

**PROPOSAL OF A CURRICULAR STRUCTURE  
FOR A MEDICINE COURSE**



UNIVERSIDADE DO MINHO  
Braga, 1998

PRELIMINARY CONSIDERATIONS

Regarding the Resolution of 25/96 of the Ministry Council (D.R. 1 Series 2) of 27th March 1996, the Rector of the Murcia University asked one of its Rectors, member of the Council, to present a

**PROPOSAL OF A CURRICULAR STRUCTURE**

**FOR A MEDICINE COURSE**

The first Director of the proposed course, on April 1996 after a meeting with the Rector, the Vice-Rectors and professors of the Murcia University who would be directly participating in the creation of this course, this group was formed as a Scientific Commission of the Medicine Course together with Prof. Carlos José Profund of University of Murcia Director of the Rectorate of 16 April.

The reasons that led the signatory members, as an Institute of Murcia from Murcia University, to accept this assignment were the following:

- a) the document "Proposal of Creation of a Medicine Course in Murcia University" should have their total agreement. This document was written by JCM in 1981, by decision of the Senate, and had its approval in the same year. It was published in 1991, and, by decision of the Rectorate to serve as framework of the present proposal from the Scientific Commission;
- b) the unequivocal will of the Murcia University, since its creation in 1974, of implementing an innovative work. Presented by the Scientific Commission of the Medical Course and approved by the Senate of the University

From what has been said so far, the Chapter V "Organization of the Medicine Course" of the document referred above shall be considered as a part of this proposal.

## **I PRELIMINARY CONSIDERATIONS**

Regarding the Resolution nº 45/98 of the Ministry Council (D.R. I Series-B, nº 74, 28.March.1998), the Rector of the Minho University asked one of us (JPM), member of the Senate, to elaborate a proposal of a Curriculum Structure of a Medicine Course.

The first decision he took was to form a group to work on the proposal. On April 16th, after a meeting with the Rector, the Vice-Rectors and Professors of the Minho University, who would be directly participating in the creation of this course, this group was formed as Scientific Committee of the Medicine Course, together with Prof. Cecilia Leão, Professor of University of Minho (Decision RT-16-A/98 of 16.April).

The reasons that led the signatory members, as an institutionalised entity from Minho University, to accept this assignment were the following:

- a)** the document "Proposal of Creation of a Medicine Course in Minho University" should deserve their total agreement. This document was written by JPM in 1990, by demand of the Senate, and had its approval in the same year. It was published in 1991, and, by decision of the Rector, is to serve as framework of the present proposal from the Scientific Committee;
- b)** the unequivocal will of the Minho University, since its creation in 1974, of implementing an innovative Medicine Course and the way this University has been developing, warrant that the proposal will not be misrepresented and that the institution has the indispensable means to its full execution.

From what has been said in a), the Chapter V — "Conception of the Medicine Course" — of the document referred above shall be considered as a part of this proposal (Appendix II).

## II STEPS OF THE FORMATIVE PROCESS

The curricular structure hereby proposed seeks a formative process to be developed as a *continuum*, dynamically expanding from an initial nucleus. This conception is opposite to the traditional one, consisting of an assembling of juxtaposed and overlapped independent parts, more or less disconnected.

As in the human being development, the formation process we seek goes through a series of periods, with frontiers so thin they do not break nor divide its essential unit.

Each major part in which the traditional curricular structure is divided is called "cycle": basic cycle, pre-clinical cycle, and clinical cycle<sup>1</sup>. Cycle implies the notion of a process with an end in itself, separated from before and after.

In this proposal we use the word steps, meaning a series of continuous stages of a precise path oriented to well-defined goals from the beginning.

Contrarily to the fragmented and static features of a curriculum structured in cycles, this process is both dynamised and unified by the steps, within which all the academic years are interconnected. They all are "basic", "pre-clinical" and "clinical".

## III STRUCTURE OF THE CURRICULUM

Hereby a curricular structure formed by 4 steps in an articulated succession is proposed, in which each of the steps integrates the various tramlines that lead the students' education: anthropological, scientific and professional.

From the pedagogical perspective, the main characteristic concerns the active participation of the students, namely:

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<sup>1</sup> These designations were adopted both in the report of the "Interministerial Committee of the Revision of Medical Education", of January 14th 1993, and in the report of the "Work Group to the Revision of Medical Education", of March 17th 1994.

- a) by reducing the lectures to the strictly indispensable (mainly dedicated to the fundamentals, systematisation and interpreting paradigms motivating and orienting the acquisition of factual knowledge by working on their own);
- b) by emphasising formal learning activities allowing to stimulate the students critical intervention, like seminars and small work groups (e.g., problem interpretation, presentation and discussion on subjects and situations, and elaboration of posters);
- c) the accomplishment of projects of option (studies in depth, research, "field" projects);
- d) the accomplishment of professional activities;
- e) follow-up of families and patients (inwards patients, ambulatory, domiciliary);
- f) enough time available to the necessary personal preparation and the participation in extra-curricular activities, namely within the associative, cultural and sport domains (in and out of University).

In Appendix I the major differences are stressed between the traditional Medicine Course and the one proposed for the University of Minho.

