SELF-EVALUATION REPORT

Bachelor and Master Curriculums in Human Medicine

FACULTY OF MEDICINE
UNIVERSITY OF GENEVA

August 30th, 2011
Self-evaluation Report - Bachelor and Master Curriculums in Human Medicine

Sir, Madam,

I have the privilege of sending you the Self-evaluation Report of the Faculty of medicine of Geneva elaborated according to the guidelines of the OAQ.

A few comments are in order at this stage:

1) As our Faculty is in its third procedure of accreditation, we deliberately skipped the Summary and Introduction sections which we feel do not add much to the main text, since they would mostly reproduce previous generalities on the Faculty.

2) We also skipped the Glossary section, as we choose to define all the acronyms and abbreviations directly in the text for the sake of clarity. The English translation of some French denominations proved at times awkward, so we kept those in French indiquées en italiques.

3) Although the progresses, made in several domains pointed out for improvement in the 2006 accreditation procedure, are duly mentioned in the Report when appropriate, we wish to emphasize one major change with a hopefully favorable outcome for the practice of medicine in Geneva. It is the creation of a new Unit, the Unité de recherche et d'enseignement en médecine de premier recours, with a dedicated budget, academic and administrative staff, in charge of the teaching and promotion of the Primary care / Family medicine. We greatly count on this Unit to gain the interest of the students for this undervaluated domain, yet of utmost importance in view of the demographics of the population in the years to come.

4) The second major change which occurred since 2006 is the conversion of the entire BA and MA Curriculums, teaching and evaluation, to the standards of the Bologna reform and those of the new federal law (LPméd) regulating the medical professions in Switzerland. The details of the changes are itemized in the Report, and we can now say that the Curriculums are fully compatible with the above-mentioned standards.
5) Finally, given the fact that the final redaction of the Self-evaluation Report took place during the summer recess, the enclosed version of the Report could not be presented to the Collège des professeurs nor to the Conseil de Faculté (Participative Council). This will be done on their first session in the coming Semester, beginning September 12. Since the redaction of the Report involved most of the stakeholders of either the Collège or the Conseil, we have little doubt that it will be approved by a large majority, if not unanimously. Should, however, comments be raised at the time of the vote, these will be communicated at once to your Office for transmission to the International experts.

Wishing you a safe receipt of the Report (and associated materials), I remain available for any request.

Yours sincerely,

Henri Bounnameaux, MD
Dean of the Faculty of medicine
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1 AREA: MISSION AND OBJECTIVES

1.1 MISSION AND OBJECTIVES

Standards:

1. The Faculty of medicine\(^1\) defines its mission and objectives and makes them known publicly. The mission statement and objectives describe the educational process. After completion of the program, doctors have the ability to practice their profession as well as an appropriate basis for further training in any specialized branch of medicine. They are able to take responsibility for their role as doctors in the health care system.

2. The mission statement and the objectives take into consideration social responsibility and community involvement.

3. The mission statement and objectives are compatible with the strategic planning\(^2\) and the research goals.

Annotation:

\* The Federal Diploma in Medicine is awarded after successfully completing basic medical education and permits the practice of medicine under supervision. Continuing medical education is mandatory for the independent practice of medicine by specialists (federal specialist title).

The missions and objectives of the Faculty of medicine are defined in the \textit{Règlement de la Faculté de médecine} (statutes of the Faculty of medicine, \textit{Appendix 1}). The statutes are accessible to all on the web site. They are clearly committed to social responsibility and community involvement and follow the guidelines provided by Cantonal and Federal laws.

Mission statement:

1. The Faculty regroups the teaching and research activities related to the structure and functions of the human organism, to human health and to its alterations.

2. The missions of the Faculty are to:
   
   \* train practitioners to prevent, recognize and treat diseases, and thereby relieve patients sufferings as well as promote their health in all physical and psychosocial aspects;
   
   \* train teachers and researchers in their domains of competence;
   
   \* contribute to the development of scientific knowledge, to its diffusion and application to the benefit of individual and collective health.

3. The activity of the Faculty is established on biological, psychological, socio-economical, legal and ethical bases.

The objectives of the Faculty are to:

\* foster self-directed and life-long learners who will continuously develop as caring physicians during graduate training and practice;

\* enable students to acquire a strong foundation in both basic and clinical sciences and in those aspects of the humanities, social, and behavioral sciences that are relevant to medicine;

\* allow students to acquire the multiple skills necessary for the competent practice of medicine throughout their professional career;

\* help students appreciate and understand the diverse values that are brought by health care professionals, patients, family, and society to the practice of medicine;

\* offer a variety of learning strategies and formats enabling students to follow and integrate the evolution of medical knowledge.

\(\text{In Switzerland the term "Faculty of medicine" is used for the English expression "Medical School"}\)

\(\text{Compare with 8.1.2.}\)
1.2 PARTICIPATION IN FORMULATION OF MISSION AND OBJECTIVES

**Standard:**
The mission statement and objectives of the Faculty of medicine are defined by its principal stakeholders and other interested parties.

**Annotations:**
- The main stakeholders include the dean, members of the Faculty board, the University, as well as representatives of professional associations of doctors.
- Further stakeholders include representatives from the following areas: undergraduate and postgraduate education, students, educational and healthcare authorities, the public, alumni, and professional and patient organizations.

In Switzerland, each Faculty of medicine is regulated by the cantonal law of the University it belongs to, and by the federal law (and ordinances) on medical professions (LPMéd 2006, Appendix 2).

In parallel to the federal process of setting the missions and objectives of the Faculties of medicine, the Faculties are continuously adapting their missions and objectives to the evolving needs. At the Faculty of medicine of Geneva, the Education Committee and the Research Committee, who report and are advisory to the Dean, are in charge of defining and adapting their respective programs to the Faculty's mission.

Since 1995, a series of reforms and adaptations of both curriculum and evaluation systems have taken place. Further, in accordance with the federal law, the Bologna principles were adopted by all the Faculties of medicine in Switzerland.

The new LPMéd, enforced in 2007, was elaborated by a Committee including patients' representatives, delegates of doctors' associations, medical students, nurses, State Counselors of Public health or Public education, delegates of the Faculties of medicine, etc. So the process of elaboration involved all major stakeholders.

**Strengths**
The LPMéd gives a large autonomy to each Faculty of medicine in its competence to provide a relevant, adapted and up to date curriculum to the students. Each Faculty thus has the opportunity to flexibly adapt the curriculum continuously, a process which was not possible under the previous law.

**Perspectives / Comments**
The new LPMéd is a « modern » law in the sense that it answers and adapts to the recent developments in medicine and healthcare in general, as well as in medical education. It has clearly defined the competences to be developed during undergraduate, postgraduate and continuing education. It has also taken into account the changing demographics in medicine and healthcare, related in particular to increasing elderly populations, chronic diseases management and their psychosocial consequences. The new LPMéd thus clearly emphasizes the competences, skills and behaviors required from future medical professionals.

The Swiss Confederation, through the LPMéd, has been able to create a flexible legal framework, guaranteeing transparent and competence-based standards of medical practice, without compromising existing goals, quality and pedagogical approaches of the medical profession. It has endorsed the SCLO (Swiss Catalogue of Learning Objectives, Appendix 3) as a common basis for training in all Swiss Faculties of medicine.
1.3 ACADEMIC AUTONOMY

**Standard:**
The Faculty of medicine has a policy within which it has freedom to design the curriculum and allocate the resources necessary for its implementation.

The statutes of the University of Geneva ([Appendix 4](#)) specify that, as they practice teaching and research activities, members of the University enjoy an academic freedom recognized and guaranteed by the State of Geneva. Academic freedom includes freedom of thought and expression, of research and training, respecting good practice of teaching and research.

Within the Faculty's missions, structures have been created to support the organization of undergraduate education (cf. chapter 2.3).

A Vice-dean is specifically in charge of education and chairs the Education Committee (EC). The Education Committee supervises both the Human Medicine and Dental Medicine Curriculums; its role is to foster pedagogical innovations and developments, to guarantee a cohesive and comprehensive study program throughout the Bachelor and Master years, to maintain a high academic level of teaching and ensure the large diffusion of all relevant information. The EC has a smaller executive steering board, with weekly meetings, to deal with the day-to-day administration of the curriculum and implement the decisions made by the EC.

Under the supervision of the EC, a Bachelor Curriculum Committee and a Master Curriculum Committee have a major and specific role in defining the program content of the respective years of study: knowledge in basic medical and clinical sciences, content of the longitudinal and multidisciplinary teachings and disciplines, contents of the practical/clinical skills program, contents of optional programs, clinical clerkships and optional rotations. The Committees also define and oversee the different types of evaluation relevant and matched to the curriculum contents. Each Committee has an executive steering board.

As mentioned above, the Faculty of medicine enjoys a fair autonomy in defining the curriculum and its evaluation within the framework of the respective cantonal and federal laws. This autonomy also operates along the Bologna principles regulating the Bachelor and Master programs and requiring accreditation. The Faculty contributes to the content and administration of the newly-introduced (through the LPméd) Federal Licensing Examination ([Examen fédéral de médecine humaine, EFMH](#)) leading to the federal diploma of physician.

Currently the Faculty of medicine has a budget of 125 million CHF (65% from public funding, 35% from grant applications) for salaries. A substantial fraction of the salaries from public funding concerns teaching, according to the terms and conditions of the individual contracts of the academic staff. Every member of the academic staff has teaching time assigned.

The Education Committee is provided with a yearly budget of one million CHF (2011) for current expenses (not comprising the library budget which is run at the University level). This amount includes 350'000 CHF re-distributed to the Departments in proportion to their involvement in teaching (direct contact time with students and assuming responsibilities). The steering board of the Education Committee, in coordination with the Dean and the administrators, can in addition bring financial support to departments involved with administrative work in relationship with the curriculum. Private practicing primary-care physicians active in the family medicine program are paid through the EC budget. So are the teaching equipment and materials. The costs for the administration of the EFMH (including the hiring of the needed personnel) are covered by the Swiss Confederation (about 400'000 CHF per year).

**Caveat:** It must be said that although the funds devoted to the support of teaching and evaluation may seem important, the adoption of the Bologna principles, which confer to the Faculty a greater autonomy in defining its curriculum, has placed a major financial burden on exams’ budget. These exams, which were in the past covered by federal funds, are now local University exams and thus covered by the Faculty budget. We evaluate this additional charge at approximately 500'000 CHF per year.
In addition, the increasing number of medical students to be formed will create financial difficulties if not compensated in the near future. This increase stemmed from political decisions in face of the needs of society (in particular ageing of the population, burden of chronic diseases and shortage of primary care physicians), as well as from European Union directives reducing the working hours for residents in University Hospitals, with the consequence of increasing the medical personnel needed for patient care.

Strengths

The Faculty of medicine has a large initiative in designing its curriculum and allocate the resources for its implementation.

The autonomy of the Faculty in defining its teaching missions, coupled with the important decision to attribute to independent Committees (rather than to discipline-oriented departments) the administration of the curriculums, allowed:
- the improvement and continuous adaptation of the curriculum;
- a full reorganization of the first year of study;
- the creation of a learning program totally devoted to the ambulatory and primary care (family) medicine (*AMC de Médecine Communautaire et de Premier Recours*);
- a much better integration of the learning objectives in the clinical part of the curriculum;
- the integration of affiliated and peripheral hospitals for the students’ rotations during clinical clerkships, under well-defined objectives and responsibilities.

Weaknesses

An insufficient financial support in the middle and long term.

1.4 EDUCATIONAL OUTCOME

Standards:

1. Based on the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training\(^3\) and the MedBG, the Faculty of medicine defines the competencies to be achieved by students at the successful completion of their studies, necessary for their subsequent training and their future roles in the health care system.

2. Information concerning performance assessment and other data on the competence of the graduates is used for the further development of the educational program.

Annotations:
- Competencies at the end of the studies include:\(^4\)
  - Knowledge and understanding of clinical science as well as of basic, behavioral and social sciences, including public health, health economics, and ethics relevant for the practice of medicine, as well as economic and ecological factors;
  - Attitudes and clinical skills (with respect to establishment of diagnoses, practical procedures, communication skills, interdisciplinary cooperation, treatment and prevention of disease, health promotion, rehabilitation, palliative medicine, clinical reasoning and problem solving);
  - The skills to handle pharmaceuticals in a professional, ecological and economical manner;
  - The skills for lifelong learning and professional development.

The Geneva curriculum in Human medicine puts special emphasis on students' acquisition of the following competences:
- knowledge and understanding of the basic medical, clinical, behavioral and social sciences, including public health, population medicine, and medical ethics;
- adequate attitudes and clinical skills (with respect to establishment of diagnoses, practical procedures, communication skills, treatment and prevention of diseases, health promotion, rehabilitation, clinical reasoning and problem solving);
- capacity to undertake lifelong learning and professional development.

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\(^3\) [http://sclo.smifk.ch](http://sclo.smifk.ch)

\(^4\) Compare with Arts. 4, 6, 7, 8, MedBG and the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training
While these competencies are assessed regularly during the six-year curriculum through the students’ assessment program (cf. chapter 4), we also attempted to determine whether the seniors students and graduates felt they had been properly trained to start their residency period. Overall, based on the follow-up of seven classes (2004-2010), the graduates indicated that they had acquired the appropriate knowledge and competences in basic medical, human and psychosocial sciences, as well as the clinical and professional skills, to start their residency training (Appendix 5).

In the original evaluation scheme, we had also planned to determine how graduates were evaluated by their residency directors. This goal proved very difficult to attain, due mainly to confidentiality issues in obtaining ratings of the graduates by their residency directors and the lack of reliability of the residency evaluation processes (moreover graduates were difficult to locate individually during their residency program). A detailed description of the senior students and graduates’ follow-up study can be found in chapter 7.

