	2	6	0	2	0	3
	Disagree	4	3	9	7	2	1	4	5	13	6	6	0	3
	Agree	40	32	43	38	35	38	46	43	31	48	43	35	33
	Completely Agree	53	65	48	53	63	61	45	50	50	46	49	65	61
	Favourable Responses*	93	97	91	91	98	99	91	93	81	94	92	100	94

Haemato-oncology

year	Scale	a	b	c	d	e	f	g	h	i	j	k	l	m
2005-2006	Completely Disagree	3	2	1	6	0	0	6	4	11	6	5	0	2
	Disagree	19	14	8	25	4	2	20	19	27	21	19	4	9
	Agree	52	52	52	43	59	62	34	53	35	52	52	56	49

	Completely Agree	26	32	39	26	37	36	40	24	27	21	24	40	40
	Favourable Responses*	78	84	91	69	96	98	74	77	62	73	76	96	89

Nephrology

year	Scale	a	b	c	d	e	f	g	h	i	j	k	l	m
2005-2006	Completely Disagree	0	1	3	2	0	0	1	1	0	3	1	0	0
	Disagree	1	3	4	4	1	3	11	3	5	7	6	1	3
	Agree	37	28	28	28	20	41	26	32	30	38	35	28	31
	Completely Agree	62	68	65	66	79	56	62	64	65	52	58	71	66
	Favourable Responses*	99	96	93	94	99	97	88	96	95	90	93	99	97

Dermatology and Connective Tissue Disorders

year	Scale	a	b	c	d	e	f	g	h	i	j	k	l	m
2005-2006	Completely Disagree	5	1	1	4	2	1	9	3	3	3	2	4	4
	Disagree	20	8	6	21	2	9	13	16	19	20	23	4	16
	Agree	43	47	48	42	48	53	40	51	43	52	44	54	42
	Completely Agree	32	44	45	33	48	37	38	30	35	25	31	38	38
	Favourable Responses*	75	91	93	75	96	90	78	81	78	77	75	92	80

The majority of the ratings were extremely favourable, regardless of the module or aspect, with minimum percentages of agreement over 80%. The modules of Haemato-oncology and Dermatology were relatively under-rated. In what concerns aspects that could be improved, priority should be given to the dynamism and organization of the seminars (items a, d). Their supportive value to *the practical part of the residency* (item l) was highly appreciated.

5.7.Area ratings

The last evaluation relates to global educational and organizational aspects of the Residency. An eleven-item multiple choice questionnaire, with a six point Likert-type scale format (from Strongly disagree to Strongly agree), included the following questions:

a. I understood the learning objectives
b. The contents were administered in accordance with the objectives.
c. I have gained/developed abilities that I think were useful.
d. The amount of work was adjusted to learning programmed time.
e. Evaluation was consistent with the goals.
f. During my learning process I had the essential supervision.
g. The activities were well organized
h. The suggested/available means were appropriate.
i. My previous education gave me the essential knowledge for this area/course.
j. Globally, I think that the faculty is excellent.
k. Globally, I think that this curricular unit is excellent.
l. Globally, the area promoted my personal development

5.8.Results and Commentaries

For a more straightforward discussion and easier visual interpretation of the data set, the following criteria were used:

Table 10 - Criteria to define the relative performance of each item for faculty, based on the favourable responses* of the answers for each question

Qualitative appreciation: based on the favorable responses* to question j "Globally, I think that this curricular unit is excellent", according to the following criteria

Favorable Responses * (%)	*90-100*	*75-89*	*50 – 74*	*25 – 49*	*0 – 24*
Qualitative Classification	Excellent**	Very Good	Good	Week	Very week

**agree + strongly agree + completely agree*
***if question ij gathers a % of answers equal or higher than 50%*

Legend:

- Scale option chosen more often
- Question with highest % of favorable responses
- Question with lowest % of favorable responses
- Question with less than 50% of favorable responses

The evaluation includes the positive values collected for the area. Those ratings, organized by subject, can be observed in the table below.

Table 11. Positive values associated to each question (%)

year	Scale	a	b	c	d	e	f	g	h	i	j	k	l
2005-2006	Completely Disagree	0	0	0	8	0	0	0	0	0	0	0	0
	Strongly Disagree	0	0	0	14	2	3	0	2	2	0	0	0
	Disagree	0	2	0	38	26	18	10	8	3	20	10	0
	Agree	42	50	30	20	46	36	56	59	51	28	36	31
	Strongly Agree	38	38	45	20	18	28	26	26	36	44	41	41
	Completely Agree	20	10	25	0	8	15	8	5	8	5	10	28
	Without an opinion	0	0	0	0	0	0	0	0	0	3	3	0
	Favourable Responses*	100	98	100	40	72	79	90	90	95	77	87	100

Regarding general aspects of the area, the students consider that a better match between the amount of work and the time available for the programme should be sought. There was unanimous agreement on the contribution of the area to the personal development of students and the vast majority of students qualify the area as excellent. Altogether, the results suggest that this has been a very positive edition of the Residency.

5.9.Tutor ratings: students, model, satisfaction

In 2005-2006 and for the first time, the School of Health Sciences was able to gauge the Hospital Tutors on the Residencies. The former was done with a questionnaire devised by the Medical Education Unit in tight collaboration with the CACG. Tutor ratings were gathered on student's attributes, on their impact on the Service, on the Residencies' model and on tutor's satisfaction at the completion of the Residency. The twelve-item multiple choice questionnaire, with a six point Likert-type scale format (from Strongly disagree to Strongly agree), included the following questions:

a. The interest of the students in the Residency was genuine
b. Students Knowledge was adequate for this Residency
c. The skills of the students at the entrance of the Residency were adequate
d. Students Attitude was adequate in this Residency
e. Students had a positive impact on the assistencial care
f. Students had a positive impact on the my professional activity
g. Globally, the Residency's model was adequate
h. The School of Health Sciences provided me with the necessary assistance and support
i. I developed a good relationship with the tutees
j. This experience as a tutor has raised my interest in teaching
k. I feel pleased with having been a tutor
l. I would be very pleased to be a tutor again

Tutors answered on paper copies of the questionnaires that were distributed at the end of the Residency and, with an important collaboration from the respective supervisors, returned the forms to the School of Health Sciences. Tutor responses were computed using an SPSS suite (SPSS 14.0).