**L. First Step**

(1<sup>st</sup> and 2<sup>nd</sup> years, of 34 weeks each, including assessments)

**A. Objectives**

**A.1. Learning to think**

Acquisition and understanding of fundamental knowledge regarding:

- a) the *human being* in its singularity (somatic, psychic and social) and its circumstances (from the immediate ecological site to the ecosystem);
- b) *medicine and its practices, methods of the sciences concerned, medical responsibility;*

- c) *morphofunctional organisation of the human being, physiologic and pathogenic influences.*

**A.2. Learning to do**

*To communicate: to listen, to talk, to participate.*

*To critically analyse information and opinions.*

*To apply the knowledge into identifying and interpreting problems.*

*Using the computer media within the search for information and self-learning.*

*To conceive and execute a work project.*

*To execute elementary health care.*

**A.3. Learning to be**

*To socialise correctly with patients, kindred and health professionals.*

*To care about professional competence and responsibility.*

**B. Pedagogical methods**

*Lectures (with the characteristics mentioned in the introduction of this chapter).*

*Seminars.*

*Work in small groups (in the modalities mentioned in the introduction of this chapter).*

*Laboratory work.*

*Presentation of clinical cases (if possible and convenient, with patients).*

*Interactive learning work (computer programs).*

*Practice on first aid and nursing care.*

*Training period in health centre, with final report.*

*Project of Option (study, research, and "field work"), with final report.*

*Follow-up of a family:* each student, throughout the 1<sup>st</sup> year, will be introduced to a term-pregnant woman, will be present during delivery (assuming that she gave her permission) and will follow-up the child, as well as the rest of the family, up to the end of his/her medical course, with an annual report. For this, written guidelines to offer orientation to this activity will be provided.

*Theoretical-practical course on interpersonal communication.*

### **C.        *Disciplinary areas.***

Man, Society and Environment.

Health and Disease.

Molecules, Cells and Tissues.

Organic and functional systems.

In the 1<sup>st</sup> year, after the introduction of University of Minho and the Medicine Course, four areas appear in range. The area "Molecules, Cells and Tissues" concerns the basic biological entities, and is therefore directly related to the area "Organic and Functional Systems" (Muscular, Nervous, Circulatory, Respiratory, Digestive, Genitourinary, Development and Ageing). Here, the morphology, the biochemistry, the physiology, the pharmacology and the mechanisms of functional interconnection into and inter systems, including those of homeostasis and adaptation, are considered as integrated.

The consideration of clinical cases (in the presence of patient, video show, presentation of clinical records, CD-ROM's) will help to recognise the importance of these knowledge in the medical practice (motivating to study). They will also contribute to the understanding, as well as to the deepening of the disciplinary areas of this step. In every area, there are knowledge whose opportunity of presentation will occur in further steps of the course and in the post-graduate residences.

### **D.        *Learning assessment***

*Continuous assessment*, recorded on notebooks, composed by records with indications on the several aspects to be considered; the student will be kept informed on the contents of this notebook.

*Written test* (multiple-choice questions, short answer questions and developed answer questions) at the end of each disciplinary area.

*Appreciation of the written works* (including the quality of the written communication), with an obligatory discussion in certain cases (projects of option, follow-up of family and patient).

## **2 Second Step**

(3<sup>rd</sup> year, of 34 weeks, including assessments)

### **A. Objectives**

In the 2<sup>nd</sup> step, the student enters the universe of disease and patients. The holistic perspective of the human being within himself and in his/her social and environmental interpretation becomes a must. These perspectives had been considered in the 1<sup>st</sup> step, already in connection with the medical practice.

#### **A.1 Objectives regarding diseases**

Understanding of the following questions:

- a)** What does disease consist of?
- b)** Why do people get sick?
- c)** How is disease manifested?
- d)** How is disease treated and prevented?

The starting point is the systematising introduction of general pathology (aetiology, pathology, pathological anatomy and physiopathology and its clinical expressions, diagnosis, prognosis and therapeutics). Then the diseases consequent to each type of aetiology (namely the most frequent) will be studied.

Here come, closely connected, epidemiology, microbiology, genetics, oncology, immunology, chemical pathology, imagiology, pharmacology, and semiotics.



**A.2 Objectives regarding patients**

*Understanding the psychological implication of "feeling sick" and "knowing to be sick" (especially in cases of chronic diseases, cancer diseases, incurable diseases, terminal situations) and the related qualities of the doctor-patient relationship.*

*Learning the clinical semiotics, understanding the opportunity of recurring to subsidiary means of diagnosis and interpretation of their results.*

*Anatomol and physiopathologic interpretation of the collected data.*

**A.3 Objectives concerning the social repercussions of diseases and patients**

*Knowledge about direct and indirect costs of health in Portugal and in relation to the national budget and to the Gross Internal Product. Ethical implications of the distribution and use of health resources, as well as the doctor's responsibility in health economy.*

*Understanding of disease prevention methods, promotion of health and their social importance (significance, relevance).*

*Thorough knowledge about the Portuguese health system organisation and its efficiency.*

The consideration of the three wide groups of objectives allows to verify the need of: retaking, deepening and applying the knowledge acquired in 1<sup>st</sup> step.

**B. Pedagogical methods**

As in 1<sup>st</sup> step (except first aid and nursing care and personal communication course) plus:

- *Training period in emergency, intensive care and terminal patients care services.*
- *Learning clinical semiotics in hospitals and health centres.*
- *Participation in autopsies.*
- *Follow-up of a chronic or elderly patient (oriented by a guidebook), with report.*

**C.        *Disciplinary areas***

- Clinical Biopathology and Therapeutics
- Community Medicine
- Clinical semiotics

**D.        *Learning Assessment***

As in 1<sup>st</sup> step plus Clinical Semiotics practical/oral exam.