**Strengths**

Since the last accreditation in 2006, it was possible to continue and expand (with the support of the Faculty and of external Foundations) the survey started in 2003 assessing whether our undergraduate curriculum and training program adequately prepare the students for their residency period. The preparation has been shown to be adequate.
2 AREA: STUDY PROGRAMME

2.1 CURRICULUM MODELS AND INSTRUCTIONAL METHODS

**Standards:**
1. The Faculty of medicine defines the curriculum models and instructional methods.
2. The study program and instructional methods ensure that the students have responsibility for their own learning processes and are prepared for lifelong, self-directed learning.

**Annotations:**
- Curriculum models include models based on specific disciplines, systems or problems.
- Instructional methods encompass teaching and learning methods.
- The study program and instructional methods are based on sound learning principles and promote the ability of future professionals to take part in the scientific developments of medicine.

Different curriculum models and instructional methods are used at different stages of the medical formation, as well as within the same year and stage of the program. Bachelor and Master are abbreviated by BA and MA respectively.

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<tr>
<th>Curriculum learning models</th>
<th>Curriculum year/stage</th>
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<tr>
<td>Multidisciplinary molecular/cellular/organ system integration</td>
<td>Module A 1st BA year</td>
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<td>Multidisciplinary organ/physiological systems integration</td>
<td>Module B 1st BA year</td>
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<tr>
<td>Problem-oriented, multidisciplinary physiological systems integration (large group)</td>
<td>Module B 1st BA year</td>
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<td>Teaching Units 2nd and 3rd BA years</td>
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<td>Theory and direct practice of clinical competencies</td>
<td>Introduction to clinical skills program 2nd and 3rd BA years</td>
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<tr>
<td>Work-based learning and practice</td>
<td>Introduction to primary care medicine program 2nd or 3rd BA years</td>
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<tr>
<td>Project-based learning and practice</td>
<td>Introduction to Community-oriented competencies program 2nd and 3rd BA years</td>
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<tr>
<td>Case-based problem-solving (small groups), theory and work – based practice</td>
<td>1st and 2nd MA years</td>
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<td>Learning in the clinical environment – work-based practice</td>
<td>1st to 3rd MA years</td>
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<td>Investigative competencies and project-based practice: Master thesis</td>
<td>1st and 2nd MA years</td>
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<td>Further study/ investigation of selected topics</td>
<td>2nd and 3rd BA and 3rd MA years</td>
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**Instructional methods**

All instructional methods used are described in Appendix 6.

With the adoption of the Bologna principles, the Geneva curriculum is constituted of a 3-year Bachelor program and a 3-year Master program. After completing successfully their six-year curriculum and their Master thesis, students obtain a “Master in medicine” title. The MA title gives access to the final licensing Federal Exam in Human Medicine (EFMH), leading to the Federal Diploma of Medicine and to postgraduate residency training programs.

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5 The total direct-contact time between teachers and students (28,447h) is subdivided as follows: 34% small groups activities (6-10 students), 30% interactive seminars (max 16 students), 5% practical lab, 7% interactive sessions (16-50 students), 6% seminars with patients (max 16 students), 4% plenary lectures, 14% one-to-one clinical teaching.
With the introduction of the LPméd (Appendix 2) and the adoption of the Bologna principles, the Geneva curriculum has been completed to include:

- An optional course program (10% of study time during the 2nd and 3rd Bachelor years), allowing students: (i) to further study/investigate a variety of topics, medicine-related or not; (ii) to combine their medical training with specific training in areas such as public health, management, law, global health and humanitarian medicine, etc.
- A new student assessment program in the Master years.
- A Unit of “Preparation for the Federal Exam in Human Medicine” at the end of the 3rd MA year.
- A computerized ECTS (European credit) management and reporting system.
- An 8-week comprehensive program in primary care / family medicine.

Furthermore, in part to address a LPméd regulation, in part to complete the student evaluation program in the 2nd and 3rd BA years, the Bachelor Curriculum Committee has considered introducing the assessment of students’ professional attitudes. A pilot evaluation scheme is currently under review and discussion.

Strengths

The Bachelor and Master curriculums are characterized by:

- A rich variety of instructional methods to address the teaching objectives in a relevant way and promote as much as possible development of competences related to lifelong and self-directed learning.
- A high degree of satisfaction expressed by students with regards to the instructional methods and learning activities (cf. chapter 7).
- A high degree of satisfaction manifested by teachers/tutors regarding the instructional methods and the quality of the curriculum (cf. chapter 7).

2.2 STRUCTURE, COMPOSITION, AND DURATION OF THE STUDY PROGRAMME

Standards:
1. The Faculty of medicine describes and defines the contents, extent, and sequencing of the study program elements, including the balance between core and optional content.
2. The study program is based on the goals of the Swiss Catalogue of Learning Objectives and the MedBG.
3. Basic sciences and clinical sciences are integrated in the study program as well as the interface with complementary therapies.

Annotations:
- Core and optional content refers to a curriculum model with a combination of compulsory elements and elective or special options. The ratio between the two components can vary.
- Integration of disciplines would include both horizontal (concurrent) and vertical (sequential) integration of curricular components.

BACHELOR PROGRAM, FIRST YEAR (BA 1)

During the 1st year, students acquire knowledge in basic medical sciences, integrating elements of physics and chemistry, thereby providing a strong scientific basis upon which to build the 2nd and 3rd years. In 2004, following recommendations of the first accreditation process (1999), we completely restructured the content and instructional methods in the 1st year program. This was achieved by (i) organizing the acquisition of knowledge so as it progresses from the molecular and cellular levels to the organ and systems levels; (ii) planning introductory plenary lectures generally given in the mornings so as to motivate students for independent reading and learning in the afternoons.

Thus, the first year is composed of four Units of instruction organized in two semestrial Modules A and B (see Figure). The first three Units integrate biochemistry, molecular biology, chemistry, physics, biophysics, morphology and physiology (including neurophysiology) to present the organization of life from the molecular to the cellular levels, then proceeding to the organ-systems levels. The fourth Unit (Integration Unit) allows students to apply previously acquired knowledge to a variety of clinical situations (cf. chapter 2.6). In addition, 20% of the teaching time is devoted to a special program entitled “Person,
Health, Society” presenting topics in human sciences and various dimensions of community medicine, including medical ethics.

It must be mentioned that currently the number of students in the 1st year exceeds by far the capacity for PBL in the 2nd and 3rd years, as well as the capacity for clinical instruction at the University Hospitals. (e.g. in 2010, a total of 461 students were registered in the 1st year, comprising 307 new students and 154 students who were repeating the year). A drastic selection procedure has thus to be imposed at the end of the 1st year.

The introduction, in 2010, of a compulsory but not eliminatory aptitude test for all candidates applying for medicine, did not have the expected discouraging effect. Indeed, the students who performed poorly in this test were informed of their result, and invited to discuss a possible change in career plan with experts in professional orientation. Of the 116 students who failed the test, a few responded to the invitation, and only 19 did not confirm their application to enter the first year.

Since the Geneva Department of Public Instruction is opposed by principle to the use of the aptitude test as a filter for the entry into medical studies, we are left therefore with the semestrial examinations (MCQs) at the end of each Module as our sole selection tool. For each Module exam, students are allowed 2 attempts, except for those receiving a mark below 2 on a scale of 6, which means direct elimination from the 1st year. Success in each exam confers 30 ECTS credits (60 for the full year) is a prerequisite for entering the 2nd year. The average rate of success in the past six years has been 35±5% (mean±S.D.).

The Figure represents the organization and contents of the first year. Each semester-long module contains 2 units, and is completed by three longitudinal programs running in parallel throughout the whole year: Person, Health, Society (Personne, Santé, Société, PSS), Clinical cases, Statistics for MDs.

As indicated before, the first Unit integrates knowledge in biochemistry, molecular biology, chemistry, physics and biophysics, needed to understand how a cell is built from elementary molecules and to describe the basis of cellular functioning. The first Unit also comprises a course on human genetics. The second and third Units allow the students to understand the mechanisms underlying the formation and function of tissues and organs, their interactions, and ultimately the functioning of the main systems of the human body. The last Integration Unit requires students to apply previously acquired knowledge to a variety of problems and themes, each lasting one week:

- Physical activity and health, adaptation to physical exercise.
- Metabolic syndrome, lipid metabolism and physical activity.
- Defense systems: inflammation, immunology.
- Organ transplantation and rejection.
- Hemophilia and hemorrhagic diseases.
- Mineral and bone metabolism.

These themes are presented by teams of basic medical scientists and clinicians, in order to clearly illustrate the anchoring of medicine and practice in basic sciences.
Clinical cases
Throughout the 1st year, students study different aspects of a given clinical problem (called "Cas de liaison" in the Figure above). For example, in the first Unit (from Molecules to Cells), the study of cystic fibrosis allows students to understand how a genetic mutation in a single protein of an ion channel can affect several organs and systems. In the second Unit (from Cells to Organs), students examine the consequence of this mutation on glandular secretion in various organs. In the third Unit (from Organs to Systems), students address the effects of cystic fibrosis on the respiratory and gastrointestinal systems. Finally, in the Integration Unit, they consider various issues related to pulmonary transplantation and to the impact of psychological factors and disability associated with a chronic disease. A similar path of presentation and reasoning is followed for another pathological condition, atherosclerosis.

Given the large number of students and limited available academic staff, the teaching method consist mainly of plenary lectures for the whole class, although a significant effort is made to confront students with alternative teaching formats, including practical work, problem solving sessions and guided discussions in smaller groups. A large fraction of time in the afternoons is devoted to individual work, particularly reading. The lectures given in the mornings by senior academics are designed to provide motivation, context and perspective for the afternoon self-learning.

Bachelor Program, Second and Third Years (BA 2 and 3)
In the 2nd and 3rd years, we can accommodate 160 and 140 students respectively (20 students in Dental Medicine are included in the 2nd year count, these students have their own track in the 3rd year). Teaching is mostly done in the form of problem-based learning (PBL) in two-phase tutorials (groups of 9-10 students) that integrate basic medical sciences and clinical sciences. In parallel, special programs in practical laboratory work, on community and psychosocial issues (Community experience program or DC, in large groups), and in clinical skills (clinical skills program or CC, in small groups) are unfolding. In all Units, lectures or seminars can be given on selected topics, when appropriate. Other activities include forums and interactive sessions. The general instruction given to the teachers responsible for each PBL Unit is to exploit this wide range of teaching formats with optimal flexibility, so as to cover the different objectives defined by the Bachelor Curriculum Committee with the most appropriate method.

In addition to the CC and DC programs, students in the 2nd year are exposed to family medicine and ambulatory experience in the settings of private practice (Introduction à la médecine de premier recours, IMPR), during which each student attends for 4 afternoons the practice of a general practitioner and follows plenary seminars). This early exposure to family medicine is part of a full program continuing in subsequent years of the curriculum under the direction of a clinical Professor assisted by a staff of seven private general practitioners and a secretary. This answers a criticism formulated in a previous accreditation that students were insufficiently prepared to family medicine.

In the 3rd year, students explore the health system network in Geneva or abroad during a one-month “Immersion in the Community” Unit (Immersion en Communauté).

A Program Integrating Basic Medical Sciences and Clinical Sciences
In BA years 2 and 3, eleven Units address clinical problems pertaining to a particular body system or function (see Figure below). The problems are selected to direct students in the acquisition (in an integrated manner) of knowledge in anatomy, histology, human physiology, biochemistry, pathology, pathophysiology, pharmacology, microbiology, immunology, genetics and molecular biology.

In the 2nd year, a two-week synthesis and revision Unit concludes each Module 1 and 2 to enable multi-system integration and revision before the respective exam session. In the 3rd year, a synthesis and revision time also takes place during the last two weeks of the Unit.
“Perception, Emotion et Comportement” (Module 3). A new multidisciplinary revision problem has recently been introduced to integrate objectives of the Units “Défenses et Immunité” and “Infections” (Module 4).

The exams in the 2nd and 3rd years currently consist of a written exam (120 MCQs covering basic medical sciences but also clinical skills and community experience) and oral examinations on practical work (in anatomy, hematology, histology, pathology or physiology, one discipline per student). Each semestrial Module exam, in conformity with the Bologna principles, yields 30 ECTS credit if successful. A total of 120 credits are obtained by the end of the 3rd BA year. Each Module exam can be passed thrice and it must be noted that very few students are eliminated from studies at this stage of the curriculum. From 2012 on, the written exam will be performed on a computer interface using the “Campus” software suite that enables a wider range of question formats (long menus, sequential questions, etc.).

Usual weekly schedules throughout the BA years comprise 16 to 20 hours of formal teaching (4 sessions of PBL, CC and DC sessions, a few lectures, practical laboratory and/or forums, interactive sessions). A slightly higher number of hours is devoted to self-learning (on average 24 hours/week; the full week is counted as 40-45 hours).

A PROGRAM EXPOSING STUDENTS TO COMMUNITY-BASED LEARNING EXPERIENCES

Students are introduced early in their studies to the “Community-based experiences” program (Dimension communautaire, DC) which includes an introduction to issues in medical ethics and the national health care system, an exposure to ambulatory/primary care experiences in private practice, and a direct exploration of the health care system network in Geneva or abroad during a one-month in the “Immersion in the Community” Unit (cf. chapter 2.6).
A LONGITUDINAL TWO AND A HALF YEAR CLINICAL SKILLS PROGRAM

In parallel to learning the basic medical sciences and having early community experiences, students follow the important "Clinical skills program" (Compétences cliniques, CC) which allow them to acquire basic skills in history-taking, physical examination, communication and technical procedures, as well as clinical laboratory and radiology interpretation.

ELECTIVE COURSES IN THE BACHELOR PROGRAM

Following the recommendations of the Swiss Universities Council (and in accordance with the Bologna principles), time was made available for elective courses in the 2nd and 3rd years. A call for electives was made to all Faculty members with the result of a rich variety of themes proposed, ranging from molecular biology to philosophy. During BA years 2 and 3, each student has to choose a total of four elective out of a list of around 50 (Appendix 7) proposed by the Faculty. Students can also submit and pursue their own subject provided it is deemed feasible by the Professor responsible for the elective program. The elective courses account for 10% of the study time and are examined separately from the other learning activities (3 ECTS credits per semester). Work is in progress to introduce a new elective course on the subject of complementary and alternative therapies, a theme which was identified as lacking in the previous accreditation assessment.