5.10. Results and Commentaries

For a more straightforward discussion and easier visual interpretation of the data set, the following criteria were used:

Table 12 - Criteria based on the favourable responses* of the answers for each question

Legend:

Scale option chosen more often
Question with highest % of favorable responses
Question with lowest % of favorable responses
Question with less than 50% of favorable responses

The evaluation includes the positive values collected for all the lecturers. Those ratings, organized by subject, can be observed in the table below.

Table 13. Positive values associated to each question (%)

year	Scale	a	b	c	d	e	f	g	h	i	j	k	l
2005-2006	Completely Disagree	0	0	0	0	0	0	12	5	0	0	0	16
	Strongly Disagree	0	5	0	0	5	10	0	10	0	10	10	0
	Disagree	5	35	31	10	50	26	35	40	0	11	5	0
	Agree	50	35	53	25	35	32	29	25	25	42	37	21
	Strongly Agree	20	25	16	35	5	11	24	20	50	26	37	37
	Completely Agree	25	0	0	30	5	21	0	0	25	11	11	26
	Without an opinion	0	0	0	0	0	0	0	0	0	0	0	0
	Favourable Responses*	95	60	69	90	45	64	53	45	100	79	85	84

**agree + strongly agree + completely agree*

Globally, the input reveals highly positive appreciations. These were overwhelming for students attributes - their interest and attitudes – for the tutor/tutee relationship developed during the tutorial experiences (good in 100% of the cases).

The three aspects that gathered the least positive tutor ratings refer to organizational aspects, namely: i. 55% disagreed that students had a positive impact in assistencial care; ii. 47% - disagreed on the model of the Residency); iii. 55% - disagreed that the assistance provided by the School of Health Sciences had been sufficient. Those aspects deserve particular attention by the MRCG.

Tutors declared almost unanimously to felt pleased with the tutorial experience. Accordingly, the percentage of tutors who stated they would like to repeat the tutorial experience amounted to 84%. In summary, the ratings uncovered a very positive impact of the clinical tutorial experiences.

6. Conclusions

Medicine II is a Residency with a complexity of its own, due to the variety and number of topics, clerkships and faculty that make the programme. Nevertheless, its first edition was very successful. The approval rate was 100%, student ratings were very favourable and tutors appreciated student commitment to the programme. The ratings suggested what look like priority aspects for changes. Forthcoming editions may well have more success.

Appendixes

APPENDIX 1

List of Tasks and duties
Medicine II Residency

Competence in clinical skills or clinical procedures has been defined according to three levels:

Level 1 Awareness and understanding of the reasons for carrying out the skill/procedure or have seen it demonstrated

Level 2 Ability to carry out the skill/procedure under supervision

Level 3 Ability to carry out the skill/ procedure without supervision or as routine

Internal Medicine	Level
Determination of vital signs	3
Airway maintenance – ventilation with a mask	3
Tracheal intubation	1
Allergy tests / Anergy panel	1
Arterial Punction	2
Venous Punction	3
Insetion of peripheral intravenous catheter	3
Insertion of central intravenous catheter	1
Change of dressings / Other care of hygiene to the patient	3
Blood cultures	3
Sputum Culture	3
Fecal occult blood tests	3
EKG	3
Injections (sc, im, iv)	3
Insertion of a Foley catheter	2
Insertion of an NG tube	2
Local Anesthesia	2
Lumbar Puncture	1/2
Evaluation of the Nutritional State	3
Bandaging Wounds	3
Performance and interpretation of urine dipstick/Urinalysis - microscopic	3
Performance and interpretation of the tuberculin test	
Bladder catheterization	3
Accomplishment and interpretation of arterial blood gases	2
Determination of capillary glucose tests	2
Administration of drugs (orally, topically, rectally, i.m.,i.v.)	3
Paracentesis	3
Thoracocenthesis	1/2
Use of ventilation masks	1/2
Use of sterilization techniques	3

List of tasks (minimal) to achieve during the residency:
Minimal number of:
_18_New admissions (clinical admissions and physical examination)

Neurology	Level
Clinical history and neurological examination	3
Discharge report	2
Attending and participation in the service ground-rounds	3
Lumbar punction	1
Assist the performance of an EKG and a Triplex	1
Assist the performance of a CT scan	1
Assist the performance of an angiography	1

Imuno-Hematology	Level
Clinical history in hematological patients	3
Accompany the execution of medullar biopsies	1
Accompany the execution of mielograms	1
Accompany the practical procedures of the transfusion of components to the patients	1

Dermatology	Level
Clinical history (specificities of the dermatological questioning)	3
General exam of the mucous-coetaneous tegument (general rules)	3
Elementary and secondary coetaneous lesions	3
Particularities of the mucous-coetaneous exam	

Palpation	3
Vitro-pressure	3
Demographism	3
Darier's Maul	3
Nikolsky's Maul	3
Complementary exams used in Dermatology	
Specific anlitical exams of the several pathologies	2
Wood's light	3
Material gathering for complementary microbiological exams	2
Direct mycological exam	2
Cultural mycological exam	1
Coetaneous biopsy	2
Epicoetaneous tests	1
Dermatological medical therapy	
Commonly used topics in dermatology (indications and side effects)	2
Wound cleaning (chemically and surgically)	2
Coetaneous bandages	2
Intralesional corticotherapy	1
Dermatological chirurgic therapeutic	
Local and regional anaesthesia	2
Curettage	2
Criotherapy	2
Electrosurgery	1
Surgery with a scalpel	2
Photodynamic Therapy	1
Topic and Sistemic Phototherapy	1
Teledermatology	1