**3.        *Third Step***

(4<sup>th</sup> and 5<sup>th</sup> years, 35 weeks each, including assessments)

After the end of 2<sup>nd</sup> step, the students enter the next step, 4<sup>th</sup> and 5<sup>th</sup> years. At this moment they have acquired scientific and practical skills, attitudes and experience in contacting with patients, as well as with community health problems. This will allow them to start their activity in the third step without abrupt qualitative changes (which cause adaptation problems) and perform with confidence the program, and therefore achieve their objectives.

**A.        *Objectives***

The Objectives are essentially related to clinical practice and social implications (causes and consequences) of patients' diseases.

The students are to improve their learning making, whenever possible, a detour to 1<sup>st</sup> and 2<sup>nd</sup> steps, i.e., go from the clinical to the cellular and molecular, on order to improve their knowledge, their intellectual skills and their practice. These are the specific goals:

- a) to acquire knowledge on the clinical sciences, predominantly by oriented personal study.
- b) to develop clinical reasoning, leading to diagnosis.

- c) to produce trial prognosis, based on the acquired knowledge on disease evolution and therapeutic possibilities, applied to the particular conditions of the observed patients.
- d) to produce adequate treatment (curative, symptomatic, palliative), to consider the possible side-effects and to evaluate the risks;
- e) to follow-up the patients with compassion, especially those who are suffering the most (whatever the causes).
- f) to understand that the patient and not the disease is the reality, and to act in conformity; the patient has an identity of his/her own, and has rights inherent to his/her dignity as a person, so:
  - every patient is always the medicine protagonist, deserving all the respect and interest, even if elderly, if his/her disease is chronic or incurable, if in terminal state, or if his/her social status is very low.
  - no patient can be an instrument to serve any ambition of any doctors whatsoever.
  - every specialist, no matter how sub-specialised, has a whole person under his/her care.
  - the doctor is a professional with undeniable ethical requirements, obliging to a permanent up-to-date of his/her competence and to the sacrifice of radical denial to his/her commodity.

## **B. *Pedagogical methods***

The objectives at state will be mainly pursued through residences (full-time) in internal medicine (including the great specialisation's within), surgery (general and specialised), obstetrics and foetal medicine, paediatrics, psychiatry, general and community medicine: the last two in health centres and the others in hospitals (inwards patients, emergency room, external consultation).

The distribution of students by the several residences will be as to allow each one of them to execute the necessary practical activity under the indispensable supervision of teaching staff.

Each residence will begin with the introduction of every intervenient and by delivering to the students a notebook, indicating the objectives, the program and skills they are to acquire.

The theoretical work is to be provided by lectures of the teaching staff, as well as by oriented personal work from the students.

Seminars, small-group work, clinical and necropsy demonstrations, anatomo-clinical meetings, interactive software and library work will complete the variety of educational technologies offered to the students to the acquisition, understanding and application of knowledge.

Besides the lectures included in residences, it is highly recommended to organise weekly multidisciplinary seminars, globally designated "From Clinics to Molecular Biology". These seminars should be oriented by Minho University elements, and by researchers and/or teaching staff from other national or foreign institutions.

A project of option will still exist, like in the other years, and the follow-up of a family, started in 1<sup>st</sup> year, will be continued.

### **C.      *Disciplinary areas***

*Subjects taught in residences.*

*"From Clinics to Molecular Biology" seminars.*

Subjects will concern the areas of "Clinical Biopathology and Therapeutics", "Functional and Organic Systems", "Molecules, Cells and Tissues", and "Man, Society and Environment" (1<sup>st</sup> and 2<sup>nd</sup> steps) will also be regarded.

### **D.      *Learning assessment***

*Continuous assessment of each residence (notebook, keeping the student informed).*

*Final examination at the end of each residence (written and practical/oral), that shall include the subjects mentioned in the seminars "From Clinics to Molecular Biology".*

*Assessment of the project of option report, with discussion.*

*Assessment of the report on the follow-up of a family, with discussion.*

#### **4. Fourth Step**

(6<sup>th</sup> year, of 40 weeks, including assessments)

As a replica (with its obvious limitations) of professional activity, and with a long period (8 weeks) for the accomplishment of a project of option, the academic year of this last step of the course is the longest: 40 weeks. This duration can be increased, if both Ministers of Health and Education decide so, by proposal of the "Medical Education Committee", created by joint decision n° 130/98 of February 9th, published in D.R. Series II, n° 47 of 25-2-1998.

##### **A. Objectives**

As mentioned above, the 4<sup>th</sup> step of the course is professional, consisting mainly in oriented practice of medical activities, in the area most students will practise: clinical practice.

In this perspective, the objectives are the following:

- a) communication with patient and health professionals;
- b) patient exam (collecting the story, physical exam);
- c) recognition of the possibility of needing to resort to subsidiary exams;
- d) formulation of diagnosis and prognosis;
- e) ability for therapeutic decision (things at stake, ethical dilemmas);
- f) follow-up of the evolution and possible new decisions;
- g) performance of usual treatment techniques.

These objectives were present in the former part of the course, and are now particularly envisaged as personal tasks.