MASTER PROGRAM

THE FIRST AND SECOND YEARS (M1 AND M2)

Three major steps occur during years 1 and 2 of the Master curriculum:

A) Introduction to Clinical Reasoning Unit (Unité d'Introduction à la Démarche Clinique, UIDC)

B) Learning in a Clinical Environment Units (Apprentissage en Milieu Clinique, AMC)

C) Master thesis (Mémoire de master)

A) Introduction to Clinical Reasoning Unit (UIDC): this 14-week Unit, based on hypothetico-deductive reasoning, exposes students to case-based clinical reasoning tutorials in the domain of internal medicine, surgery, pediatrics, geriatrics, psychiatry and primary care medicine. The small-group clinical problem-solving tutorials are complemented by seminars and lectures.

The Unit is designed to: (i) facilitate revision, acquisition and integration of knowledge on basic pathophysiology processes and on mechanisms underlying common clinical presentations; ii) develop clinical reasoning based on examples of various types of diagnostic and therapeutic approaches of clinical problems; (iii) prepare the students for clinical clerkships. The last part of the Clinical Skills Program (CC) and of the Community-based experiences' program (DC) runs in parallel with the UIDC. The weekly schedule of activities is similar to that in second and third year MA Units (Appendix 8).

B) Learning in a Clinical Environment Unit (AMC): they represent a 55-week period of time dedicated to 11 practice-based clinical clerkships (examples of a clerkship study booklet will be available on site).

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6 http://www.unige.ch/medecine/static/inscription/options23/

7 Tutorials can be conducted in two phases (introduction tutorial and outcome tutorial) as in the 2nd and 3rd year, or be only an introduction tutorial (with no control on the students individual work), or only an outcome-report tutorial (students prepare in advance the cases and discuss them in the report tutorial). Cases can be written case problems, video recordings, or real patients.
The different AMC Units are detailed in the following table:

<table>
<thead>
<tr>
<th>LCE Unit</th>
<th>Duration (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First section</strong></td>
<td></td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>8</td>
</tr>
<tr>
<td>Primary Care Medicine</td>
<td>8</td>
</tr>
<tr>
<td>Surgery</td>
<td>8</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>8</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>4</td>
</tr>
<tr>
<td>Gynecology-Obstetrics</td>
<td>4</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>40</td>
</tr>
<tr>
<td><strong>Second section</strong></td>
<td></td>
</tr>
<tr>
<td>Ear, Nose, Throat (ENT)</td>
<td>3</td>
</tr>
<tr>
<td>Dermatology</td>
<td>3</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>3</td>
</tr>
<tr>
<td>Neurology</td>
<td>3</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>3</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>55</td>
</tr>
</tbody>
</table>

Compared to the previous curriculum, the duration of “Primary Care Medicine” Unit (AMC Médecine Communautaire et de Premier Recours) has doubled (from 4 to 8 weeks) as an answer to the recommendation of the last accreditation process; in fact the first two Master years have been restructured since 2008 to give more emphasis to primary care, both in the UIDC and with a longer clerkship in this domain.

Likewise, the duration of AMC Units of the second section has also been increased (from 2 to 3 weeks).

All AMC Units are designed to maximize the integration of students into the activities of the different clinical services, and to allow them, through problem-solving case-based sessions, to increase their competence in problem-solving and self-directed learning. Integrated within all clerkships are learning objectives in clinical pharmacology and clinical pathology, anesthesiology, radiology, ethics, legal medicine, patient safety and quality of care, together with selected basic medical science concepts.

To maximize the integration of students within the clinical services and with the hospital staff, each AMC Unit has been requested to schedule, when possible, the structured teaching on certain week days, in order to let entire other days free for the students’ clinical activities and self-directed learning. Additionally, some 8-week AMC Units have condensed theoretical training during the first 4 weeks, to allow more clinical days during the remaining 4 weeks.

A typical week program of an AMC Unit thus comprises:

**a. Clinical activities on the ward or in the ambulatory setting (practice):** the students take the medical history of patients during the admission procedure, then follow them under the supervision of residents and chief residents; they write the patient chart; they take part to the rounds; they observe or realize ambulatory patient encounters.

**b. Clinical Reasoning Learning: case-based Tutorials in small groups.** The students must solve a written medical case under the supervision of a tutor who provides them with the needed elements to progress in the solving of the case. By doing so, students identify the useful knowledge and train their clinical reasoning. The objectives defined during the session are used for their self-directed learning.

**c. Seminars or lectures on selected topics** (semiology, lab tests, critical reading, suturing, wound care, etc.).

**d. Seminars and lectures about transversal disciplines:** pharmacology, radiology, pathology, ethics, forensic medicine, quality of care and patient safety, etc.
To take into account the demand by health authorities for the formation of more physicians, the clerkship rotations are carried out not only at the University Hospitals of Geneva (Hôpitaux Universitaires de Genève, HUG), but also in affiliated regional hospitals (of the French-speaking part of Switzerland) which have agreed to train students from Geneva. The students performing their rotations outside the HUG continue to attend the structured teaching activities in Geneva which have been scheduled mainly on Mondays and Fridays. So the students can be active in affiliated hospitals from Tuesday to Thursday for clinical rounds and some specific seminars, such as radiology or semiology. E-learning programs are available in some disciplines (e.g. pediatrics) or under development in others (e.g. internal medicine).

At the end of the AMC Units of the second section, it is planned to introduce 4 hours of formal teaching about public health (revision of this topic was asked by students), as well as 6 hours about alternative and complementary therapies. The latter will be provided from 2012 on by dyads of professionals (a practitioner of the therapy concerned and a Faculty member) with the following topics: Chinese medicine and acupuncture; homeopathy; anthroposophy; neural therapy. Introduction and conclusion (one hour each) to the courses (four hours) will be given by a Faculty member.

C) Master thesis

A Master thesis in medicine was introduced in 2008 to achieve conformity with the Bologna principles, and place emphasis on the academic requirements of medical education. The main objectives of the thesis are: (i) to conduct a critical analysis of a problem related to health or medicine; (ii) to communicate clearly and efficiently in written about the results of the analysis. Each thesis is supervised by a Faculty member acting as thesis director. Students can work alone or in pairs. The thesis can be a research project, a systematic review of the literature, or a case-study on the following domains: clinical medicine, basic medical sciences, public and international health, medical humanities, health system management, health economics, medical informatics, and medical education. The thesis work corresponds to 15 ECTS (European Credit Transfer System) credits.

The students choose a topic posted by prospective directors on a dedicated web site at the beginning of the 1st year of the Master cycle site, and they contact the selected director. An outline of the project is uploaded by the end of the year. Introductory lectures are organized about how to do a literature review, how to write the thesis, how to cite properly and avoid plagiarism. At this stage, the students have a half-day per week to work on their project, under the director's supervision. In the spring of next year (2nd year of the Master cycle), the students have 9 independent days plus a 3-week period to finalize their thesis. The recommended length is 2500-3000 words for the main text, structured as a scientific article. The thesis is uploaded by early June. Each is evaluated by two assessors (the thesis director and one external expert) by means of standardized evaluation criteria. Revisions can be requested before the final grading which is reached by agreement. If a failing grade is given, the student has additional time to improve the thesis.

THIRD MASTER YEAR (MA 3) - ELECTIVES

The 3rd Master year consists of 10 consecutive months of full time activity. Students complete their knowledge in basic and clinical medical sciences by selecting practical electives in disciplines of their choice. The practical organization of the electives and the follow-up of individual students are carried out by a Faculty professor assisted by a secretary. The electives can take place in a selected network of Swiss hospitals or private practice primary-care physicians. Electives can also take place in research laboratories, in basic or clinical medical sciences. Electives outside Switzerland are possible (up to 5 months) with the authorization of the Faculty. At the end of each elective period, the responsible academic writes an evaluation report on the student performance. In 2010, Lausanne and Geneva created a joined evaluation grid to be distributed to each site receiving 3rd MA-year students. The validation of each elective is requested to get the ECTS credits of this year. There are currently about 250 electives offered to the students. These are described in a catalogue updated and edited every two years (the catalogue is available
on site). A personal project can also be taken into consideration, provided it is validated by the Professor in charge of the organization of the 3rd MA-year.

**Optional activities in the master curriculum**

At the beginning of the AMC Units, a program of basic skills in pedagogy is offered to volunteering students to help them taking maximal advantage of their clerkships. This program is made of one forum and 6 practical workshops.

**Strengths**

- The curriculum matches the objectives of the Swiss catalogue of learning objectives (SCLO).
- A detailed curriculum description (*cursus map*)\(^8\) is available on the Faculty website and is kept up-to-date, with constant comparison with the SCLO.
- The curriculum aims at balancing basic medical and clinical science with clinical skills acquisition, a public health and social perspective, with medical ethics and professionalism.
- From the first year of the BA program, the students are exposed to teaching formats other than lectures, such as practical work, problem solving and guided discussions in smaller groups.
- The PBL in the BA years also takes advantage of several teaching formats. In general, student evaluations of the curriculum and the teachers are positive and stable. All evaluations, including free comments, are transmitted to the coordinators of the teaching Units and analyzed in detail, allowing a rapid correction of problems that may occur (cf. chapter 7).
- The promotion of family medicine and community-oriented health care is a priority of the curriculum, with more than 150 private practitioners involved in the teaching activities (*Introduction à la Médecine de Premier Recours, IMPR, CC, clerkships*). Primary care medicine has been reinforced, with the possibility for each student to practice at the office of a primary care practitioner (cf. chapter 2.6).
- Clinical training in the MA program uses principles based on evidence in medical education and applies many of those recommended by the recent study of the Carnegie Foundation relative to the training of physicians. In this regard, clinical education in Geneva provides several pioneer aspects.
- The two multidisciplinary Curriculum Committees (BA and MA), responsible for overseeing the respective curriculums, enable easy and rapid adjustment of the teaching and evaluation programs, and promote transparent communication between the curriculum content providers.
- The formal and continuous evaluation of the curriculum permits the follow up of changes (cf. chapter 7).
- A database records direct contact teaching activities and teaching responsibilities.

**Weaknesses**

- The admission of students in the 1st BA year remains unrestricted, and the new aptitude test introduced in 2010 has not reduced the much too large year class size. This size precludes the use of a teaching format relying on problem-based learning in small groups. For the same reasons, optional activities cannot be introduced. This generates an educational experience which is unsatisfactory for both the students and the teachers.
- Some students complain that the curriculum is very heavy, despite the time allocated for self-directed learning. Part of the problem may stem from too many learning objectives, which are not always well-defined for the depth of detail required. By the end of the 3rd year of the BA program, students might report feeling "overloaded" and lacking free time.

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The PBL rules tend to relax, students fail to construct a coherent and multidisciplinary explanation of the cases, using in preference previous classes’ summarized notes for their reading.

- The BA assessment system is limited, or rather not well matched to the objective of critical thinking and autonomy. MCQs focus on assessing students’ knowledge rather than their abilities to apply knowledge. There is therefore no incentive for students to develop these abilities.
- During the MA years, some students feel overwhelmed by the Master thesis and by the absence of holiday between both semesters of the clerkships. This point is under consideration to analyze whether and how the schedule can be eased.
- Although the community health issues are better integrated and have been expanded, contact of the students with the reality of medical practice outside the University Hospital (outpatient care) may still be too limited.
- According to a number of tutors, students persist having difficulties in identifying important concepts, and not pay too much attention to details. This opinion should be buttressed by a formal study.

How to improve

a. All aspects of the program are reviewed each year by the corresponding Curriculum Committees. Proposals for change, based on student evaluations and teacher feedback, are discussed and validated by the Committees, allowing a continuous revision of the content and format of the curriculum with the teachers.

b. Coordinators for the 2nd and 3rd BA teaching Units have been asked to reduce the number and better define the learning objectives.

c. In addition to the MCQs in BA exams, new formats will be introduced such as case synthesis, open-ended vignettes and analysis of documents test items, as well as exams evaluating the student skills in oral communication, ability to summarize, etc.

d. Regularly renew of one or two problems per BA Unit each year so as to avoid the routine learning (and teaching) that can slip into the students and tutors habits

e. Making clinicians more aware that the clinical curriculum, although demanding, meets international recommendations such as those recommended in the book: Educating Physicians: A Call for Reform of Medical School and Residency, by Cooke, Irby and O’Brien.

2.3 STUDY PROGRAMME MANAGEMENT

Standards:

1. A curriculum committee\(^9\) has the responsibility and competence for the planning and implementation of the study program.

2. The curriculum committee has appropriate resources for the choice and implementation of appropriate teaching and learning methods, evaluation of students, evaluation of program, and innovations in the study program. The administration, academic staff, students, and other stakeholders are represented in the curriculum committee.

Annotations:

- Among other competencies, the curriculum committee has supremacy over specific departmental and subject interests, and the control of the curriculum within existing rules and regulations as defined by the governance structure of the institution and governmental authorities.
- Other stakeholders include other participants in the educational process, representatives of other health professions, or other university faculties.

Program management is under the responsibility of the Education Committee, headed by the Vice-Dean for Education. All decisions concerning the teaching and evaluation program are taken by multi-disciplinary Curriculum Committees (Bachelor and Master Committees). This organization improves communication between the various curriculum content providers, and allows a transparent decision-making process and a coherent curriculum structure. A formal and continuous evaluation of the curriculum enables to closely follow the effects of change.

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\(^9\) cf. SUK-Guidelines Art. 10, 2.03. The curriculum committee is of central importance to quality assurance of the study programme.
The Education Committee (EC) is the organism in charge of the curriculum for both human and dental medicine at the Faculty of Medicine of Geneva. The Vice-Dean for medical education chairs the EC. He is assisted by the two Curriculum Committees (BA and MA respectively) and advised by the UDREM.