APPENDIX 2

List of clinicians involved in learning/teaching activities in the clerkships

Medicine II Residency

Clerckship	Hospital	Designation	Name
-	HSM	General Residency de Medicina II	Dr. Sousa Basto
-	HSO	General Residency de Medicina II	Dr. Jorge Cotter
Dermatology	HSM	Residency Supervisor	Dr. Sousa Basto
Dermatology	HSM	Tutor	Dra. Maria da Luz Duarte
Dermatology	HSM	Tutor	Dra. Maria Celeste Brito
Dermatology	HSM	Tutor	Dra. Ana Paula Vieira
Dermatology	HSM	Tutor	Dr. José Carlos Fernandes
Dermatology	HSM	Tutor	Dra. Cristina Macedo
Dermatology	HSO	Residency Supervisor	Dr. António Ferrete
Dermatology	HSO	Tutor	Dra. Olga Ferreira
Hemato-oncology	HSM	Tutor	Dra. Teresa Macedo
Hemato-oncology	HSM	Tutor	Dra. Maria Júlia Pereira
Hemato-oncology	HSO	Tutor	Dra. Camila Pinto
Hemato-oncology	HSO	Tutor	Dra. Elisa Torres
Hemato-oncology	HSO	Tutor	Dr. Helena Sarmento
Hemato-oncology	HSO	Tutor	Dra. Natália Oliveira
Hemato-oncology	HSO	Tutor	Dr. Glória Alves
Hemato-oncology	HSO	Tutor	Dr. Emília Lopes
Hemato-oncology	HSO	Tutor	Dr. Pedro Cunha
Hemato-oncology	HSM	Residency Supervisor	Dr. Rui Nabiço
Hemato-oncology	HSO	Residency Supervisor	Dra. Camila Pinto e Dr. Jorge Cotter
Infecciology	HSM	Residency Supervisor	Dr. Sousa Basto
Infecciology	HSO	Residency Supervisor	Dra. Jorge Cotter
Infecciology	HSO	Tutor	Dra. Elisa Torres
Infecciology	HSO	Tutor	Dra. Helena Sarmento
Infecciology	HSO	Tutor	Dra. Natália Oliveira
Infecciology	HSO	Tutor	Dra. Glória Alves
Infecciology	HSO	Tutor	Dra. Emília Lopes
Infecciology	HSO	Tutor	Dr. Pedro Cunha
Nephrology	HSM	Residency Supervisor	Dr. Sousa Basto
Nephrology	HSM	Tutor	Dra. Adelina Ferreira
Nephrology	HSM	Tutor	Dra. Narciso Oliveira
Nephrology	HSM	Tutor	Dr. Ilídio Brandão
Nephrology	HSO	Residency Supervisor	Dr. Jorge Cotter
Nephrology	HSO	Tutor	Dra. Elisa Torres
Nephrology	HSO	Tutor	Dra. Helena Sarmento
Nephrology	HSO	Tutor	Dra. Natália Oliveira
Nephrology	HSO	Tutor	Dra. Glória Alves
Nephrology	HSO	Tutor	Dra. Emília Lopes
Nephrology	HSO	Tutor	Dr. Pedro Cunha
Neurology	HSM	Residency Supervisor	Dr. Ramalho Fontes
Neurology	HSM	Tutor	Dra. Maria Esmeralda Lourenço
Neurology	HSM	Tutor	Dra. Carla Ferreira
Neurology	HSM	Tutor	Dr. Ricardo Maré
Neurology	HSM	Tutor	Dra. Gisela Carneiro
Neurology	HSM	Tutor	Dra. Maria Teresa Pimentel
Neurology	HSM	Tutor	Dr. José Manuel Paz
Neurology	HSO	Residency Supervisor	Dra. Isabel Coelho
Neurology	HSO	Residency Supervisor	Dr. Jorge Cotter
Neurology	HSO	Tutor	Dra. Lurdes Rodrigues
Neurology	HSO	Tutor	Dra. Ângela Silva
Neurology	HSO	Tutor	Dr. Elisa Torres
Neurology	HSO	Tutor	Dr. Helena Sarmento
Neurology	HSO	Tutor	Dr. Natália Oliveira
Neurology	HSO	Tutor	Dr. Glória Alves
Neurology	HSO	Tutor	Dra. Emília Lopes
Neurology	HSO	Tutor	Dr. Pedro Cunha

APPENDIX 3

Cognitive programme

Chairpersons

Module	**Designation**	**Name**
Nervous System	Chairperson	Prof. Nuno Sousa
Nervous System	Chairperson	Dr. Ramalho Fontes
Infecciology	Chairperson	Prof. António Megre Sarmento
Infecciology	Chairperson	Dr. Rui Sarmento
Hemato-oncology	Chairperson	Prof.. Òscar Candeias
Hemato-oncology	Chairperson	Dra. Anabela Correia
Nephrology	Chairperson	Dr. Jorge Cotter
Skin and Connective Tissue	Chairperson	Dr. Abel Rua
Skin and Connective Tissue	Chairperson	Dr. Sousa Basto

Date	**Theme**	**Lecturer**
	Module 1	
03/01 3 horas	Avaliação do doente neurológico	Dr. João Fontes
05/01	Doenças Cerebro-vasculares Demência	Dra. Carla Ferreira Dr. João Fontes
06/01	Doenças Desmielinizantes Doenças do Movimento	Dra. Ângela Silva Dra. Lurdes Rodrigues
09/01	Doença Neurónio Motor e Sistema Nervoso Autónomo Doenças neuromusculares Ataxias e Doenças Medulares	Dr. Ricardo Maré Dr. Álvaro Machado
12/01 3 horas	Epilepsia Doenças Inflamatórias Doenças Infecciosas	Dra. Esmeralda Lourenço Dra. Fátima Almeida Dra. Esmeralda Lourenço
	Module 2	
16/01	SIDA 1	Prof. Rui Sarmento
17/01	SIDA 2	Prof. Rui Sarmento
19/01	Infecção Nosocomial (início 15:00)	Prof. António Megre Sarmento
20/01	Sépsis	Prof. António Megre Sarmento
23/01	Tuberculose	Prof. Rui Sarmento
24/01	Hepatite	Prof. Rui Sarmento
26/01	Zoonoses	Prof. Rui Sarmento
30/01	DST / Patologia do Viajante	Prof. Rui Sarmento
03/02	**Exame**	
	Module 3	
6/02/06	Anemias – carenciais Aplásicas Hemolíticas Doença Crónica	Dr. António Marques
7/02/06	Leucemias agudas Doenças Mielo Proliferativas Crónicas (Policitemias) Síndrome Mielodisplásico	Dr. Fernando Príncipe Dra. Isabel Castro
9/02/06	Linfomas	Dra. Júlia Amorim
10/02/06	Mieloma Transplante células estaminais Neutropenias febrís	Dr. Fernando Príncipe Dr. Manuel Pizarro
14/02/06	Doenças da Coagulação	Dra. Ana Paula Barbosa
16/02/06	Oncologia - Introdução – Oncogénese - Etiologia - Epidemiologia - Prevenção - Vacinação – Imunoterapia	Dra. Teresa Macedo
17/02/06	Oncologia - Diagnóstico - Metastização - Estadiamento - Marcadores - Factores de Prognóstico - Urgências oncológicas	Dra. Júlia Amorim