The fundamental attitude of the student, that should orient his/her activity, is "care always, cure whenever possible". This attitude becomes more important as — despite progress in medicine — many diseases remain incurable and even mortal, like some new-coming diseases.

The continuous enlargement of longevity increases the frequency of some diseases, some of which considered as “physiological”, that is, problems inherent to the usual biological conditions of advanced age.

Recognising the importance, both personal and social, of early diagnosis, disease prevention, and health promotion (what primary care consists of) is also a primary objective (considered from 1<sup>st</sup> year), particularly achieved through critical analysis when comparing the experience from hospitals and health centres. This objective includes the complex problem of “health economy”, with growing importance.

A last objective — strictly personal and mainly affective — is to accomplish the interest of each student by a particular area of knowledge and/or practice (goal with high social interest, since the more a professional enjoys his/her work, the more he becomes competent, diligent and devoted). This goal had been envisaged since 1<sup>st</sup> year, through the diversity of knowledge and practice areas, through the growing intervention of the student within his/her learning, and through the accomplishment of projects of option. All these factors, stimulating self-discovery while developing “vocation”, remain active in the last year of the course, and are even reinforced, namely by the considerable increase of the time available to the execution of project of option.

## **B. Pedagogical methods**

- a) *Residences* in the areas mentioned in 3<sup>rd</sup> step and also in emergency rooms, of palliative and terminal care units. Possibility of option residences. Residence in urban and rural health centre(s), with duration of 6 weeks. Personal responsibility over patients.
- b) *Seminars “From Clinics to Molecular Biology”.*
- c) *Project of option*, to accomplish in 8 weeks, in Minho University or in institutions with cooperation agreement (in any national or foreign region). Final dissertation.
- d) *Follow-up of a family*, started in 1<sup>st</sup> year. Final report on the whole experience.

## **C. Disciplinary areas**

Subjects included in residences and interface between clinics and biopathology, physiopathology, and molecular and cellular biology (see 3<sup>rd</sup> step).

**D. Learning assessment**

*Continuous assessment of each residence (notebook, keeping the student informed).*

*Final exam concerning all the hospital residences (oral/practical).*

*Final exam concerning the residence in health centre(s) (oral/practical).*

*Assessment of the project of option dissertation, with discussion.*

*Appreciation of the final report of the follow-up of a family, with discussion.*

Tables in Appendix I show the credit units corresponding each of the curricular units and the plan of studies.

**IV FINAL CONSIDERATIONS**

The signatory expect the proposal they have the honour and the satisfaction to present to the Magnificent rector of Minho University meets his/her expectations and those of the University, and declare themselves available to any elucidation considered necessary. They wish that a Medicine Course, with the characteristics this university sought from the beginning, included in this proposal, may be created in Minho University.

Porto, 1<sup>st</sup> of June 1998

Alexandre Sousa Pinto

Cecília Leão

Isabel Azevedo

Joaquim Pinto Machado (reporter)

José Agostinho Marques

Manuel Sobrinho Simões

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(by chronological order)

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MAIN DIFFERENCES BETWEEN THE TRADITIONAL MEDICAL COURSE  
AND MINHO UNIVERSITY PROPOSAL

TRADITIONAL COURSE *	MINHO UNIVERSITY COURSE**
Level of learning	Detailed learning
Focused on general learning	Focused on active learning
Early introduction of clinical classes	Strong focus on theoretical and clinical practice
Focus on memorizing	Focus on understanding and application of knowledge
Rigid structure	Flexible structure with a focus on student autonomy
Rigid curriculum	Curriculum with a focus on knowledge, competence, and professional attitude
Rigid teaching methodology	Active teaching and learning methods
Rigid evaluation	Continuous evaluation
Rigid curriculum	Curriculum with a focus on knowledge, competence, and professional attitude
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**APPENDIX I**

**• MAIN DIFFERENCES BETWEEN THE TRADITIONAL MEDICAL COURSE AND MINHO UNIVERSITY PROPOSAL**

**• MEDICAL COURSE**

Curricular Structure  
Plan of Studies

**MAIN DIFFERENCES BETWEEN THE TRADITIONAL MEDICAL COURSE  
AND MINHO UNIVERSITY PROPOSAL**

<b>TRADITIONAL COURSE *</b>	<b>MINHO UNIVERSITY COURSE**</b>
Based on <b>teaching</b>	Based on <b>learning</b>
Focused on <b>passive</b> learning	Focused on <b>active</b> learning
Heavy schedule of <b>formal classes</b>	Enough time for <b>individual</b> and <b>small group</b> work
Focused on <b>memorising</b>	Focused on <b>research</b> and <b>judicious use of information</b> aiming at problem solving
Mainly <b>theoretical assessment</b> of memorised factual knowledge	<b>Global assessment of knowledge</b> , awareness, application, implementation, communication, behaviour
Strong <b>teacher leadership</b>	<b>Student, tutor, unit co-ordinator</b> and <b>stage co-ordinator based leadership</b>
<b>Distant</b> teacher-student relation	<b>Close</b> teacher-student relation, personal tutors, better role model achievement opportunities
<b>Inflexible</b> and <b>uniform</b> curricular structure	<b>Flexible</b> and <b>diversified</b> curricular structure with options
Organised by <b>independent disciplines</b> without relevant horizontal or vertical inter-relationship	Organised by <b>curricular units integrating</b> the knowledge of the several traditional disciplines
<b>Three cycle division</b> , separating biomedic sciences from clinics	Continuous process, with <b>patient and community contact from the first year</b> , and with biomedical sciences and clinics connection throughout the whole course
<b>Disease-centred</b>	<b>Health-centred</b>
<b>Biomedical scientific</b> perspective	<b>Integrated biologic, psychological, and social</b> perspectives
<b>Hospital-centred</b> practice	Medical practice in <b>different settings</b> (domicile, health-centre, hospital)
<b>Disregarding</b> the sanitary situation of the country	<b>Guided by</b> the sanitary situation of the country
<b>No teaching assessment</b>	Teaching <b>assessment</b>
* Unsustainable due to the explosive growing of knowledge, it offers an insufficient training especially in what regards behaviour, attitudes and ethics. Besides, however it may seem a paradox, it is insufficient even concerning medical-scientific knowledge, leading to dangerous self-conceited wisdom and arrogance.	** It obeys standards from most European and North-American Committees working in this area for the last ten years; it resembles on-going courses in the majority of the British and Dutch universities, globally regarded as the best in Europe; it prepares doctors to a humble and life-long learning attitude.