The EC is composed of ex-officio members, of other members and of representatives of the students (Appendix 9)

The Education Committee has two sets of tasks:

**Educational tasks**

- Supervises pregraduate teaching activities of the Faculty of medicine. In this task, the EC has supremacy over departmental interests.
- Gives the general orientations regarding pedagogical developments (innovations) and evaluation.
- Ensures the longitudinal coherence and cohesion of the curriculum along years 1 to 6 (1-5 for the dentists).
- Examines and proposes the general options for pedagogical formats.
- Ensure the academic level and the constant evolution of the curricular contents.
- Maintains the database of pre-graduate teaching activities.
- Keeps all Faculty stakeholders informed about pre-graduate teaching.

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10 This includes teaching to medical and dentistry students, to students of other Faculties [Science, Law, Psychology], to paramedical professions [nurses, physiotherapists, etc.]
Promotion of academic teaching

- Ensures the renewal of the teaching staff.
- Promotes academic recognition of teaching.
- Encourages research in medical education.

The Curriculum Committees

The composition of both BA and MA Committees is shown in Appendix 10a and 10b. Briefly, they comprise the coordinators of the different BA Units, of the UIDC, and of the AMC Units; representatives for transversal programs and disciplines, representatives of student assessment and curriculum evaluation Committees, members of UDREM (Unité de Développement et de Recherche en Education Médicale) and representatives of students.

Both Committees and their executive steering boards meet once a month. Their role is mainly to get informed and inform, to validate curriculum changes and to bring necessary modifications when required. Occasionally, a theoretical theme regarding medical education principles is presented.

As an example, the MA Curriculum Committee responded to the introduction of the Bologna principles, the requirements of the new LPméd and demands of the Faculty by the following actions:

- increase the length of Primary Care Medicine clerkship;
- implement the Master thesis program;
- adjust the curriculum planning by increasing the length of the clerkships of the second section (from 2 to 3 weeks);
- implement semester student assessment and take the responsibility of the related exams (while they were under federal regulation before);
- implement a new transversal Unit aiming at preparing students for the new final federal examination (Examen Fédéral de Médecine Humaine, EFMH);
- find additional places outside HUG to ensure rotations in clinical clerkship for an increased number of students;
- implement a curriculum on alternative and complementary medicines.

Strengths

- The active and executive role of the two Curriculum Committees concerning curriculum content, instructional methods and quality control (discussions on the program evaluation leads to improvements that are implemented).
- Excellent coordination between the Committees in charge of the content of the curriculum and the Examination Committees.
- Active consideration of teaching/educational activities and responsibilities in academic promotion, search Committees, and budget allocation to Departments.

Weaknesses

- A persistent problem is the relative lack of perception of the curriculum as a whole. Many teachers in the MA years have little knowledge about what students learned in the BA program (needless to say that the reverse is also true). They tend to think that students have not learned much previously and do not try to re-activate knowledge (this although many clinicians are involved in teaching during BA years).
2.4 SCIENTIFIC METHODS

**Standard:**
The Faculty of medicine teaches the principles of scientific methods and evidence-based medicine, including analytical and critical thinking, throughout the entire study program.

**Annotation:**
- Training in scientific thinking and research methods may include elective research projects conducted by medical students.

The LPméd states that the objectives of the pre and postgraduate education shall be based on scientifically recognized methods. Our goal is to promote this approach from the first year of the BA program.

The scientific approach is fostered at several levels:

- In the first BA year, whenever possible, the link between a given clinical problem and its pathophysiological basis is emphasized.
- In the 2nd and 3rd BA years, students practice a scientific reasoning approach in the PBL tutorial sessions where they can test various models of explanation of clinical conditions.
- During the entire BA program, students study basic epidemiological and bio-statistical concepts that should help them reading and interpreting the research and medical literature.
- Since 2004, students of BA years 2 and 3 are offered electives in basic and clinical research, as well as in medical humanities. Students can approach the developing, designing, conducting, analyzing, and reporting on a research project. Elective courses deal with:
  - Scientific analysis and communication
  - New medical technologies
  - Molecular Endocrinology
  - Introduction to research in Neurosciences
  - Introduction to research in Virology
  - Experimental Cardiology
  - Research in Cardiovascular Biology
  - Practicals in Microbiology
  - Model systems in research
- Training in scientific thinking and research methods is also promoted by the inclusion of scientific literature (selected reviews and original articles) in the mandatory reading material of the teaching Units, and in the “Pour en Savoir Plus” sections (BA years 2 and 3).
- Research projects can be conducted by students in the laboratories of the Faculty of medicine (elective internships or in the context of the Research for Medical Students summer program, i.e. PREM11).
- The “Introduction to clinical reasoning Unit” (UIDC), and the clinical reasoning sessions of the AMC units, allow students to investigate and evaluate the patients’ signs and symptoms, as well as the laboratory results in order to understand the clinical problem and establish a cost-effective program of treatment.
- In the UIDC and during the 2nd and 3rd MA years, students receive theoretical support related to evidence-based medicine and scientific methods in the context of the Master thesis.

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11 http://www.unige.ch/medecine/enseignement/formationsDeBase/medecineHumaine/formationComplementaires/prem.html
During the “Community-based Experiences” Unit (IMPR), students are involved in the process of identifying, investigating, and reporting on a public health and community-related health issue.

The concept of evidence-based medicine is strongly reinforced and integrated into the clinical clerkship curriculum.

Strengths
A large number of teachers involved in the BA years 1 - 3 are also internationally recognized experts in basic medical and life sciences. They are active in the teaching of basic medical sciences in the first year, in PBL of second and third years, and expose students to ongoing research projects in their laboratories.

In order to increase the visibility of the academic research performed in our Faculty, tutors are thus encouraged to present their research activity to students whenever possible. We feel that since the last accreditation process, students are more exposed to the research dimension of medical science during their studies. This is reinforced by the fact that they have to present a Master thesis.

Weaknesses
There are only a few structured teaching hours on scientific methods or tools during the MA program and students tend to have forgotten what they learned during the BA years when it comes to critically reading an article or applying those principles to their Master thesis.

How to improve
As the notions related to clinical epidemiology and evidence-based medicine are better retained when practised regularly, the directors of Master theses and clinical supervisors might play an important role by personal feedback and role modeling. The MA Curriculum Committee also considers including 2nd and 3rd MA year students in the Journal-Club sessions organized weekly by the respective clinical Services (usually, only the 3rd MA-year students have access to this activity).

2.5 BASIC BIOMEDICAL SCIENCES

Standards:
1. The Faculty of medicine identifies the contributions of the basic biomedical sciences and integrates them into the study program.
2. The contributions of biomedical sciences are adapted to scientific, technological, and clinical developments, as well as to the health needs of society.

Annotation:
- The basic biomedical sciences comprise anatomy, biochemistry, physiology, biophysics, molecular biology, cell biology, genetics, microbiology, immunology, pharmacology, pathology, etc. They shall create understanding of the scientific knowledge, concepts and methods fundamental to acquiring and applying clinical science.

In Geneva, there has always been a strong emphasis on basic medical sciences and academic medicine. This is due to a tradition of high quality of research in these fields. Basic medical sciences are now an even more important part of the BA program since the redesign of the 1st year in 2004.

As mentioned before, the principles underlying the organization of the 1st year are:

a) **Horizontal integration of the basic medical sciences**: progressive introduction of knowledge from the molecular to the cellular levels and from the organ to the system levels.

b) **Vertical integration in selected topics**: appropriately chosen clinical problems (cystic fibrosis / atherosclerosis) are revisited several times during the year from the molecular to the system and psychosocial levels.

The acquisition of basic medical sciences is likewise the major goal of the 2nd and 3rd years of the BA program, while students acquire a scientifically-oriented reasoning during the PBL sessions.
The BA Curriculum Committee reviews the various teaching Units based on evaluation of the program by students, tutor feedback and new scientific knowledge. If necessary, specific task forces can be created when new themes are introduced (e.g. primary care/family medicine) or when disciplines bridge several Units (e.g. endocrinology, pharmacology, genetics, histology and pathology).

Strengths

Basic biomedical sciences are well represented in our curriculum. The BA program is generally appreciated by the students as far as it prepares them for clinical learning and residency training. Students show a keen interest in the scientific foundations of medicine as exemplified by in-depth discussions on the electronic forums of the teaching Units and an increase in the number of students applying for elective courses in basic medical sciences and research.

Weaknesses

Some learning objectives of the BA Units can be perceived by students as too detailed and too scientific for the preparation of their clinical years. One cause of this might be that most textbooks in use today incorporate much more molecular and cellular biology stemming from the latest scientific and technological developments than earlier versions. If the learning objectives are defined too vaguely, students become overwhelmed by the amount of information. Here, the experience of the tutor is vital to help students separate the essential knowledge from the excess detail.

How to improve

Some teaching Units provide a list of the key figures and tables within the pages to be read by the students. In addition, most Units organize meetings for all tutors involved in PBL sessions in order to define the depth of knowledge required for each learning objective. This enables more homogeneity among tutors and groups.

2.6 BEHAVIOURAL AND SOCIAL SCIENCES, MEDICAL ETHICS

Standards:

1. The Faculty of medicine identifies the contributions of behavioral and social sciences, medical ethics, educational sciences, and the legal and economic basis of health care that enable effective communication, clinical decision-making, and ethical practices. This is integrated into the study program.

2. The contributions of behavioral and social sciences, medical ethics and humanities are adapted to scientific developments in medicine, to changing demographics and cultural contexts, and to the health needs of society.

Annotations:

- Behavioral and social sciences include medical psychology, medical sociology, biostatistics, epidemiology, hygiene, public health, etc.
- Behavioral and social sciences and medical ethics should provide the knowledge, concepts, methods, skills, and attitudes necessary for understanding of socio-economic, demographic and cultural determinants of causes, distribution, and consequences of health problems.

COMMUNITY HEALTH TRAINING PROGRAM (CHTP)

Since 1995, with the introduction of successive curricular reforms, parts of the existing public health curriculum have been redesigned to address in a more relevant manner the needs of a changing society.

The CHTP spans from the first to the fifth year of the medical curriculum and promotes students’ early exposure to community health-related concepts and issues, to the professionals in these fields, as well as an early access to direct and hands-on activities in the community. The aim of the CHTP is to form competent, community health-oriented physicians. In particular, given the impending shortage of primary care practitioners, a priority objective of the CHTP is to interest students in family medicine, in the various community health institutions and health professionals.
The CHTP integrates primary care and community medicine-related issues as follows:

- **1st BA year. Introductory course on psychosocial and community health** with the program: *Personne, Santé, Société*. The program represents 20% of the formal teaching time during the first year. At this stage, the accent is put more on normality (psychological development of the individual, communication, decision making) than on diseases. A special attention is given to the concepts of complexity, chronicity, multidisciplinarity, ethics, health determinants, etc.

- **2nd BA year. Exposure to ambulatory practice.** Students are individually assigned to 4 afternoons over a year in a private practice (family practitioner, general internist or pediatrician). This *Introduction à la Médecine de Premier Recours, IMPR*, clerkship provides early contact of students with ambulatory care and long term follow-up. The aim of the program is to familiarize each student to the specificity of family medicine, i.e. to observe the components of a long term relationship between doctor and patient, to identify the specific activities of a primary care physician, to perceive and describe their own emotions in a professional context, and to practice competences acquired in the Clinical Skills program. Students’ experiences are gathered in a portfolio. The student with the best portfolio receives a prize of 1’000 CHF from the Dean’s office.

- **2nd and 3rd BA years. Community health oriented seminars.** *Dimension communautaire* program (approximately 50 hours). Students are introduced to the basic concepts of public health, social and preventive medicine, health systems, health economics, occupational medicine, ethical and legal medicine, medical history, epidemiology, as well as medical humanities. Options have been introduced representing 10% of the teaching: among the optional activities proposed by Faculty members, about one third is related to the CHTP.

- **3rd BA year. Community Health Experience.** *Immersion en Communauté*. During 4 to 6 weeks, groups of 3-5 students investigate in the community (in Geneva or abroad) a given health problem in its bio-psycho-social complexity and get familiar with the health network in charge of the problem. Issues such as exclusion, marginalization, poverty, human rights are discussed in formal seminars. Each group describes its investigation in “a student-teach-the-student experience” (oral presentation + poster + written report). The group with the best report receives a 1’000 CHF prize from the Dean’s office. Since 2006, the Community Health Experience is done in collaboration with the University of Applied Health Sciences (*Haute Ecole de Santé HEdS*) allowing the medical students who wish so to work together with students from other health professions (nutritionists, nurses, physiotherapists). The teaching staff of the HEdS is also involved and the experience has been regarded as very positive.

- **2nd and 3rd MA years.** A series of bi-monthly interactive seminars in medical ethics, medical humanities and legal medicine are given and integrated into the Internal Medicine, Community Medicine and Pediatrics clerkships.

- **2nd and 3rd MA years.** There is a two-month clinical clerkship in community medicine and primary care (*Apprentissage en Milieu Clinique de Médecine Communautaire et de Premier Recours AMC-MCPR*). This clerkship has been reviewed, developed and expanded taking into account the recommendations given in the previous Accreditation process.

What has been done:

- The *AMC-MCPR* has been reviewed according to the newly established Swiss Catalogue of Learning Objectives for Undergraduate Medical Training of the Joint Commission of the Swiss Medical Schools, where precise learning objectives of primary care and family medicine are mentioned.
- The *AMC-MCPR* has been expanded from 4 to 8 weeks in 2008: this clerkship has thus the same length as the clerkships of internal medicine, surgery, and pediatrics.
- The main objectives the students have to master are to identify and be familiar with the most frequent clinical problems encountered in ambulatory
medicine, to apply basic patient-centered clinical competencies and to be aware of specific health needs of vulnerable populations.

- More specific objectives are reached through 22 tutorials addressing frequent clinical problems in ambulatory care and 15 specific seminars. Furthermore, each student has the opportunity to take 24 half-day clerkships in various ambulatory care structures, such as private practitioner’s office, emergency ward, geriatric unit with home visits, drug dependence unit, etc.
- There is a summative exam at the end of the AMC-MCPR clerkship.
- An academic Unit of primary care and family medicine (Unité de Recherche et d’Enseignement en Médecine de premier recours, UREMPR) has been established in 2009 with a specific budget (3 times higher than what was available previously), which allowed the hiring of six general practitioners (part-time) and a full-time general practitioner as head of the Unit. In addition, a part-time research position was attributed to the Unit, which should allow developing research projects in primary care.