20/02/06	Leucemia linfoide crónica Oncologia - Terapêutica - Local, regional, sistémica - Terapêutica curativa paliativa - Terapêutica de suporte - Qualidade de vida - Cuidados dos doentes terminais	Dr. José Cabeçadas Dra. Teresa Macedo
24/02/06	**Exame**	
	Module 4	
02/03	Equilíbrio Àcido-Básico Distúrbios do Potássio	Dr. Pedro Cunha e Dr. Jorge Cotter
03/03	Insuficiência renal crónica	Prof. Pestana
07/03	Nefrolitiase Infecções do trato urinário e Pielonefrites	Dr. Carlos Guimarães e Dr. Jorge Cotter
09/03	Glomerulonefrites	Dr. José Fernandes
10/03	Distúrbios hidroelectrolíticos	Dr. Pedro Cunha e Dr. Jorge Cotter
	Module 5	
13/03	Dermatoses Infecciosas: Viroses, Piodermites e Micoses	Dr. Sousa Basto Dr. Teresa Pereira
15/03	Cancro Cutâneo: Carcinomas Epiteliais Mieloma Maligno	 Dr. Sousa Basto Dra. Celeste Brito
16/03	Lúpus Eritematoso sistémico Artrite Reumatóide Arterite Temporal Polimialgia Reumática Púrpura Henoch-Schonlein	Dr. Juan Garcia Dr. Abel Rua
17/03	Dermatoses Eritemo-Descamativas	Dr. Sousa Basto
20/03	Esclerodermia Síndrome de Bechet Dermatonosite/Poliomiosite Síndrome Sjogren	Dr. Guilherme Gomes Dr. Narciso Oliveira
24/03	**Exame**	
31/03	**Exame Integrado**	

APPENDIX 4

Assessment Methodology

Items assessed at the Hospitals (requirements for promotion on a 0-20 scale)

1. Professional behaviour[7] (10)
2. Clinical skills[2] (10)
3. Patient examination and discussion: observation (clinical story e physical examination) of one patient (10)

Written examinations (requirements for promotion on a 0-20 scale)

4. Module examinations - Multiple Choice tests at the conclusion of each module (7,5 in every examination)
   Final grade: weighed average (Module1 x number of weeks + Module2 x number of weeks + …)
5. Final integration exam - with Multiple Choice Questions and Clinical cases (7,5)

To be promoted, each student should have attained an weighed average equal or higher to 9,5;
Grades from 7,5 to 9,5 in a module exam are admitted, in accordance with the assessment regulation of the School of Health Sciences.

Final grading

Medicine II Residency final grade = 20% * (1 + 2 + 3 + 4 + 5)

[7] Adaptation of the clinical student evaluation grid designed by the Jefferson Medical College (source: 2003-04 Student Handbook).

Annex III

Health Centres Residencies II

Index

Abbreviations List

CACG – Clinical Areas Coordination Group

CHCG – Community Health Coordination Group

HCR – Health Centres Residency

HCRCG - Health Centres Residency Coordination Group

1. Overview

The present report summarizes the organization and implementation of the 5th year Medical Degree's Health Centres Residency (HCR) at the University of Minho's School of Health Sciences. The document presents and analyses: i) students scores on the assessment parameters, ii) student opinions regarding the seminars, iii) the tutors, the services and the area, as well as iv) tutors' answers to a preliminary questionnaire that gauges the impact of the Residency on their profession.

2. General organization and coordination of the Health Centres Residency

HCR integrates the programme of the 5th year's Medical Degree Residencies.

The Residency involved three Health Centers, comprising seven Health Care units located in urban and rural geographical areas of Braga and Guimarães.

The coordination of the Health Centers Residency is defined under the Residencies' general coordination framework (see outline below) and followed closely the previous edition. The Residency's conceptual frame was the responsibility of Dr. Jaime Correia de Sousa.

LEVEL	STRUCTURE	ELEMENTS	DUTIES
Overall coordination	"Clinical Areas Coordination Group" (6 elements)	Pinto Machado Nuno Sousa Jaime C. Sousa Damião Cunha Cerqueira Gomes Óscar Candeias	Ensure that rules, procedures and deployment of the Residencies comply with the School's Philosophy
Clerkship coordination	"Health Centers Coordination Group" (5 elements)	Jaime C. Sousa Margarida Lima Luís Laranjeiro Mário Freitas Teresa Nunes	• Define student tasks • Monitor teaching & learning in clinical settings • Involve Hospital Services • Assign tutors • Name discussion panelist • Study materials and examinations

3. Activities at the Health Centres

The tutors, Family Physicians or General Practitioners, were assigned by the Supervisors on a ratio of 1 tutor/group with 1 or 2 students – (the list is presented in Appendix 1). Supervisors shared the responsibility of assuring an adequate involvement of multi-professional staff nurses, social workers, nutritionists, psychologists, secretaries, among others.

The daily assignments at the Health Centres included attending tutor's consultations, registering of clinical observations and carrying out the procedures defined in the "list of tasks and duties" (Appendix 2) for the Residency, attending the tutor/supervisor's practice and participation in regular meetings.
Teaching /learning was based on scripts (handouts) structured as "Handbooks for guidance and recording"; learning was guided by objectives, designed at the levels of knowledge, skills and attitudes, that represent target the outcomes of the residency, namely "Primary care knowledge", "Clinical knowledge and skills" and "Professionalism". The activities were mostly of practical nature, clinical and non-clinical, always under tutor's guidance.