**MEDICAL COURSE — Curricular Structure**

**CURRICULAR STRUCTURE**

**Scientific area:**

Medicine

**Normal duration:**

6 academic years

**Minimum conditions necessary to obtain the degree:**

230 credit units

**Scientific areas and distribution of credit units:**

COMPULSORY SCIENTIFIC AREAS			OPTIONAL SCIENTIFIC AREAS	
Code	Scientific area	C.U.	Scientific area (code)	C.U.
BBS	Biomedical and Biological Sciences	57	BBS + SHS + P + C + CH	20
SHS	Social and Human Sciences	11,5		
P	Pathology	23,5		
C	Clinics	95		
CH	Communitary health	23		
<b>TOTAL</b>		<b>210</b>	<b>TOTAL</b>	<b>20</b>

## MEDICAL COURSE - Plan of Studies

STEP	YEAR	SCIENT. AREA	CURRICULAR UNITS	WEEKS*	CU
STEP I	1st Year		<b>1st Semester</b>		
		SHS	Introduction to the Minho University and its Medical Course	1	1
		SHS	Man, Society and Environment	2	2
		CH	Health and Disease	2	2
		C	First Aid, Nursing Care	1	1
		SHS	Interpersonal Communication	1	1
		C+CH	Training Period in a Health Centre	1	1
			<b>2nd Semester</b>		
		BES	Functional and Organic Systems	10	10
			Project of Option I	2	2
		<b>Annual Areas</b>			
	BES	Molecules, Cells and Tissues	14	14	
	SHS+CH	Follow-up of a family	-	2	
	2nd Year			<b>1st Semester</b>	
C+CH		Training Period in a Health Centre	1	1	
		<b>2nd Semester</b>			
		Project of Option II	2	2	
		<b>Annual Areas</b>			
BES		Organic and Functional Systems	31	30	
SHS+CH		Follow-up of a Family (Cont.)	-	2	
	<b>Total STEP I</b>		68	71	
STEP II	3rd Year		<b>1st and/or 2nd Semester</b>		
		C	Training Period in a Hospital (Emergency, Intensive Care and Terminal Care)	1	1
			<b>1st Semester</b>		
		CH	Community Medicine	4	3
		C+CH	Training Period in a Health Centre	1	1
			<b>2nd Semester</b>		
		C	Clinical Semiotics	3	3
			Project of Option III	2	2
			<b>Annual Areas</b>		
		P	Clinical Biopathology and Therapeutics	23	22
SHS+CH	Follow-up of an elderly, a chronically affected or an incurable patient	-	2		
SHS+CH	Follow-up of a Family (cont.)	-	2		
	<b>Total STEP II</b>		34	36	
STEP III	4th and 5th Years		<b>1st Semester and/or 2nd Semester</b>		
		C+CH	Residence in Health Centre(s)	6+6	6+6
			<b>2nd Semester</b>		
			Project of Option IV, V	3+3	3+3
			<b>Annual Areas</b>		
		C	Hospital Residences** (Internal Medicine, Surgery, Obstetrics and Foetal Medicine, Paediatrics and Mental Health)	26+26	26+26
		C+P+BBS	From Clinics to Molecular Biology	-	2+2
SHS+CH	Follow-up of a Family (Cont.)	-	2+2		
	<b>Total STEP III</b>		70	78	
STEP IV	6th Year		<b>1st and/or 2nd Semester</b>		
		C+CH	Residence in Health Centre(s)	6	6
			<b>2nd Semester</b>		
			Project of Option VI	8	8
			<b>Annual Areas</b>		
		C	Hospital Residences**	26	26
		C+P+BBS	From Clinics to Molecular Biology	-	2
SHS+CH	Follow-up of a Family (Conclusion)	-	3		
	<b>Total STEP IV</b>		40	45	
	<b>TOTAL (STEP I + STEP II + STEP III + STEP IV)</b>		212	230	

**Abbreviations:** CU - Credit Units - 1 unit corresponds to 24 hours of learning activities

\* Including assessments

\*\* Implies the participation of teaching staff from the Basic Sciences

## CONCEPTION OF A MEDICINE COURSE

### APPENDIX II

#### CONCEPTION OF A MEDICINE COURSE

From:

Joaquim Pinto Machado, "Proposal for the Creation of a degree course in Medicine at the University of Minho — Chapter V". Braga 1991.