**Strengths**

There is a very diverse but coherent longitudinal program exposing the students to Community dimension issues.

Following the developments and implementations in 2008 and later, the program aims at exposing students more intensively to Primary Care Medicine and enhance a favorable perception of this domain.

A Unit of Research and Teaching in Primary Care Medicine has been created, providing a better visibility and academic credibility to the field.

**Weaknesses**

The system has improved regarding students' involvement in primary care medicine, but it relies on fragile resources: budget has to be maintained, private practitioners must be interested every year to collaborate in teaching, negotiations have to be carried out with external institutions each year relative to the number of students they will accept, under which conditions. The resources might become insufficient given the increased number of future students.

**How to improve**

All further initiatives regarding the promotion of Primary Care Medicine should concentrate on the preservation (and possibly increase) of the personal and financial resources devoted to this program.

**Perspectives / Commentaries**

Monitoring of career choices in upcoming years is mandatory to assess the effects of the program.
2.7 CLINICAL KNOWLEDGE AND SKILLS

Standard:
The Faculty of Medicine assures that the students have patient contact appropriate to their level of education and have acquired sufficient clinical knowledge and skills, so that after graduation they can assume appropriate clinical responsibility.

Annotations:
- Patient contact is made in cooperation with other healthcare professionals and includes experience in primary care.
- Clinical skills include: history taking, physical examination, clinical procedures and investigations, emergency practices, as well as communication and team leadership skills.
- Appropriate clinical responsibility includes health promotion, disease prevention, and patient care.

- Aspects of clinical sciences are learned already in the 2nd and 3rd BA years, as students study the signs and symptoms of a variety of frequent diseases, which are the subjects of PBL learning, and practise the associated clinical skills during the Compétences cliniques program. Further knowledge is acquired in the Introduction to Clinical Reasoning Unit (UIDC) and in the 55 weeks of clinical clerkships during MA years 2 and 3, which expose students to clinical sciences. In addition, for most students, the last or elective year, is spent doing clinical clerkships in Geneva, elsewhere in Switzerland or abroad. Overall, students have a structured contact with patients all along the curriculum.

Patient contact throughout the curriculum

<table>
<thead>
<tr>
<th>Year</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>Patient presentations (video) by private practicing primary-care physicians to illustrate issues of the Person, Health, Society program.</td>
</tr>
<tr>
<td>2nd or 3rd BA year</td>
<td>Regular contacts with a practising primary-care physician.</td>
</tr>
<tr>
<td>2nd and 3rd BA years</td>
<td>Small group seminars in clinical skills. Training seminars on basic clinical skills (history-taking and physical examination skills with senior students’ peer teaching). Formative OSCE stations with standardized patients (history-taking, physical exam and communication skills). Summative evaluation with an OSCE.</td>
</tr>
<tr>
<td>3rd MA year</td>
<td>All clinical activities. Case presentations.</td>
</tr>
</tbody>
</table>

Relevant community experience and teamwork with other health professions in patient care occur throughout the curriculum and have been described above (cf. chapter 2.6).

- A longitudinal 2 1/2 years Clinical Skills Program (CC, Compétences cliniques) comprising 1-2hr sessions each week runs from the beginning of the second BA year to the end of the UIDC in the 1st MA year. The CC teaches students the basic clinical skills and competences necessary for their clinical clerkships in the fourth year, as well as other skills necessary for the practice of medicine; it attempts to foster the development of skillful and empathic patient management.

- The 4 main principles that guide the implementation of the CC are:
  1) Vertical integration with basic medical science objectives in the PBL Units;
  2) Longitudinal integration to ensure a progressive acquisition of the various skills and competences;
  3) Emphasis on practical learning with various educational methods;
  4) Providing a multidimensional formative and summative evaluation.
Running in parallel to the PBL and the UIDC units, 76 seminars of the CC cover the following topics: basic concepts and skills of history-taking and physical examination of the main organ systems (40 seminars); introduction to the medical encounter (3 seminars); communication skills (8 seminars); patient education (1 seminar); technical skills (8 seminars); radiological procedures (4 seminars); laboratory and other paraclinical procedures (8 seminars); basic life support and resuscitation (4 seminars).

The seminars are organized in groups of 8 students and most of them take place in the Clinical Skills Lab located in the HUG. Seminar objectives are defined in a seminar booklet. A typical seminar combines discussion and demonstration by the tutor, role-plays and mixed peer physical examination exercises. According to the objectives, some seminars use various multimedia tools and interaction with standardized patients.

Students can further train basic clinical skills (structured history-taking, physical examination and technical skills) in participating in a program of 18 optional training sessions organized during the 2nd and 3rd BA years. These training sessions are given by fourth and fifth-year student preceptors, who have been trained by the clinicians responsible for the teaching and the medical staff of the CSP. Direct supervision of the sessions is provided by the staff of the CC.

A higher level of integration and training is provided by 4 compulsory formative OSCE stations (2 in the second BA year and 2 in the third year). The format is a 20 minutes focused medical consultation with a standardized patient, after which students will write a medical report. These stations integrate skills in history-taking, physical examination and communication. Students have a portfolio in which the objectives of the station (as defined by the teachers), as well as the students' personal objectives are described. All students benefit of a direct supervision by a trained clinician. The clinician will provide personalized feedback to the student and help her/him to define the objectives for the next station. The clinician fills in detailed checklists on history, physical examination and attitudes. This allows getting feedback on performance of each student, on the performance of the whole class, and on the performance of the teaching. A fifth station with real patients (suffering from rheumatoid polyarthritis) trained as patient instructors is organized during the UIDC unit.

Finally, students can also practice their acquired clinical skills with real patients during the Community Health experience program (cf. chapter 2.6).

**Evaluation of the program**

The students evaluate each seminar of the CC in written.

**Evaluation of the students**

The students’ evaluation program is multidimensional, formative and summative. Formative evaluation of students is provided during the compulsory OSCE stations (portfolio, individual feedback, feedback to the class). Summative evaluation has 2 levels: first, the CC objectives are tested during the multiple choice exams of each Module of the second and third BA years, as well as in the UIDC exam. Second, a four-station OSCE is part of the exam of Module 4 at the end of the 3rd BA year (Appendix 11).

The new federal licensing examination (EFMH) comprises 10 OSCEs (and 2 CBAs) at the end of the 3rd MA year.

Students are therefore exposed to issues concerning health promotion and disease prevention from the 1st year to the end of the curriculum.
Strengths

- We have a very solid clinical skills program in the 2nd and 3rd BA years and in the beginning of the 1st MA year (see Appendix 8 for overview of the program). The program has been generally very well evaluated by the students and rated as sufficient in preparing them for the clinical years. Most students estimated that sufficient time had been devoted to the learning of clinical skills in the BA program, as well as in the AMC Units.
- As judged from the OSCE examinations at the end of the 3rd BA year, most students have clearly acquired skills with respect to doctor–patient relationship, taking a history, and ability to do a clinical examination aimed at a given system.

Weaknesses

- Too much time is devoted in certain basic clinical skills seminars to teach the physiopathological basis of signs and symptoms, and not enough time is left to practice of physical examination itself. To counter this trend, 20 minutes lectures were introduced at the beginning of these seminars, which were immediately followed by practical exercises in the clinical skills lab. This design was well evaluated by the students.
- Originally, we had 3 seminars on patient education topics integrated in the UIDC unit. These seminars were not very well evaluated mainly because students felt them partly redundant. Two of these seminars were rebuilt and integrated in the clinical clerkships in order to increase their relevance.
- The OSCE exam at the end of the 3rd BA year evaluates only one skill per station (history-taking, or physical examination, or technical skill, or doctor-patient relationship). Although basic communication skills are evaluated in each station, the one skill per station model is not close enough to the integrative objectives of our program and the design of the formative OSCEs.
- Multimedia resources are still not sufficiently provided.

How to improve

- Continue to reconsider the design of the basic clinical skills seminars to increase the time allotted to practice.
- Design a new OSCE exam at the end of the 3rd BA year, more in line with the integrative goal of our program.
- Increase the availability of multimedia resources.
- Develop a new longitudinal seminar on chart synthesizing and writing.

2.8 LINKAGE WITH MEDICAL PRACTICE AND THE HEALTH CARE SYSTEM

Standards:

1. An operational link between the study program, postgraduate medical education, and the independent professional practice of medicine is assured.
2. The curriculum committee uses information from the professional field, the health care system, and society to improve the study program.

Annotation:

- Operational linkage includes the clear description of the contents and their interrelations in the various phases of education, postgraduate medical education, and independent professional practice. The local, national, regional, and global context must be taken into consideration.

The operational linkage with postgraduate training is effective through the following:

- The new federal law on medical professions (LPméd. 2006 Appendix 2) stipulates that both postgraduate and continuous academic formations are built upon and extend the competences acquired during undergraduate education.
- The curriculum of the Faculty of medicine of Geneva is based on the objectives listed in the Swiss Catalogue of Learning Objectives (SCLO) which specifies the basic medical training level to be attained in view of the postgraduate and continuing formations.
- In practice, the postgraduate medical education depends on the medical specialists societies (members of the Fédération des médecins helvétiques, FMH) and on the Swiss Institute of Medical Education (Institut Suisse de Formation Médicale/ISFM); both of them define the outcomes required to obtain a specialist title after 5 to 6 years of
postgraduate training (*Règlement de la formation postgraduée*). Since most of the postgraduate training takes place at the University Hospitals (nearly 80%), the respective Faculties of medicine are thus heavily involved in the formation.

- Most members of the MA Curriculum Committee (MCC) are taking part in undergraduate as well as in postgraduate medical training. A fruitful interaction in the design of both trainings is guaranteed.
- Academic heads of the main Hospital Services (e.g. surgery, pediatrics, internal medicine, etc.), as well as leaders of primary care / family medicine are members of the MCC.
- The students are regularly provided with informations on the link between pre and postgraduate training and the content of medical disciplines. During the AMC Units, different medical specialists comment on their specialties and the respective training programs.
- Faculty members in charge of the postgraduate education are involved in the further development of the existing network between the Faculty of medicine, the University Hospital, the different private and public hospitals/clinics of the Geneva-Lausanne area, the Swiss Societies of Specialty and the local Medical Association. This in order to gain a better knowledge of the future needs for both public and private medical practice and help students to determine their choice of career and specialization.

Indeed, several factors will possibly influence the transition from undergraduate to postgraduate and continuous education, e.g:

- The regular increase of female students and graduates may affect the organization of postgraduate training, as women graduates tend to prefer certain services such as pediatrics and dermatology and may seek part-time employment.
- The programmed shortage of primary care physicians in all Western countries and its consequence on the medical care of the population.
- The changing demographics (more aging subjects with chronic diseases) is a major subject of reflection for medical education.
3 AREA: STUDENTS

3.1 ADMISSION POLICY AND SELECTION PROCESS

Standards:
1. The governing body and the Faculty of medicine have formulated admission conditions that clearly explain the student selection process.
2. Gender equality is guaranteed.

Annotation:
- Selection conditions describe the criteria for admission to medical studies. The description of the selection process includes both the rationale and the selection methods. The appeal procedure is described.

Admission policy

Swiss citizens need to hold a baccalaureate degree (Swiss maturité or equivalent degree). The admission requirements for students that do not hold a Swiss citizenship are complex and described in detail in our Règlement d'études presented on our web site (Appendix 1).

For any student, admission is only considered if he/she has not failed in another Faculty of medicine, or if he/she has not failed in two different non-medical Faculties.

Some cases of conditional admittance upon failure in previous non-medical studies can however be considered.

The different situations are described in the Règlement d'études.

Appeal

Students that are not admitted can oppose the decision.

Selection procedure

Since 2010, prior to admission, students are obliged to take a formative aptitude test. This is the same test as used for the regulation of admissions in 4 of the 6 Faculties of medicine in Switzerland. Although the Faculty voted for the introduction of an admission policy, the Geneva government is still opposed to any form of pre-University selection.

As mentioned before (cf. chapter 2.2), in spite of the fact that the test is designed to indicate the likeliness of success in the first year medical curriculum, Geneva candidates who failed it were not discouraged to confirm their inscription. So in 2010, we had to accept about 350 new students adding to the approximately 150 students who repeated the first year, a total number in vast excess relative to the PBL and clinical capacity of 140 students in human medicine and approximately 20 in dental medicine. Hence the high failure rate imposed on the exams of the first year.

It is important to remember that the absence of a selection policy for access to the first year was one of the major criticisms for our Faculty in the last accreditation process. The international experts considered that the high failure rate of the first year “risks fostering a spirit of competition amongst first year students that is not conducive to team work in subsequent years of the program”. Surprisingly, however, with more than 10 years of experience with PBL in the 2nd and 3rd BA years, we did not note this spirit of competition between students in PBL groups, despite the drastic selection in the first year. Also, the Geneva medical students, even those who recently became graduates, are the strongest advocates for not restricting the access to the 1st year.

Therefore, in a time of limited resources, and in the absence of a legal basis for a pre-University selection process, we have to admit that although the curriculum of the first year in Geneva has been much improved, it could not be completely reformed for allowing independent small-group learning.

Equality of men and women is assured

There is no selection based on gender.
**Strengths**
The introduction of a non-selective aptitude test for students to indicate how well they are likely to perform in the medical studies is a part of our strategy to convince the Department of Public Instruction that a selection policy before the first BA year is needed to ensure optimal conditions of learning.

**Weaknesses**
The very large number of students in the 1st year required that the class is split in two lecture halls. The lectures are given in the larger hall and transmitted by video in a smaller hall.

### 3.2 NUMBER OF STUDENTS

**Standard:**
In all phases of the study program, the number of students is defined and in accordance with the capacity of the Faculty of medicine.