4. Seminars

The cognitive programme was addressed in interactive Seminars (the calendar is presented in appendix 3), which were presented simultaneously to the whole student cohort. The HCR Coordination Group shared the responsibilities of defining the programme, selecting the speakers (listed in Appendix 3) and of preparing course materials (including bibliography, audiovisuals and the texts to be deposited in the School's intranet). The numbers of sessions/seminars assigned to the main themes are presented in table 1.

Table 1 – Distribution of the number of cognitive seminars or workshops per main subject

Themes	Number of Sessions
Public Health and the Community	2
Public Health and the Environment	3
Health Promotion and Health Education	1
Public Health and Food	2
Public Health and Labour	2
Research in Public Health	2
The consultation in FM	1
Patient diagnosis and management	1
Frequent health problems in FM	2
Management of chronic diseases	1
The consultation in special situations	1
Skills Lab	2

As a rule, the HCCG proposed "Jones R, Britten N, Culpepper L, Gass DA, Grol R, Mant D and Silagy C, editors. Oxford Textbook of Primary Medical Care. New York, NY, Oxford University Press, 2004" as the bibliographic reference which was complemented, whenever suitable by other references.


Week
MON
TUE
WED
THU
FRI
May / Jun
1
2
3
4
5
6
7
8
M
T
Academic Week
Holiday
Papers presentation
Assessment

Health Sciences School	**Health Centres**
Other Areas	**Vertical Domains**
Assessment	**Self-Learning**
Field Visits	**Health Sciences School (only half of the students)**

5. Assessment

5.1.Assessing student achievements

The following is an overview of the assessment methodology applied in the Residency, which is detailed in Appendix 4. In agreement with the School's principle that students should demonstrate knowledge, skills and attitudes, the evaluation was based on five parameters unequally weighed in the final grade (see Appendix 4): i) procedure list, ii) professional behaviour, iii) skills, (evaluated at the Health Centres),iv) research protocols on a PHC theme developed by groups of students and a v) final test (evaluated in the University).

Requirements such as format, logistics of examinations, pass-fail decisions, recommended readings and others were announced to the students prior to the beginning of the Residency.

The following computations and interpretations are the responsibility of the Medical Education Unit.

5.2.Results and commentaries

The distribution of student's final grades (see the following table) demonstrates that the vast majority performed at the level "very good" (78%) and at a minimum level of "good". The distribution shifted to lower levels compared to the previous edition of this Residency, when most of the students performed at the level "excellent". Nevertheless, the grades remained very high.

Table 2 – Final Grade distribution

Number of Students	**Nº of Students (%)**						**Average** ± Standard Deviation
	0 - 7	**8 - 9**	**10 - 13**	**14 - 15**	**16 - 17**	**18 - 20**	
	Failed	**Poor**	**Fair**	**Good**	**Very good**	**Excellent**	
50	0 (0)	0 (0)	0 (0)	5 (10)	36 (72)	9 (18)	17 ±1

A detailed analysis of the scores (see the following table) reveals high performances in the five parameters, even though slightly dissimilar. The averages and standard deviations were all equal or above the level of "good". The best performances are observed for the item "portfolios", where 91% of the students performed at the highest level of "excellent". The written examination was the only parameter where the majority of students performed under the level of "very good". Consistently, the performances were globally, very high.

Table 3 – Discriminative grade distribution

	Nº of Students (%)						**Average** ± Standard Deviation
	0 – 7	**8-9**	**10 - 13**	**14 - 15**	**16 – 17**	**18 - 20**	
	Failed	**Poor**	**Fair**	**Good**	**Very good**	**Excellent**	
portfolios	0 (0)	0 (0)	0 (0)	0 (0)	4 (8)	46 (92)	19 ±1
assignments	0 (0)	0 (0)	0 (0)	0 (0)	11 (22)	39 (78)	18 ±0
Professionalism	0 (0)	0 (0)	0 (0)	2 (4)	16 (32)	32 (64)	18 ±2

Skills	0 (0)	0 (0)	0 (0)	4 (8)	27 (54)	19 (38)	17 ±2
written exam	0 (0)	1 (2)	23 (46)	14 (28)	10 (20)	2 (4)	14 ±2

Globally, student scores have been very good, thus indicating a good match between the learning expected by the instructors and what the students have accomplished. This Residency repeated the very positive grade distributions of the previous edition.

5.3.Students ratings: service and tutor

Student ratings on the Residency were assessed using an eight-item multiple choice questionnaire, with a six point Likert-type scale format (from completely disagree to completely agree).The questions were:

a. I have accessed all the service components (eg: meetings, visits, examinations, etc.)
b. I was stimulated to share my ideas, knowledge and doubts
c. The tutor was available to answer questions and to clarify doubts
d. Tutors' explanations were organized and clear
e. The tutor was keen on letting me contact patients with different pathologies
f. The tutor helped to me to carry through clinical procedures effectively
g. The tutor dominated the concepts, phenomena and clinical practices
h. He's/She's an excellent tutor

Students answered on paper copies of the questionnaires at the end of the residency. Student choices and percentages were computed for each question, using an SPSS suite (SPSS 14.0).

5.4.Results and commentaries

For a more straightforward discussion and easier visual interpretation of the data set, the following criteria were used:

Table 4 - Criteria to define the relative performance of each item for faculty, based on the favourable responses* of the answers for each question

Qualitative appreciation: based on the favourable responses* to question h "He/She's an excellent tutor", according to the following criteria

Favourable Responses * (%)	*90-100*	*75-89*	*50 – 74*	*25 – 49*	*0 – 24*
Qualitative Classification	Excellent**	Very Good	Good	Week	Very week

**agree + strongly agree + completely agree*
***if question h gathers a % of answers equal or higher than 50%*

Legend:

Scale option chosen more often
Question with highest % of favorable responses
Question with lowest % of favorable responses
Question with less than 50% of favorable responses

The general perception of the students, concerning the inquiry items, is summarized in table 5

Table 5. Percentages associated to each question

year	Scale	a	b	c	d	e	f	g			h
2005-2006	Completely Disagree	0	0	0	0	0	0	0	4	0	0
	Strongly Disagree	0	4	0	4	0	0	0	0	4	4
	Disagree	0	0	4	0	0	4	0	2	0	0
	Agree	23	9	9	13	13	17	13	7	13	13
	Strongly Agree	43	32	15	28	21	30	34	26	26	30
	Completely Agree	34	55	72	55	66	49	53	61	57	53

	Without an opinion	0	0	0	0	0	0	0	0	0	0
	Favourable Responses*	100	96	96	96	100	96	100	94	96	96

**agree + strongly agree + completely agree*

Student ratings both of the Clerkship and tutors were exceptional. The majority of the students demonstrated a total agreement with the items. These ratings argue in favour of a very well organizational role of the Supervisor and high level of commitment from the tutors. A general appraisal is in order.