## **CONCEPTION OF A MEDICINE COURSE**

This is a root matter, as it has been referred to (cf. IV.1.). It was on this item that the reason for the course, which is intended to be created as a strategy for change, was based.

The conception integrates the following items in an unbreakable interdependence: purpose, objectives, organisation, contents, pedagogical methods, activities and learning and teaching assessment.

### **1. PURPOSE**

The purpose of the course is to qualify the graduates to ulteriorly follow a specific vocational training programme and to proceed with dedication with an effort of updating and upgrading throughout their entire lives as doctors.

In order to fulfil this aim, objectives relating to the integral development of the student's personality and the health care needs of the population shall be envisaged. The course shall be organised by the principles of co-ordination and integration; the programme contents shall have an essentially general educational stamp (with the elimination of the information elements that must be acquired in the post-graduate vocational training); the pedagogical methods shall be essentially active, appealing to the student's creative participation, in individual and in group work, in the identification, interpretation and resolution of problems related to the sanitary reality of the Region and Country; the activities — besides those carried out in Medical Sciences laboratories — shall be undertaken through a strong insertion in the Community and aiming at developing attitudes with a high consideration for the early diagnosis, for the illness prevention and for the health promotion. The learning assessment shall be qualitative, taking into consideration the "how to think"; "how to do"; "how to be"; and the teaching assessment shall take under consideration the student's educational improvement, information about

the adequacy of the education acquired to the fulfilment of the post-graduate vocational training programmes and the evolution of the sanitary levels of the Region and of the Country and the modalities of medical service delivery.

## **2. OBJECTIVES**

The main objectives are the following:

- a)** Comprehension of the health value in the personal and social development, and consequent right and duty of the people, the society and the state to defend and promote it at individual and collective levels;
- b)** Acknowledgement of the illness causes — namely those with higher incidence in the Region and in the Country —, of the mechanisms through which they act, of the disturbs that they cause and their manifestations, of their personal and social consequences and of how to prevent and treat them;
- c)** Comprehension of the importance of the prophylactic, health promotion and rehabilitation measures in the fight against disease;
- d)** Capacity for identifying, interpreting and solving (or forwarding to the solution if the intervention of a specialist is required) the health problems of the Region and of the Country;
- e)** Capacity for performing a clinical examination and for applying current primary health care delivery techniques and for interpreting their results;
- f)** Capacity for working in group (together with colleagues or health professionals);
- g)** Capacity for communicating in an intelligible and caring manner with the patients and with all health services users and their families
- h)** Capacity for making decisions;
- i)** Development of a taste for qualified work, scientific study of the health problems and permanent self-education;



- j) Development of an interest in the matters and events which are susceptible to affect health, in a positive or negative manner, either at individual or group level;
- l) Development of the conscience of the doctor's towards those who turn to him/her and towards society, which includes the financial implications of his/her decisions and the contribution to the progress of medical knowledge and the education for health;
- m) Expression and satisfaction of the individual aspirations, interests and aptitudes.

### **3. CURRICULAR ORGANISATION**

The curricular organisation shall be conceived according to the following principles:

**3.1** The structural units shall be formed by the **areas** and not by the disciplines, based on their scientific meaning, but with no autonomous curricular expression (e.g.: the Morphology area includes in an integrated way the Embryology, the Histology and the Anatomy).

According to their nature, the several areas shall be included in four major **domains**: scientific, community and public health, hospital and cultural (the latter, regarding the Man in the integral part of his being and considered in himself, in his relation to the others and in his existence within a historical process that influences him and which is influenced by him).

A certain amount of credit units shall be attributed to each one of these domains, being distributed by the respective areas.

**3.2** The arrangement of the several areas shall not be made in a way that in the first years the scientific and cultural domains are contemplated, and, in the last years, the hospital and community medicine and public health ones.

All domains shall be simultaneously considered in an articulated way, even though in the first part of the course there is a predominance of the first domains and in the second part of the latter ones.

Regarding the areas, none shall be exclusively considered either, for once and for all in a specific period of the course, though each one has a maximum emphasis in a certain period.

This dispersion (in a co-ordinated and integrated distribution) of the several domains and their areas over the course is based on the following reasons:

- a) the contact with health problems in the beginning of the course is of great importance for the student to find out the practical importance of the biomedical and human sciences, and then to interestingly dedicate himself/herself to its thorough study;
- b) it is in the advanced phase of the course, where the experience of community, public and hospital health medicine predominates, that a determined knowledge and certain problems in the scientific and cultural domains have the opportunity to be considered by excellence;
- c) more often the problems are of an interdisciplinary basis and each science is pluridisciplinary;
- d) Man — every man — in his personality, in his individuality and in his historicity is not understood by partial successive approaches, but by successive in-depths of a systematically global approach.

#### **4 PROGRAMME CONTENTS**

The knowledge to be acquired, the problems to be solved and the practice to be carried out shall be selected having under consideration that the medicine course is not more than the basic phase of the medical education (in the terminology of the World Health Organisation) and that this education is primarily aimed at the solution of concrete problems of a concrete country.

This means that everything that is only contemplated in the postgraduate <sup>5</sup> vocational training shall be eliminated and that the demographic, epidemic and sociological characteristics of the Region and Country shall be duly considered.