The clinical capacity is currently of 140 students in human medicine.

**Perspectives / Comments**
The clinical capacity for the formation in human medicine has been recently debated with the main stakeholder, the University Hospital. There is no question that an increased number of physicians must be educated in coming years, not only to meet the growing demand of University- and non-University Hospitals for medical personnel, but also in view of the future needs of the ambulatory sector confronted with more and more aging populations and the burden of chronic diseases accompanying longevity. This increase however must be accompanied with an increase in budget to be able to keep up the quality of our medical education.

### 3.3 STUDENT SUPPORT AND COUNSELLING

**Standards:**
1. The Faculty of medicine offers support and counseling services for the students.
2. The counseling program is based on monitoring the learning progress of the students and takes their social and personal needs into account.
3. Students have access to a gender equality commission.

**Annotation:**
- Social and personal matters include academic support, career planning, as well as counseling concerning health problems and financial matters.

Three Faculty professors have the role of Students’ Advisers: one for BA years 1 - 3, one for MA years 4 – 5, one for the MA final year (elective year). The advisers give collectively about 1000 personal consultations each year, 1/3 of which concern academic problems, 1/3 social and financial problems, and 1/3 personal and health problems. Advisers also answer e-mail requests for help or advice. Advisers of years 4 - 6 inform students about different clinical careers, the adviser of years 1 - 3 explain research possibilities. Each adviser spend approximately 8 hours a week in his/her tasks. A Student’s Office situated in the University Medical Center (CMU), next to the Dean’s Office, is open all week days from 9.30 am to 12.30 am, staffed with three secretaries acting also as assistants to the students’ Advisers.

**Student information**
Students are informed at the beginning of each academic year, throughout the whole curriculum, about the ongoing program and administrative issues. In the first year, a general presentation on the structure and organization of the Faculty of medicine is given, as well as an overview of the curriculum and the evaluation procedures. At any time, for any question later, students have access to Advisers of the respective parts of the curriculum they follow.
Students receive information in several ways:

- orally (at the beginning of the 1st, 2nd, 3rd BA-years and 1st MA-year) and on several further occasions depending on the unfolding of the curriculum (information given by the students’ Advisers);
- orally during personal interviews at the request of either the students or the students’ Advisers;
- in written as posted on the Faculty information boards situated at several places in the University Medical Center and University Hospital, or by e-mail on the personal address of each student.

Guidance to students for elective

The Adviser in charge of the 3rd MA-year counsels students for their electives.

Social services

Students can contact one of the three Advisers of the Faculty, or the Social Affairs Office of the University if they find themselves in difficult financial conditions. The Bureau de placement de l’Université helps students to find temporary jobs. The specialized University Health Service provides support for any problem related to physical or psychological uneasiness.

Counseling is based on the monitoring of student progress along the curriculum and also addresses social and personal needs

Counseling takes place primarily at a student’s request. One exception, in the BA years, is the request for an interview by the Adviser because of a repetitive negative evaluation of the student performance (Advisers read through each individual written evaluation of the students by the teachers). In the MA years, a few students who show difficulties in their academic or professional competences might also be requested to meet the Adviser, in order to identify the ways to overcome the problem (this may include solving personal problems first).

Access to a Committee in charge of ensuring gender equality

This is not primarily intended for students but the Faculty does have a Committee for the academic promotion of women. Its current chairperson is the students’ Adviser of BA years 1-3.

Strengths

- There are many resources for counseling and helping the students, although only few use them fully. However, students who turned to these resources found them adequate and helpful.
- We managed to secure some assets for paying a few fellowships covering the entire studies, or, more largely available, for small financial help limited in time.

Weaknesses

- The number of students with financial problems has increased over the last few years, hence the resources to help all of them are becoming insufficient.

12 http://www.unige.ch/emploi/EmploiStage/Offres.html
3.4 STUDENT REPRESENTATION

**Standards:**
1. The Faculty of medicine has a policy on the representation and appropriate participation of the students in the design, implementation, and evaluation of the study program, as well as in other matters relevant to the students.
2. Student organizations are promoted.

**Annotation:**
- The representation and participation of students include their representation on the curriculum committee and other relevant bodies, as well as social activities.

**Note: This section was written by a group of students**

The Faculty has two student representations: the AEMG (Association des Etudiants en Médecine de Genève) and the AESMS (Association des Etudiants en Science du Mouvement et du Sport). Because the AESMS is only about a year old, we will focus on the AEMG structure and function. Every year, about 20 students join the AEMG as active members and play an important role in various Committees. The large majority of students, however, do not share this motivation. Therefore, active members of the AEMG are more delegates than true representatives. Moreover, their implication is rather short lived due to the high turnover of members in the Association.

Students participate in the:
- Education Committee (1 student per year, chosen by the AEMG);
- Bachelor and Master Curriculum Committees (2 students per year, chosen by the AEMG);
- Participative Council (8 students, elections are organized by the University and the students);
- Library Commission (1 student, chosen by the AEMG).

The students who are members of the BA and MA Curriculum Committees are thus informed of decisions taken about the curriculum, and influence these by participating in the discussions, by making suggestions and by their vote. Many changes introduced in the curriculum have originated from criticisms and suggestions made by the students.

The students who are members of the Participative Council can hear about the politics of the Faculty, the nomination of professors and the decisions concerning the budget, etc. They can ask questions to the Dean and Vice-Deans who attend the sessions. Students participate in the election of the Dean, Vice-Deans, and Directors of Departments and in all votes regarding important changes in the curriculum, budget, etc. Due to the composition 13 of the Council, their vote can strongly influence decisions and has done so on several occasions.

The internal evaluation committee (Steering Group) for this Accreditation has noticed that students were generally not involved in the design of major educational changes (neither about learning objectives, nor about teaching format). As for the management and the practical organization of the studies, students are usually consulted after the decision, for feedback purposes, rather than during the decision process and this may explain the relatively poor evaluation (by their fellow students) of the students’ participation in the Faculty’s Commissions. Since several years, there has been an evolution, i.e. the Faculty tries to associate students at the beginning of new educational changes, such as the current design of the new exams for the BA and MA Curriculums.

Concerning the evaluation, many questionnaires ask the students to express criticisms and suggestions on the different Modules and the teachers involved. Since several years, the Faculty posts on its web site PDF files of the evaluations of all teaching Units 14, both at the BA and MA levels. However, due to insufficient information of students about this site, many

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13 16 professors; 8 collaborators of teaching and research; 8 students; 4 members of the administrative and technical staff.

14 http://www.unige.ch/medecine/enseignement/formationsDeBase/medecineHumaine/evaluationDeLEnseignement.html
of them still do not know the way their evaluations are used, think they are useless and believe in a lack of transparency. We have noted in recent years that less and less students are completing the evaluation forms. How to reverse this trend is discussed in the Curriculum Committees.

A delicate issue is how the Faculty handles badly evaluated tutors. Teachers are evaluated only by students and this sole source of information can be open to bias. The policy of the University of Geneva is that the evaluation should be returned to the teacher alone\textsuperscript{15}. At our Faculty, the procedure, known to the students, is that the nominal evaluations are transmitted to the teacher, to the coordinator of the teaching Unit, to the chairperson of the Curriculum Committee concerned, and the Vice-Dean for education\textsuperscript{16}. The director of the tutor training program is also informed. In case of bad performance noted on several occasions and by more than a group of students, a meeting is organized between the tutor and the different persons informed of the evaluation for an open and frank discussion on the ways to amend the problem. Most difficulties settle spontaneously within the three first years of activity of the concerned tutor.

The internal evaluation committee also fully agrees with another matter of concern to the students, i.e. the relative lack of communication between them and the Faculty. Even if only a few students are interested in the politics of the Faculty, we plan ways to implement an active policy to foster communication.

The different activities promoted by the AEMG (student-student partnership program \textit{Parmed}, medical students’ journal, Teddy bear hospital, etc\textsuperscript{12.}) are supported logistically and financially, whenever possible, by the Faculty, by the University or private and public sponsors. \textit{Saturnales} (ironic spectacle and charitable party) are not related to AEMG, depending only of 3\textsuperscript{rd} students each year.

Finally, it must be mentioned that students have access (some against payment) to all sports and cultural activities proposed by the University of Geneva.

\textbf{Strengths}

The Faculty has always been able to count, year after year, on a group of very dedicated students of the AEMG that constitute a crucial support to develop and improve the curriculum. The AEMG, with its numerous curricular and extra-curricular activities, contributes to the representation of the Faculty in the City of Geneva.

\textbf{Weaknesses}

The students, as a body, do not fully play the role that they could play, in part due to the lack of interest or commitment for the Faculty affairs.

As mentioned above, a better communication by the Faculty could revive the students’ motivation.

The internal evaluation committee and the students agree that, although there has never been any opposition from the members of the Faculty concerning student activities or organization, the support of the Faculty is not as strong as it could be: a more active policy of support is not developed, such as valorization of the commitment of the students by ECTS credits, or some educational acknowledgement, as is done elsewhere.

\textsuperscript{15} The students that were present agreed that evaluation of teachers could be anonymous. The Education Committee concluded that all evaluations would be published on the web but in an anonymous way.

\textsuperscript{16} A poor evaluation, for example of a tutor, is first discussed by the chairperson of the teaching Unit and the tutor. They examine together what went wrong and what can be done to improve the situation. If appropriately treated, most situations are corrected and the next performance of the tutor is considerably improved. In case of a repetition, the tutor is seen by the chairperson of the teaching Unit and the chairperson of the Committee concerned. If the problem persists, the Vice-Dean is involved in the discussion. Over the 10 years of the new curriculum we had to reject only one tutor.
The selection of students for curricular-related activities (e.g. NeuroClub, see footnote 12, the hiring of student-monitors for macroscopic anatomy practicals) is not transparent. In the clinical years (Master), the hierarchy does not always understand why students leave the Hospital to attend Faculty Committees.

How to improve

This section is the result of a discussion between students.

1. Regarding the participation of students in Faculty Committees of MA years, the Vice-Dean in charge of education could address letters to the hierarchy so that the concerned students can prove, if necessary, that they participate to an official meeting.

2. The Faculty could consider the valorization of the commitment of the students by ECTS credits.

3. The Faculty could help the AEMG to be more visible by providing a more accessible office.

4. The Faculty could improve the students’ representativeness by giving it a vote in a maximum of Committees (as the Professors’ nomination Committees).

5. The Faculty could establish criteria to select students for teaching (and research) activities (e.g. anatomy) and involve the AEMG in the selection.
4 AREA: ASSESSMENT OF STUDENTS

4.1 ASSESSMENT METHODS

**Standards:**
1. The Faculty of medicine defines and communicates the methods and criteria for the assessment of students.
2. The reliability and validity of the assessment methods are documented and evaluated and new assessment methods developed.

**Annotations:**
- The definition of assessment methods includes:
  - the balance between formative and summative assessment;
  - the number of examinations and other tests;
  - the balance between written and oral examinations;
  - the application of normative and criteria-based assessments, as well as the use of special types of examinations, e.g. Objective Structured Clinical Examination (OSCE);
  - the criteria for the admission and passing of the federal examinations are defined and published by the federal government.  
- The assessment methods are evaluated to determine how they promote learning.
- New assessment methods may include, for example, the use of external examiners or IT-instruments.

**Methods and Criteria:**

The Faculty of medicine has clearly defined methods and criteria for assessment of students. **Appendix 12** presents an overview of the assessments methods throughout the curriculum.

Since 2006, major changes in the medical formation have taken place. The Bologna principles and the LPméd have been adopted by all Faculties of medicine in Switzerland; thus a BA - MA curriculum with University-based exams has been implemented with summative assessments at the end of each semester for the attribution of credits according to the European Credit Transfer System (ECTS) = 180 credits for the BA level, 180 for the MA level. The LPméd introduced (LPméd **Appendix 2**) a new federal licensing examination (**Examen fédéral de médecine humaine, EFMH**) once the MA is completed. The EFMH comprises a multidisciplinary 300 MCQ exam (passed on 2 half-days) and 10 OSCEs + 2 CBA stations. This new exam format will take place for the first time in August (MCQ) and September (OSCEs + CBAs) 2011, and is entirely based on the revised (2008) Swiss catalogue of learning objectives (**SCLO, Appendix 3**).

The methods used for the summative assessment of medical students along the curriculum and the criteria for pass/fail levels are explicitly stated and known to all students. Typically, the pass level is a note of 4 on a scale from 1 (low) to 6 (high). Basic information on both University exams and the EFMH is available on the Faculty’s web site. 

The descriptions of summative exam modalities, as well as formative assessments are presented below:

- **In the BA years (Appendix 13):**
  - Formative evaluation of each student’s work at the end of each teaching Unit, done by the PBL tutor (example, **Appendix 14**).
  - Formative OSCE stations (one per semester) to prepare students for the summative OSCE at the end of the 3rd year (example, **Appendix 15a and 15b**).
  - Summative assessments at the end of each Module (twice per year during the 3 BA years) by means of multiple choice questions (120 MCQs) and other formats (e.g. practical lab work in year 2 and 3, OSCEs with standardized patients, clinical vignettes in year 3).
  - The writing of a personal report (formative) after completion of the Community Health Experience Unit, at the end of the 3rd year, accompanied by both poster and oral presentation.

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17 Interim regulations according to Art. 62 MedBG ??? (il y a déjà une footnote 12, page 46.
In the MA years (Appendix 16):
- Formative evaluation of each student’s performance by the attending physician at the middle and end of each Learning in a Clinical Environment Unit (AMC, example in Appendix 17), and after each rotation of the Elective Year (Appendix 18).
- A summative exam (MCQs) at the end of the Introduction to Clinical Reasoning Unit (UIDC).
- Summative assessments at the end of each semester by the means of specific exams for each AMC Unit. For the major Units (1 to 5), modalities comprise a combination of MCQs, structured oral exams, computer-based assessments (CBA) and OSCEs, whereas for the minor Units (6 to 10) and longitudinal disciplines, they involve CBAs and/or structured oral exams.
- A summative Master thesis to be finished by the end of the 3rd MA year.