5.5.Student ratings: seminars

Student overall perceptions on the Seminars was collected with a thirteen-item multiple choice questionnaire, using a four point Likert-type response format (from Completely disagree to Completely agree). Analysis was similar to the one presented on tutor ratings. The questionnaires were delivered at the end of each session. The questions were the following:

a. The lecture was dynamic
b. The lecturer(s) was/were clear
c. The presentation(s) were well organized and structured
d. Theories and concepts were related to their practical applications
e. Recent developments in the area were discussed
f. The lecturer(s) stimulated my participation
g. I understood and assimilated the seminar's contents
h. The recommended bibliography was useful
i. The seminar integrated in the area's/module's objectives
j. It was an excellent seminar

5.6.Results and Commentaries

Table 6 - Criteria to define the relative performance of each item for faculty, based on the favourable responses* of the answers for each question

Qualitative appreciation: based on the favourable responses* to question j "It was an excellent seminar", according to the following criteria

Favourable Responses * (%)	*90-100*	*75-89*	*50 – 74*	*25 – 49*	*0 – 24*
Qualitative Classification	Excellent**	Very Good	Good	Week	Very week

**agree + strongly agree + completely agree*

***if question **j** gathers a % of answers equal or higher than 50%*

Legend:

Scale option chosen more often
Question with highest % of favorable responses
Question with lowest % of favorable responses
Question with less than 50% of favorable responses

The evaluation includes the positive values collected for all the lecturers. Those ratings can be observed in the tables below.

Tables 7.1 and 7.2. Percentages, for each subject, in the respective set of seminars

		Public Health									
year	**Scale**	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**
2005-2006	Completely Disagree	3	1	1	1	1	5	1	3	1	5
	Strongly Disagree	3	3	3	2	1	5	3	5	0	4
	Disagree	14	5	3	4	6	18	13	6	3	14
	Agree	34	34	38	35	31	25	39	10	38	32
	Strongly Agree	29	39	37	38	32	25	22	8	29	25

	Completely Agree	14	16	15	19	16	21	19	9	21	15
	Without an opinion	3	2	3	1	13	1	3	59	8	5
	Favourable Responses*	77	89	90	92	79	71	80	27	88	72

		General and Family Medicine									
year	**Scale**	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**
	Completely Disagree	1	0	0	1	2	2	2	4	3	3
	Strongly Disagree	1	1	1	0	1	2	1	1	0	1
	Disagree	11	6	4	4	8	9	8	6	7	10
	Agree	34	32	31	28	29	32	33	16	29	33
2005-2006	Strongly Agree	34	33	35	34	36	28	33	11	31	31
	Completely Agree	20	24	25	32	18	27	20	11	28	19
	Without an opinion	0	3	4	1	6	1	3	50	2	2
	Favourable Responses*	87	90	91	94	83	87	86	39	89	83

**agree + strongly agree + completely agree*

In general, the ratings on the seminars were favourable. The vast majority (93%) was qualified as "excellent". There were four items in which more than 15% of the students disagreed: "the way the session was organized captivated my interest" (item d), "Recent developments in the area were discussed (item f); "I understood and assimilated the seminar's contents" (item h) and "The seminar was useful to support the practical part of the residency" (item k). Nevertheless, those results revealed that a minimum of 85% of responses were favourable in all items.

5.7.Tutor ratings: students, model, satisfaction

In 2005-2006 and for the first time, the School of Health Sciences was able to gauge the Tutors perceptions on the quality of the undergraduates and on the Residencies. The former was done with a questionnaire devised by the Medical Education Unit in tight collaboration with the CACG. Tutor ratings were gathered on student's attributes, on their impact on the Service, on the Residencies' model and on tutor's satisfaction at the completion of the Residency. The twelve-item multiple choice questionnaire, with a six point Likert-type scale format (from completely disagree to completely agree), included the following questions:

1. The interest of the students in the Residency was genuine
2. Students Knowledge was adequate for this Residency
3. The skills of the students at the entrance of the Residency were adequate
4. Students Attitude was adequate in this Residency
5. Students had a positive impact on the assistencial care
6. Students had a positive impact on the my professional activity
7. Globally, the Residency's model was adequate
8. The School of Health Sciences provided me with the necessary assistance and support
9. I developed a good relationship with the tutees
10. This experience as a tutor has raised my interest in teaching
11. I feel pleased with having been a tutor
12. I would be very pleased to be a tutor again

Tutors answered on paper copies of the questionnaires that were distributed at the end of the Residency and with an important collaboration from the clerkship Supervisor, the forms were returned to the School of Health Sciences. Tutor responses were computed, using an SPSS suite (SPSS 14.0).

5.8.Results and Commentaries

Table 8 - Criteria to define the relative performance of each item for faculty, based on the favourable responses* of the answers for each question

Legend:

- **Scale option chosen more often**
- **Question with highest % of favorable responses**
- **Question with lowest % of favorable responses**
- **Question with less than 50% of favorable responses**

The general perception of the tutors, concerning the items enclosed in the inquiry, is summarized in the data included in table 9.