## **5. PEDAGOGICAL METHODS**

Pedagogy shall be centred in the student, as a subject of the educational process. The teacher's role shall consist in providing the student with the necessary conditions so that s/he can learn how to know and to think, learn how to do, learn how to be and learn how to develop herself/himself; and in stimulating in the student the taste for this kind of learning.

This implies the following:

- a) a personal relationship between teacher and student, which allows the teacher to know the student and the student to know herself/himself and in that way the appropriate conditions may be established so that s/he can learn according to her/his aptitudes, interests and aspiration and that s/he has already discovered her/his vocation when the moment of option for the professional area where s/he shall graduate comes;
- b) an active pedagogy, aiming at stimulating and directing the student's personal effort (individually or in group) to learn and where the problem analysis and solution methods and the responsibility for (the) tasks execution assume the highest importance (which obliges the organisation of timetables that are not saturated by formal school activities);
- c) the offer of a diversified range of studies and work of the student's free choice; without forgetting the personal interviews and even the institution of a tutor, chosen by the student, who may accompany her/him throughout the entire course.

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<sup>5</sup> For example, surgery must be complementary to medicine, emphasising especially the indication, possibilities and risks (from the immediate to the long-term) of the operation treatment.

## **6. ACTIVITIES**

In the theoretical classes and tutorials the students are spectators. In the own practical classes, even when something is really practised, most of the times this is carried out by the teacher, which turns the classes into demonstrations or tutorials for small groups.

In the medicine course intended to be established, these classes shall exist, but limited to what can only be reached by them, and to what it can hardly be without them.

The decisive option for an active pedagogy centred in the student's personal effort (cf. 5b) makes that a strong predominance is given to the activities under the student's responsibility (individually and in group), the teacher is entitled to guide, supervise and stimulate. This is namely the case of the seminars, panels, laboratory and clinical work, community surveys, prophylactic tasks, and tasks for the population's education for health, problem-discussion sessions in small groups and initiation to scientific research.

## **7. LINKS WITH THE COMMUNITY**

A close link with the community shall follow the entire course: several aspects of this link have already been mentioned (cf. 1-4 and 6). However, it is convenient to develop this issue further, due to its high importance.

In order to make a doctor out of a medical student, the health problems cannot be merely presented. In order to learn how to identify them, to understand them and to solve them, the student must handle them face to face. Well, it is not in the hospitals that most of these problems are found, and many of those which are observed there, should not have been observed, if they had been detected earlier or duly solved.

The services to which the patients turn in ambulatory, health centres (urban or rural) – all sort of primary care deliverers – and the public health services must also host the medicine students so they can learn there through listening, watching and **working** with responsibility. The same must happen in relation to the Health Regional Administrations, where health resources are “managed”. And also regarding the places where people live:

where they inhabit, where they work, where they educate themselves, and where they socialise.

In the documents of the already mentioned World Conference on Medical Education it is written:

"It is notable that the need for more learning in the community, recognised fully by those regions with many developing countries, was sometimes even more strongly emphasised by those with highly development health care systems".

Only that way the recent graduate shall have acquired a true general training for a real, diversified and scientifically-oriented practice. S/he will then be ready to obtain vocational training in any medicine domain, and if s/he has motivation (and possibility) to do so, to join the one that corresponds most to her/his vocation, which was revealed by the contribution of those varied experiences. And though the medicine course cannot offer more, as it has already been referred to (cf. 1 and 4), that the preparation of any doctor must include a course with close link with the community, it shall awake her/his vocation for being a "community doctor", which includes the traditional sense of "general practitioner" or "family doctor", but with a wider meaning either at the scope of the practice or at the scope of putting into perspective the sanitary problems' causes, dimensions and consequences: because such a course, which intends that a competence and a conscience at the service of the entire Man and all men are reached through living experience, tends to awake such a vocation due to the fact that the opening to the universal is innate to Man.

## **8. LEARNING ASSESSMENT**

The learning assessment shall be objective, in the sense of aiming at locating the progress reached by the student in relation to the educational objectives defined for that moment.

In conformity with what has already been referred to (cf. 1), the assessment shall be qualitative, because skills and not quantities are under consideration. What is at stake is to know how to think, to know how to do and to know how to be (regarding the last one, the inter-personal relationship, the zeal and the ethical behaviour are especially relevant).

The evaluation system shall be double: continuous evaluation and final evaluation.

"The continuous evaluation is the educational evaluation by excellence, because it allows the early detection of the deficiencies, the identification of their causes and the immediate establishment of the appropriate correction and recovering measures; in addition, only through continuous observation, the student's affectionate behaviour can be evaluated"<sup>6</sup>. It is also important to mention that this evaluation system necessarily leads to a closer relationship between teacher and student, whose importance has already been referred to (cf. 5a).

As far as final evaluation is concerned, it is important to start by clarifying the meaning of the word "final": it is neither an examination at the end of the course, nor at the end of the cycle (there will be no cycles), nor at the end of the year (at global or discipline level).

Due to the curricular organisation of the course (cf. 3), where the structural units are pluridisciplinary areas, **final** relates to the end of the term, within which the area is contemplated with more emphasis. This system, which escapes to the rigidity of the school year and its divisions in semesters, is the only one logical due to the concept of area as a curricular organisation unit. It has also the huge advantage of implying a significantly small number of examinations when compared to the traditional model.

Due to the areas diversity, it would be impossible to present a final examination formula applicable to all of them. The final examination of each one of them shall use the processes and methods that the area specification demands as necessary, so that it is possible to locate the student's knowledge regarding the how to think, how to do and how to be in relation to the educational objectives defined for this specific area.