Following the Master degree in medicine, the federal licensing examination (EFMH) takes place at the end of the 3rd MA year (MCQs and OSCEs+CBA in separate sessions).

About assessment methods:
The main goals of the evaluation system reflect the concerns of the Faculty to appropriately train students to become doctors who are not only medically and technically competent, but also capable of having a professional attitude towards patients, their families, other colleagues and collaborators involved in patient care. Therefore the different facets evaluated, which comprise the clinical reasoning process, the use of evidence-based principles, aptitudes in communication, as well as acquisition of competence in procedural techniques, lend themselves naturally to a balanced combination between formative and summative formats of evaluation, as well as between different types of formats used.

Evaluation formats in use:
1) The formative evaluations comprise all standardized questionnaires in use throughout the curriculum.
   a. During the BA years, an identical evaluation questionnaire (or form) is used at the end of each Unit, which is completed by the group’s tutor (Appendix 14). A “Train the tutor” workshop is organized to present and discuss the way to complete in the form. Each Module comprises a formative OSCE station to help students practice and integrate clinical skills (cf. chapter 2.7), with a structured feedback (Appendix 15a is an example of an OSCE station and appendix 15b is the formative evaluation form.) given to each student by a clinician. The four formative sessions prepare for the summative OSCE at the end of the 3rd BA year.
   b. During the MA years, a formative evaluation of each student’s performance is carried out at the middle and the end of every Learning in a Clinical Environment Unit (AMC) by the physician in charge (Appendix 17). These evaluations put particular emphasis on professional attitudes and behavior and are mandatory for taking the summative semester exams (Appendix 16). Formative evaluations also take place at the end of each clerkship selected during the 3rd MA elective year (Appendix 18). Since the clerkships are organized with the Faculty of medicine of Lausanne, the evaluations have been developed jointly.
2) The summative evaluations comprise the following formats:
   a. Written exams comprise multiple choice questionnaires (MCQs) at the end of each Modules / Learning Units of BA and MA programs, a formal report at the end of the 3rd BA year (Community Health experience), and the Master thesis at the end of the 3rd MA year. One main advantage of the MCQs format is the testing of a large amount of knowledge over a short period of time, for the whole class, in a valid and reliable way, inasmuch as the questions are adequately written, cover the objectives and are appropriately
balanced with the help of a blueprint. MCQs can also test some aspects of understanding of complex concepts, application of knowledge, or even clinical problem solving. The Master thesis has been presented before (cf. chapter 2.2 and Appendix 19).

b. **Computer-based assessment (CBA)** uses specific software developed for testing of clinical cases or vignettes, offering highly reliable security and traceability. The starting point of a CBA question is a clinical vignette followed by a series of items to solve, ranging from open text formats to MCQ-like formats which may include tables or images on which areas of interest should be pointed. The main advantage is the creation of vignettes followed by « dependent » items, i.e., appearing in a sequential order that does not allow backward return. CBA allows the appreciation of student’s knowledge in terms of strategy of patient care, with dynamic and interactive simulations on the different phases of history-taking, clinical examination, lab work-up, etc. The CBA format often replaces the structured oral examination for it is more standardized and objective.

c. **Oral exams** comprise the traditional case-based discussion between two experts-examiners and a student, which may be preceded by the clinical examination of a real patient. Clearly structured clinical scenarios, as well as the use of grids/checklists for correct answers, permit the evaluation of the student’s reasoning abilities and how knowledge is applied to a clinical problem.

d. **Objective Structured Clinical Examination (OSCE)** is a format allowing appreciation of the clinical and practical competences of a candidate. It usually comprises several successive « stations » in which students are asked to perform different predefined tasks in a limited amount of time, in the presence of an examiner who reports the student's performance on a checklist; the latter defines the expected answers or skills to be performed by the student on the basis of defined criteria. This format usually relies on standardized patients (normal individuals, often actors, trained to simulate a variety of medical conditions).

**Validity and Reliability**

Criteria 1-4 below are considered to ensure the validity and reliability of MCQs in Geneva:

1. The content validity is based on the fact that the questions are developed by the teachers and experts in each domain. The same objectives are used to set the content of the teaching and that of the exam questions.
2. An Examination Committee (BA and MA, respectively) critically assesses the logic, clarity, and formal appropriateness of each question before it is included into a summative exam (many questions go through revisions before they are accepted by the Committee).
3. Each summative exam contains a set of previously used questions with known statistical indices (D-diff and R-bis), to compare the performance levels of successive cohorts of students to these questions and estimate the relative difficulty of the whole exam.
4. The respective Examination Committees reviews the difficulty (D-diff) and discrimination power (R-bis) of each new question. Items that do not perform as expected (usually less than 5% of the pool) are eliminated before final scores of students are computed.
5. After 2 years of experience with the CBAs, we observe a level of reliability and validity comparable to that obtained previously with structured oral exams in the same discipline, and a slightly better correlation with the continuous assessment in clinical settings.
6. Oral exams tend to be replaced by CBAs because the latter, once developed, are less time and personnel consuming; experts are no longer needed to carry out the individual examination of a large number of students, over extended periods of time.
7. The OSCE format has proven valid and reliable provided that a sufficient number of cases are tested. Basic statistics can be computed to assess the difficulty and discrimination power of each case presented.
8. The final federal licensing examination (Examen Fédéral de Médecine Humaine, EFMH) is under the responsibility of federal authorities empowered by the Institute for Medical Formation in Berne (Institut für medizinische Lehre, IML) which has a long standing expertise in the evaluation of exams in the field of medicine. The Faculty of Geneva has representatives who were involved at the stage of the development of the MCQs and the OSCEs, and will provide the setting and administration of the exams locally for Geneva students. The scoring will be left to the IML, presumably after previous discussion between stakeholders of all Swiss Faculties.

4.2 RELATIONSHIP BETWEEN ASSESSMENT AND LEARNING

<table>
<thead>
<tr>
<th>Standards:</th>
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<tbody>
<tr>
<td>1. Assessment principles, methods and practices correspond to teaching objectives and promote learning.</td>
</tr>
<tr>
<td>2. The number and type of examinations encourage integrated and interdisciplinary learning.</td>
</tr>
<tr>
<td>Annotation:</td>
</tr>
<tr>
<td>• Adjustment of number and nature of examinations takes into consideration how to avoid negative effects on learning.</td>
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</tbody>
</table>

Principles, Methods and Practices

The Faculty of medicine relies on Faculty members, and particularly on UDREM members to maintain high assessment standards. Introducing, developing and controlling the quality of existing and new assessment methods are missions of the UDREM. Because of previously detected insufficient expertise and hands-on experience among Faculty members in developing reliable and valid student assessment instruments, UDREM has received additional human resources to address this issue.

For all teaching Modules or Units, educational objectives are defined first, then the specific curriculum and the examination formats. The same team performs these tasks. This optimizes concordance between objectives, teaching contents, and evaluation methods. When possible, evaluation methods assess problem-solving skills. This is particularly the case of OSCE stations, and teachers are also encouraged to develop MCQs or CBAs that present real-life situations rather than test only knowledge. UDREM has organized several workshops to train teachers to write questions measuring higher levels of learning (application, synthesis of knowledge, etc.).

As mentioned before (cf. chapter 4.1) each medical domain is tested by multiple exam formats, including written, computer-based, oral and practical ones, in line with the multiple aspects of clinical practice.

Integrated and Interdisciplinary learning

The examinations during the curriculum of BA years assess all learning objectives of a given Module (a semester). Most MCQ questions are domain-specific, as they are developed by those responsible for a specific learning Unit, and do not particularly evaluate students’ integrated knowledge. During the MA years, exams also take place on a semester basis, but are specific to the AMC rotations. They present, to various degrees, integration of interdisciplinary learning objectives. For example, learning objectives and relevant questions following the “Internal Medicine” rotation include items from general internal medicine, but also from clinical pathology, radiology, pharmacology, specialty medicine, global health issues, etc.

Strengths

- Learning objectives for all Swiss Faculties of medicine are agreed upon at the national level via the SCLO, and it is this list of objectives that drives the content and organization of the curriculum, as well as the content of the examinations.
- Throughout the years, continuing formative evaluations were introduced, mostly during clinical rotations, based on the direct observations of student performance and professional behavior in these settings.
- Summative evaluations are now in better coherence with the learning objectives (refer to accreditation of 2006), as the LPméd has given the Faculty a large degree of independence in designing its curriculum and evaluations.
- The different formats of evaluation are adapted to the objective of evaluating different aspects and facets of the clinical activity.

Weakness-es
- In the BA years, the exam format is still mainly MCQs and this tends to favor knowledge acquisition by students over knowledge application. The number of higher level integrative questions is limited (in spite of training workshops on this topic), because these questions are time-consuming to prepare and tutors write questions in the rather stressed teaching period! A whole review of the evaluation system is in discussion in the BA Curriculum Committee, and other formats are considered.

How to improve
- The BA Curriculum Committee considers alternative formats of evaluation to replace MCQs, at least in part, to foster integrative learning strategies.
- The MA examinations being now entirely under the responsibility of the Faculty, this motivates Faculty members to develop testing formats adequate with the learning objectives and the final desired model of a medical practitioner.

Perspectives / Comment-s
- Ongoing research includes the detailed comparison between CBA and structured oral examinations, and the outcome of formative feedback.
- The adequacy between evaluation formats and specific skills to be evaluated is constantly borne in mind.
5 AREA: ACADEMIC STAFF / FACULTY

5.1 RECRUITMENT POLICY

Standards:
1. The Faculty of medicine has a staff recruitment policy, which defines the academic staff required for the adequate implementation of the program. It describes the type and composition of the academic personnel, the balance between medical and non-medical staff, as well as between full and part-time employees. Responsibilities are clearly defined and periodically examined.

2. The Faculty of medicine has formulated staff selection criteria, which take into account performance in science, teaching and clinical activities, as well as the demands of the mission statement of the institution, economic considerations, and further issues.

3. The recruitment policy for academic, administrative, and technical personnel is published.

Annotations
- Academic staff includes employees with responsibilities in basic and clinical sciences at the university and at health care facilities, as well as lecturers with dual appointments.
- Performance can be measured by formal qualifications, professional experience, research output, teaching experience, student counseling, peer recognition, etc.
- Further issues may include gender equality, ethnicity, religious affiliation, language, and other aspects relevant to the faculty.

Professorial level

This section addresses specifically the external recruitment policy at the full-professor, associate or assistant professor levels. Career development within the Faculty is described in the next section.

The academic staff recruitment policy of the Faculty of medicine at the professorial level has to satisfy different requirements of the three Sections: Basic medical sciences, Clinical medicine, Dental medicine.

In the Basic medical sciences Section, a permanent academic Planning Committee, chaired by the Dean19 (and which includes the Vice-Deans), examines all positions that will be vacant over a four-year period. It considers whether the positions should be renewed, in the same or in a different field, with the same terms and conditions, or not. In particular, the Education Committee evaluates whether a specific teaching expertise, in a specific domain would be left uncovered by the retirement of a professor. The Committee consults the Section of Basic medical sciences, the Education Committee, the Research Committee, and the chairperson of the Department concerned by the future vacancy. If the Committee proposes to renew the position (submitted to the approval of the Collège des professeurs), an ad hoc nomination Committee is created by the Dean, validated by the Collège des professeurs and approved by the Rector. The position is then advertised in international field-related journals (and in local newspapers) indicating the level of recruitment, general conditions and duties regarding teaching, research and services. The candidatures received within the deadline are transmitted to the nomination Committee. The latter, together with scientific experts from Switzerland and abroad, writes a detailed report on all candidatures and chooses one or two candidate(s). If two candidates are considered appropriate, the Committee ranks them. The report is submitted to the Collège des professeurs for a vote. Although the Rector usually confirms the final nomination of the candidate ranked first, he has the power to reverse the preference order. The affiliation of the future professor to a given Department is generally decided at the recruitment stage, although many scientists are often at the interface between two or more scientific domains and may choose to associate with colleagues they see the most appropriate to achieve a high degree of scientific interactions. In addition to this regular nomination procedure, each Department actively seeks potential candidates for a FNRS professeur boursier grant. Candidates must be endorsed by the Basic medical sciences Section and by the Dean. These professors are non-tenure track assistant professors. Permanent positions should be available for them to apply within a six-year period if a successful integration has been achieved.

19 The Faculty of Science designates a delegate in the nomination Committee for professors in the Basic medical science Section.
In the Clinical Medicine Section, the recruitment policy has an additional step due to the fact that professors have not only academic duties, but are also in charge of the health care in a specialty medical domain. The University Hospital shares therefore the decisional power in the nomination procedures of clinical professors. The respective roles of the Faculty and the University Hospital are defined in a Règlement hospitalo-universitaire (Appendix 20). In addition to Faculty members and external experts in the field of nomination, members of the Direction and of the Administrative Council of the HUG are present in the search and nomination Committees.

In keeping with the law of the University of Geneva, each professor is evaluated, at each renewal term, with respect to achievements in teaching, research and services, by specially appointed Committees.

In all search and nomination Committees, a delegate of the Rector ensures that gender equality is guaranteed when assessing and selecting candidates.

Strengths

The procedure is transparent; all stakeholders have their say, in particular the Education Committee. The major criteria for hiring external professors are scientific and/or clinical excellence attested by a relevant publication list and qualified professional activities. The evaluation of teaching ability is restricted to the outcome of the public conference delivered by each short-listed candidate. Externally-recruited professors represent 40% of the current collective, testifying to our strong commitment to maintain an international-renowned Faculty.

An active career development for local candidates is implemented as 60% of the professors have been recruited at a junior level and promoted. Of these, 2/3 did their MD or PhD in Geneva and most of them spent a few years abroad as post-docs. The rest came to our institution as post-docs. A few positions were (and still are) attributed to persons with a predominant involvement in teaching.