Table 9. Percentages associated to each question

year	Scale	a	b	c	d	e	f	g	h	i	j	k	l
2005-2006	Completely Disagree	0	0	0	0	0	0	0	0	0	0	0	0
	Strongly Disagree	0	0	0	0	0	0	0	0	0	0	0	0
	Disagree	0	0	4	0	8	0	4	4	0	0	0	4
	Agree	20	4	12	12	20	16	28	24	12	24	16	16
	Strongly Agree	24	40	28	28	36	52	44	36	20	44	48	40
	Completely Agree	56	56	56	60	32	28	24	36	68	32	36	40
	Without an opinion	0	0	0	0	4	4	0	0	0	0	0	0
	Favourable Responses*	100	100	96	100	88	96	96	96	100	100	100	96

**agree + strongly agree + completely agree*

Globally, the input reveals highly positive appreciations. These were extremely favorable for students attributes - their interest, their knowledge and their attitudes (items a, b and d) – for the tutor/tutee relationship developed during the tutorial experiences (good in 92 % of the cases) and for their effect on tutor's personal interest in teaching (92%).

The aspects that gathered the least positive tutor ratings referred to the skills demonstrated by students at the onset of the Residency (25% of the tutors did not find those were adequate) and the impact of students on the quality of assistencial care (item e). There was one further aspect rated less positively, namely 17% did not feel an adequate support by the School of Health Sciences (item h). All the tutors wish to repeat the tutorial experience (item l). In summary, the ratings uncovered a very positive impact of the clinical tutorial experiences.

5.9.Area ratings:

The last evaluation relates to global educational and organizational aspects of the Residency. An eleven-item multiple-choice questionnaire, with a six point Likert-type scale format (from Strongly disagree to Strongly agree), included the following questions:

m. I understood the learning objectives
n. The contents were administered in accordance with the objectives.
o. I have gained/developed abilities that I think were useful.
p. The amount of work was adjusted to learning programmed time.

q. Evaluation was consistent with the goals.
r. During my learning process I had the essential supervision.
s. The activities were well organized
t. The suggested/available means were appropriate.
u. My previous education gave me the essential knowledge for this area/course.
v. Globally, I think that the faculty is excellent.
w. Globally, I think that this curricular unit is excellent.
x. Globally, the area promoted my personal development

5.10. Results and Commentaries

Table 10 - Criteria to define the relative performance of each item for faculty, based on the favourable responses* of the answers for each question

Legend:

Scale option chosen more often
Question with highest % of favorable responses
Question with lowest % of favorable responses
Question with less than 50% of favorable responses

The general perception of the students, concerning items enclosed in the inquiry, is summarized in table 8

Table 11. Percentages associated to each question

year	Scale	a	b	c	d	e	f	g	H	i	j	k	l
2005-2006	Completely Disagree	0	0	0	11	0	4	3	0	0	0	2	0
	Strongly Disagree	3	2	2	0	2	2	0	3	2	0	0	2
	Disagree	14	19	7	10	26	33	16	16	5	11	19	7
	Agree	37	40	40	36	28	33	44	35	40	44	42	44
	Strongly Agree	23	23	21	19	26	19	21	23	30	26	28	26
	Completely Agree	23	16	30	24	16	9	16	23	23	19	9	21
	Without an opinion	0	0	0	0	2	0	0	0	0	0	0	0
	Favourable Responses*	83	79	91	79	70	61	81	81	93	89	79	91

**agree + strongly agree + completely agree*

Ten of the twelve aspects were agreed by over 90% of the students, of which two got unanimous agreement (items c and l). 36% of students disagree that" The amount of work required was adequate to the time programmed for learning "and 20% did not consider that the activities were properly organized. These two items relate to organizational aspects that might be addressed in future editions. Globally, student's answers to these general aspects were very favourable.

6. Conclusions

2005-2006 witnessed the second edition of the Residency of Health Centers at ECS. Student marks averaged 17/20 and were, once more, very satisfactory as was the inexistence of failing students. Students performed very well in the clerkship. The programme was, once again, rated very positively.
Tutors' commitment in this Residency was rated very high by the students. Tutor impressions, collected for the first time in this Edition, revealed high levels of satisfaction. The results were revealing also as to the excellent impressions left by ECS 5th graders on tutors, similarly to the Residency of Medicine I (see

the Report 2005-06 of the Residency of Medicine I). A relatively small number of aspects were identified as main targets for improvements. In summary, the MH Residency was very successful.

Appendixes

APPENDIX 1

List of clinicians involved in learning/teaching activities in the clerkships

Name			**Health Centre**
Dra. Margarida Lima	MD	General Supervisor	Centro de Saúde de Braga
Dr. Eugénia Esteves	MD	Health Unit Supervisor	Unid. Saúde Carandá
Dra. Adriana Vaz Dias	MD	Tutor	Unid. Saúde Carandá
Dr. Ramón Areas	MD	Tutor	Unid. Saúde Carandá
Dr. José Carones	MD	Tutor	Unid. Saúde Carandá
Dra. Maria Palmira Carneiro	MD	Tutor	Unid. Saúde Carandá
Dra. Maria Augusta Pereira	MD	Tutor	Unid. Saúde Carandá
Dra. Susana Oliveira	MD	Tutor	Unid. Saúde Carandá (Ext. Gualtar)
Dr. Lopo Antunes	MD	Health Unit Supervisor	Unid. Saúde Maximinos
Dr. Ricardo Armada	MD	Tutor	Unid. Saúde Maximinos
Dra. Maria José Menezes	MD	Tutor	Unid. Saúde Maximinos (Ext. Cabreiros)
Dra. Luísa Carvalho	MD	Health Unit Supervisor	Unid. Saúde Infias
Dra. Mª Eloina Rodrigues	MD	Tutor	Unid. Saúde Infias
Dra. Maria Raindo	MD	Tutor	Unid. Saúde Infias
Dr. Mário Mendonça	MD	Tutor	Unid. Saúde Infias
Dra. Mª José Cabrita	MD	Tutor	Unid. Saúde Infias
Dra. Francisco Fachado	MD	Tutor	Unid. Saúde Infias
Dr. Luís Laranjeiro	MD	General Supervisor	Centro de Saúde de Guimarães e Taipas
Dra. Paula Silva	MD	Tutor	Unid. Saúde Pevidém
Dra. Mª José Teixeira	MD	Tutor	Unid. Saúde Pevidém
Dra. Alice Dias	MD	Tutor	Unid. Saúde Taipas
Dra. Ângela Sperb	MD	Tutor	Unid. Saúde Urgezes
Dr. Jorge Nogueira	MD	Tutor	Unid. Saúde Urgezes
Dr. Marco Pina	MD	Tutor	Unid. Saúde Urgezes
Dr. José Manuel Sousa	MD	Tutor	Unid. Saúde Serzedelo
Dra. Susana Moreira	MD	Tutor	Unid. Saúde Serzedelo
Dr. João Silva	MD	Tutor	Unid. Saúde Taipas
Dr. Nuno Castro	MD	Tutor	Unid. Saúde Taipas
Dr. Mário Dias	MD	Tutor	Unid. Saúde Taipas
Dra. Mª Alcina Pires	MD	Tutor	Unid. Saúde Taipas
Dra. Mª João Varandas	MD	Tutor	Unid. Saúde Taipas