As already referred to, these skills are not susceptible to quantitative evaluation, because their variations constitute discontinuous series and not continuous ones. The capacity of problems' analysis and solution, the capacity for performing a proper clinical examination, the attitude of responsibility, among others, are not measurable. They are qualifiable. Under a radical point of view, it could be said that they exist or they do

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<sup>6</sup> See note 1.

not exist, and that, at most, the cases where they are noticed with a degree of excellence must also be discriminated.

Having under consideration the Portuguese higher education context, the medicine course then proposed would consider the following qualifying levels: insufficient, sufficient, good and very good (for administrative purposes, a numerical mark could be attributed to each one of these levels). If there is no ministerial authorisation for this effect, it shall not be difficult, using some imagination, to indicate to each one of them a certain mark out of the scale from 0 to 20 values.

## **9. TEACHING ASSESSMENT**

It is believed to be unnecessary to stress the essential aspect of the teaching assessment (objectives, organisation, contents, methods...and teaching staff) in order to reach its purpose: the adequate learning of the students.

It is obvious that in order to do that it is important to know the results of this learning assessment, paying attention, however, that they must be critically analysed, because if they are considered in themselves, they may lead to incorrect judgement. For example, high rates of "good" and "very good" may derive from insufficient demand (which could have several causes...) and their low frequency associated to a significant failure level may be an expression of wrong admission criteria.

But the reference to the student's performance and progress, even if correctly carried out, is not enough for a proper teaching assessment: learning can be in fact excellent, and however teaching can suffer from a serious wrong: not to be pertinent.

The non-consideration of the "**pertinence**" concept is maybe the most dangerous need of a medicine course (not the only one...) in Portugal: if it was not like that, we would probably have another course already. In respect to this, the following considerations fully adopted here are reproduced:

"(...) pertinence regarding what? This question is usually answered as follows — pertinence (that means suitability) regarding the tasks that the student shall have to undertake in his/her practical performance (...) (which means the professional future). It is necessary to add that the tasks in question must themselves also be "pertinent" in relation

to the real health needs of the population (...). These tasks, as may be understood, shall have to constitute the basis of the definition of the educational objectives to be pursued by the health educational system, which must consequently be under the service of the health services system, in order to ensure the training of the staff needed by the latter, to deliver services appropriate to the satisfaction of the community needs. As a consequence (...) **the pertinence of the educational process in health is in the last analysis related to the health needs of the population**".<sup>7</sup>

The World Conference on Medical Education held in Edinburgh, in August 1998, expounded an identical point of view. By the way, in its documents, the concept defined in the Declaration of Alma Ata<sup>8</sup> is quoted: "In any country, the most qualified level of medical education is the one that provides the best answer to this country's needs".

From the **vital** concept of pertinence occurs that the correct and permanent teaching assessment shall have to be achieved in order (with its adjustable consequences whenever the case), and that institutional channels of reciprocal communication between the "managers" of the medicine course and the "managers" of the health services system (who are entitled to verify the pertinence of the recent-graduate's education in relation to the execution of the concrete tasks they have the responsibility to carry out).

## 10. DEPARTMENT OF MEDICAL EDUCATION

As any other course, the medicine course is subject to influences it cannot avoid, and, to which, on the contrary, it must adapt. This implies that:

- a) its organisation is flexible (it is the case of what has been defined in 3);
- b) there is a body — Department of Medical Education — specifically responsible for detecting these influences on time and conceiving the appropriate answers.

The influences in question are essentially of two natures.

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<sup>7</sup> Aloisio Coelho: "The pertinence of the current education programmes in relation to the health services need in the eighties". *Revista Portuguesa de Saúde Pública*, n.º1, January, 1983, pages 5-10.

<sup>8</sup> See note 11.



Some consist in the continuous and accelerated scientific and technological advance imposing the wise selection of information and equipment so that the fundamental conception of the course is not distorted and it can be made compatible to the human and financial resources available.

Others concern the changes of the population health care needs, deriving for example from the demographic and morbidity patterns alterations, the incidence of pathogenic agents of sociological origin (feeding and living habits, atmospheric pollution, noise, means of transport, motorway accidents, emotional tension, etc.) and the modifications of the health services system.

In order to be able to play its role of "sensor motor" (changes detector "ad extra" and agent of the adaptive changes "ad intra") properly, the Department of Medical Education must be open to the representation of the exterior (either regarding the University where the course is integrated, or regarding the society at whose service it is) and enjoy the privilege, fruit of the competence, that through the course management statute gives a strong weight to its proposals.

But the Department of Medical Education must still have responsibilities within the pedagogical scope, in the strict sense. Among these, those concerning the student's admission criteria, the updating of teaching/learning methods and their results' evaluation, and the pedagogical training of the teaching staff (the competence of a teacher is not a sub-product of the scientific and medical competence; it is a specific to know how to think, to know how to do and to know how to be, that can be achieved by suitable training) are highlighted. It is considered to be evident that in order to make this education fruitful, it is indispensable that the quality of the teacher's educational action and his/her personal contribution to the study and solution of his/her problems and his/her continuous progress are properly recognised as of high curricular value for the effects of renewing the contract, academic promotion and definite employment (in the already mentioned Edinburgh Conference, this urgent need was also emphasised).