APPENDIX 2

List of Tasks and duties

NA Non applicable: task not fulfilled by absence of opportunity
⓪ does not execute the task (0 points)
① executes with difficulty (0.25 points)
② executes reasonably (0.50 points)
③ executes well (0.75 points)
④ executes very well (1.0 points)

TASK
To obtain a patient history in a minimum time with non-biased questions in, at least, 5 consultations
To explore previous contacts with the health system including previous medical and surgical interventions in at least, 5 consultations
To explore occupational, environmental and cardiovascular risk markers, current activity level, substance abuse, nutrition habits, self-medication habits, immunization status, household conditions, family health history, quality of emotional attachment to other family members in at least, 3 consultations
To perform a complete physical examination in at least, 2 consultations
To perform a focused physical examination in at least, 5 consultations
To asses BMI in at least, 5 patients
To present oral and written clinical information about, at least 5 consultations
To suggest a prescription plan in, at least 5 consultations
To train writing a prescription in, at least 3 encounters
To write a referral letter in, at least 2 consultations
To write a medical report in, at least 2 consultations
To train writing a sick-leave in, at least 3 consultations
To communicate clinical information to patients and families in, at least, 2 consultations
To use problem-oriented medical records in, at least, 3 consultations

To use the International Classification for Primary Care (ICPC 2) in, at least, 2 consultations
To use electronic clinical records, at least twice, discussing with the tutor its benefits
To asses patients with unexplainable clinical problems, to identify diagnostic hypothesis and to define strategies in, at least 2 consultations
To asses indirect encounters, to interpret the patients requests and to take ethically acceptable decisions in, at least 3 consultations
To attend, at least, home visit with the tutor to patients who require terminal and palliative care
To attend, at least, 1 home visit with the tutor
To asses physical and mental state of the elderly in, at least 2 patients
To use depression diagnostic instruments in, at least 1 consultation
To asses cardio-vascular risk with the Framingham score in, ate least 3 situations
To asses the probability of prostate benign hypertrophy with IPSS in, ate least 3 situations
To interpret a symptom recording sheet of a chronic headache patient in, at least 1 consultation
To interpret a symptom recording sheet of an asthma patient in, at least 2 consultations
To asses the severity of medical problems and the need for urgent action in, at least 2 consultations
To make at least 1 consultation to a patient with upper respiratory infection
To make at least 1 consultation to a patient with otitis
To make at least 1 consultation to a patient with tonsillitis
To make at least 1 consultation to a patient with back pain
To make at least 1 consultation to a patient with urinary tract infection
To make at least 1 consultation to a patient with cough

To make at least 1 consultation to a patient with thoracic pain
To make at least 1 consultation to a patient with dizziness
To make at least 1 consultation to a patient with headache
To assess patients with multi-pathology and co-morbidity, to identify the problems and delineate strategies in, at least 2 consultations
To explore functional aspects of the most common diseases and it's impact in the patients daily activities in, at least 2 consultations
To make at least 1 consultation to a patient with Diabetes Mellitus
To make at least 1 consultation to a patient with Hypertension
To make at least 1 consultation to a patient with Asthma
To make at least 1 consultation to a patient with COPD
To make at least 1 consultation to a patient with chronic headache
To make at least 1 consultation to a patient with GERD
To use the opportunity of a consultation of patient's initiative to start or update recommended preventive activities in, at least 2 occasions
To participate in, at least 2 maternal health consultations
To participate in, at least 2 family planning consultations
To participate in, at least 2 child health consultations

APPENDIX 3

Cognitive programme

Health Centres Residency - II

Date	Theme	lecturer
02/05/06	Public Health and the Community	Dr. Mário Freitas et all.
04/05/06	Public Health and the Environment	Dr. Mário Freitas et all.
04/05/06	Health Promotion and Health Education	Dr. Mário Freitas et all.
05/05/06	Public Health and Food	Dr. Mário Freitas et all.
08/05/06	Public Health and the Community	Dr. Mário Freitas et all.
08/05/06	Public Health and the Environment	Dr. Mário Freitas et all.
09/05/06	Research in Public Health	Dr. Mário Freitas et all.
09/05/06	Public Health and Food	Dr. Mário Freitas et all.
11/05/06	Health Promotion in the working place	Dr. Mário Freitas et all.
11/05/06	Public Health and Labour	Dr. Mário Freitas et all.
12/05/06	Research in Public Health	Dr. Mário Freitas et all.
23/05/06	Skills Lab 1	Dr. Jaime Correia de Sousa et all

25/05/06	Skills Lab 2	Dr. Jaime Correia de Sousa et all
01/06/06	Frequent health problems in FM	Dr. Jaime Correia de Sousa
01/06/06	Co-morbidity and complexity	Dr. Jaime Correia de Sousa et all
06/06/06	From symptoms to decision	Dr. Jaime Correia de Sousa et all
06/06/06	Palliative and terminal care	Dr. Mª José Ribas
13/06/06	EBM Family Medicine – POEM's and DOE's	Dr. Jaime Correia de Sousa
13/06/06	Undifferentiated clinical situations and MUPS	Dr. Jaime Correia de Sousa

APPENDIX 4

Assessment Methodology

- ***Portfolio***: tasks accomplishment **- 20%**

o **Final Test** **- 35%**

- **Assignment**: producing a research protocol in Public Health or General and Family Medicine *(group work)* **- 20%**
- **Professionalism and competencies:** evaluation grid **- 25%**