Weaknesses

In the basic medical sciences, the outstanding candidates in terms of research are often PhDs. However, the expertise of PhDs in the physiology or morphology of organ systems may be very limited20, a fact that could hamper the adequacy of PhDs to teach to medical students. This said, it must be acknowledged that most PhDs make the necessary efforts to become able tutors in BA Units, often after having been active in pairs with MDs in PBL.

Concerning recruitment in general, the availability of suitable candidates may be very variable. Classical organ or system physiology, as well as gross anatomy represent a low21, whereas in the clinical disciplines, the trend to specialization limits the number of candidates with a general practice view. It is for this reason that the creation of a structure for the teaching of primary care medicine has been an important issue (cf. chapter 2.6 and 2.8).

We have to mention here the remark made by members of the ACIMF (Association du Corps Intermédiaire de la Médecine Fondamentale) pointing out that some of the most brilliant professors were not enthusiastic when it came to participating in the undergraduate medical curriculum. The ACIMF suggested that the Faculty should also consider recruiting candidates interested mainly in teaching. In line with this, the Faculty did nominate a very few academics to professorship in recognition of exceptional achievements in teaching.

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20 For example, we had once a candidate with a superb research record in neuroscience, but who was not at ease when he was presented to our Neuroscience Unit. This candidate for a Neuroscience position had no training in CNS anatomy, physiology or pathology.

21 One way to compensate for the relative lack of professional physiologists or anatomists is to rely, as our curriculum does, on clinicians experts in organ or body systems, such as cardiologists, intensive care specialists, pneumologists or nephrologists. They are most knowledgeable in the morphology, physiology and pathophysiology of their respective domains of expertise and several such clinicians are teaching in BA Units or are even coordinators of some Units.
developments and responsibilities. However, as a subdivision of the University, the Faculty of medicine has the duty of promoting the development of knowledge, not its mere diffusion, and will always put a strong emphasis on research competence in the academic career. Thus, the Faculty does not favor the possible emergence of a “teaching track” in opposition - or parallel - to the “research track” for professorship.

5.2 STAFF POLICY AND DEVELOPMENT

**Standards:**
1. With its staff policy, the Faculty of medicine strives for a balance in teaching, research, and service functions, and ensures recognition of meritorious academic activities with appropriate emphasis on both, research attainment and teaching qualifications.
2. The staff policy includes training, development, and assessment of the teaching staff. It considers teacher-student ratios appropriate to the various components of the study program, and assures that teaching staff is represented on relevant committees and bodies.
3. The staff has access to a gender equality commission.
4. The faculty of medicine supports a long-term promotion of young academic staff.
5. The staff has access to continuing education, career development opportunities, and appropriate counseling.

**Annotations:**
- The staff includes academic as well as administrative and technical personnel.
- Service functions include clinical duties in health care, administration, leadership functions, etc.
- Recognition of meritorious academic service includes rewards, promotion and/or remuneration.

As already mentioned, all academic staff is hired with explicit duties in teaching, research, and services. The Faculty of medicine has two Committees in charge of ensuring the recognition of academic activities, with appropriate emphasis on research attainment, teaching qualifications and clinical services.

These are the Renewal Committee (*Commission de la Relève*) and the Committee for coordination of academic careers (*Coordination des carrières académiques*).

Note that the chairperson of the Committee for the academic promotion of women is member of the Committee for coordination of academic careers.

**The role of the Renewal Committee** is to identify individuals with academic potential, with particular attention given to those active in the domains defined as priorities for the Faculty, or to important clinical disciplines in which renewal potential seems insufficient. The Committee establishes a repertoire of young, non-tenured, Faculty members, and follows their progression, making sure that they benefit from working conditions that will allow them to develop as independent researchers and that they are given the opportunity to contribute to teaching. One responsibility of the Committee is to advise the Departments and the Dean’s office on the use of non-tenured Faculty positions that should be earmarked for promising young individuals. The non-tenured positions are *chef de clinique scientifique* and *maître-assistant*, with a mandatory participation to teaching activity.

Note that the Renewal Committee (in coordination with the Committee for the promotion of women) sent a letter to all women assistants (Faculty) or *cheffes de clinique* (Hospital) asking them to express a potential interest for an academic career. The resulting database will enable a careful follow-up and encouragement of talented persons.

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22 Chaired by a Vice-Dean; thirteen professors, including delegates of the Committee for the academic promotion of women, and of the Education and Research Committees.

23 Identification takes place via auditions of heads of departments (every 4 years), call for interest for young scientist positions, on request of the Dean, on request of the individuals themselves.

24 20% clinical activities and 80% research and teaching. This position is for clinical departments exclusively and for a maximum duration of 3 years; the participation in teaching activities is mandatory.

25 For all departments, the position of *maître-assistant* can be held for a maximum of 6 years, and the Committee pays particular attention to the second 3-year mandate. The first 3 years are usually requested by the head of a department, typically for a young scientist returning from a postdoc abroad; the participation in teaching activities is mandatory.

26 The Vice-Dean for education sends systematically a letter to the person nominated. It refers to the importance of participating in teaching activities, and orients the recipient to the chairpersons of the two Curriculum Committees.
The Committee for coordination of academic careers examines all requests for internal promotions. The review procedure can be activated by the Departments or the Sections, or by individuals. Proposals are analyzed by the Research Committee and the Education Committee. Again, involvement in teaching is strongly considered for a potential favorable decision.

The staff policy includes teachers’ training, development and evaluation. In 2008-2009, our 1'400 teachers had over 28'000 hours of direct contact with the 956 students throughout the BA and MA curriculums. All teachers involved in PBL or related small-group learning, both at the BA or MA levels, participated on a mandatory basis to introductory workshops organized by the UDREM, so that a common and adequate attitude is followed during the tutorials. The quality of teaching by individual Faculty members is assessed through a systematic evaluation of their performance by students. The BA and MA Committees review all results of these evaluations (cf. chapter 3.4 for the handling of cases of repeated insufficient performance by teachers).

Teachers are encouraged to improve the quality of their performance. Several teaching Units provide internal continuous training of their tutors. In addition, the tutors’ training program provided by the Faculty offer workshops combining self-reflection and peer feedback. A pilot study with 22 tutors indicated that all considered the process very useful and improving their teaching skills. This approach is now proposed to all tutors of PBL Units.

All members of the academic staff have access to the Committee for coordination of academic careers and the Committee for academic promotion.

The University of Geneva, and hence the Faculty of medicine, encourages continuing formation for its academic, administrative and technical staff. Funds are available to support the costs and free time is usually allowed. Continuing formation may be requested by the hierarchy since necessary to the institution (e.g. formation in animal care and animal experimentation is mandatory); it may be requested by staff members and beneficial for their daily work; in some cases, staff members may wish to pursue a personal project for self-development.

Strengths

- The Faculty has made considerable progress in better evaluating teaching and research activities and in using the results of these evaluations for promotion.
- There is a systematic effort to encourage young Faculty members to write and present a postgraduate “Privat-docent” thesis. This applies equally to clinicians and basic medical scientists. A Privat-docent title is usually required for promotion to professorship. Promising young clinicians receive a non-tenured chef de clinique scientifique position to develop their own research project and participate in teaching, while their clinical duties are kept low (one day per week).
- Regarding continuing education, the Faculty has supported financially several of its members for the acquisition of a Master title in medical education abroad. Professors are entitled to take paid sabbatical leaves (every seventh year of activity, ½ year full pay, 1 year ½ pay).
- When recruiting non professorial external academic staff in basic medical sciences, there is a marked preference for excellence in research. During the subsequent promotion process, however, the Faculty takes into account a good teaching record.

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27 Dean, all Vice-Deans and Associated-Deans, Chairperson of Clinical Section, Chairperson of Basic Science Section, Chairperson of Dental medicine, Medical Director of the Geneva University Hospitals, Chairperson of the Committee for the academic promotion of women.

28 This occurs only as an appeal against a negative decision by a department or a section.
Weakness-es

- The careful evaluation tasks assumed by the respective Committees, in particular the Research and Education Committees imply considerable administrative resources devoted to collecting the useful information. This work is done by a small dedicated staff which may lack the necessary time for constant communication to foster transparency in the decisions taken. For increasing information and communication about evaluation procedures, the administrative staff would need to be buttressed. Within the limits of a non-expandable budget, increasing the support for administration (with respect to that for research or for teaching) is a difficult decision to take.

Remarks by the ACIMF

- Some assistants never saw their term and conditions contract.
- The teaching loads can vary considerably from one member of the intermediate academic body to another.
- The Renewal Committee and the Committee for coordination of academic careers include exclusively professors. ACIMF complains about the lack of information and transparency in the functioning of these Committees and the lack of feedback given to those directly concerned.
- The information relative to continuing training is not sufficiently clear and accessible. The fact that fees have to be paid for some courses is strongly dissuasive.
- Teacher training: the follow-up of teachers' performance after the basic training is very Unit-dependent.
- Evaluation of teachers: the evaluation is insufficient and one-sided since it is done exclusively by students.

How to improve

- Continue to promote teaching and encourage individuals with a strong teaching background to do research, including research about pedagogical issues or other developments concerning education.
- Develop communication (note that some of the ACIMF proposals have already been addressed).

Specific proposals by the ACIMF

- Create a pool of teachers (Assistants and Maître-assistants), independent of their respective Departments, to better distribute the teaching load and increase the adequate training for teaching in specialized domains (histology, some PBL Units, etc.).
- Include members of the ACIMF in the Renewal Committee and the Committee for Coordination of Academic Careers.
- Make it clearer that teaching is essential for an academic career. As teaching includes undergraduate and postgraduate levels, the fraction devoted to each level varies from individual to individual, and at different periods of an academic career. This point should be carefully taken into account in evaluation procedures.
- Concerning teacher development in PBL Units, each Unit should form its tutors on the specific learning objectives to be attained. The UDREM should develop a follow-up program for the tutors' training.
- Implement a professional and multimodal evaluation of teachers based on criteria such as: participation in the organization of a learning Unit; creation of new problems or other pedagogical developments; creation of MCQs; efficiency as teacher. The coordinator of the Unit should record all these elements, which might be taken into account in the evaluation of the teacher by the Faculty.

The term and conditions of each contract must clearly indicate the teaching responsibilities, particularly for senior post-docs (maître-assistants).
6 AREA: EDUCATIONAL RESOURCES

6.1 INFRASTRUCTURE

**Standards:**
1. The Faculty of medicine provides an appropriate infrastructure to ensure that the study program can be adequately implemented.
2. The learning environment for the students is regularly adapted to developments in medical education.

**Annotation:**
- Infrastructure refers to lecture halls, tutorial rooms, laboratories, libraries, and information technology facilities, etc.

The University Center for medical sciences (Centre Médical Universitaire, CMU) was built in the late seventies. It is located immediately next to the University Hospital (1’800 beds). Teaching surfaces occupy a total of approximately 6’000 m². They include fully equipped dry and wet laboratories (anatomy, biochemistry, hematology, histology, microbiology, pathology, and physiology); 27 small-group, problem-based teaching classrooms (each accommodating 12 persons); a Clinical skills lab with 8 patient rooms for the teaching and practice of clinical skills (each accommodating 10 persons); 6 large classrooms (30-60 seats); 7 auditoriums (3 of 110, 1 of 150, 1 of 250 and 2 of 400 seats).

**LIBRARY**

**Spaces and Staff**

The Library of the Faculty of Medicine (BFM) is situated on three connected floors of the CMU, with a surface of 3’000 m² available. Due to an increased number of students and high attendance, especially during exam periods, the number of workplaces was raised in 2011 from 470 to 555. The PBL students use the library more frequently and for longer periods of time.

The library is open 83 hours during the week (from 8.00 AM to 10.00 PM weekdays, 10.00 AM to 6.00 PM Saturdays and official holidays, and 2.00 PM to 6.00 PM Sundays). In 2012, it is planned to extend opening hours until 11.00 PM throughout the week.

The library’s staff consists of 8.85 full-time equivalents - 8 professional medical librarians assisted by approximately 8 part-time helpers. Most are fully bilingual in French-English.

**Services**

The students have access to complete medical library services, such as copying, printing, and borrowing documents from BFM and from other libraries in Switzerland (Interlibrary Loan).

The reference center assists students in the use of all services, especially information retrieval and database searching.

The professional staff is involved in the students’ information literacy by organizing training sessions in the 1st and 3rd BA years and 1st and 2nd MA year, by developing e-learning modules, guiding library tours and animating workgroups (cf. chapter 6.3).

**Collections**

With the collaboration of the Curriculum Committees, the library has set up a specific PBL collection for the students, which includes approximately 3’000 textbooks and handbooks in order to meet the needs of the curriculum objectives. Several e-books are available online.

The BFM subscribes to over 400 printed scientific journals, freely accessible on the shelves and to over 3’000 electronic journals. It meets all the requirements of a modern medical library. Highly specialized journals can be found in satellite libraries in the University Hospitals.

The BFM collection is catalogued on a server network with links to all other libraries of the Swiss French speaking part of Switzerland. Books can be taken out on loan.
Databases
Bibliographic search on databases, like Medline, Web of Knowledge, UpToDate, CINAHL, Cochrane library, etc. are available with on-line access.

Library facilities
- 120 computers are located within the BFM (cf. chapter 6.3).
- There are 2 slide projector stations.
- A discussion room with light microscopes, including 4 multi-head microscopes, each allowing up to 10 students to review together their histopathological slides.
- Study and small-group conference spaces are available for the students.
- Two classrooms with computers.

OTHER RESOURCES
Laboratories for practical training in anatomy, histology, pathology, physiology, are fully equipped, with ample space and high quality material for all students.

In 2010, thanks to joint financing from the Faculty and the University, the microscopy classroom (128 seats, 96 standard light microscopes, 20 oil-immersion microscopes) was equipped with 64 computers, all connected to internet. Campus-based CAB exams can be organized in this setting.

Mannequins are available to practice specific clinical skills (e.g. resuscitation).

Clinical departments (e.g. Emergency medicine, Pediatrics, Neurology) have also developed computer-based teaching stations.

Infrastructure, space allotments and equipment acquisition are reviewed regularly by specific Committees as new needs arise and technologies evolve. Decisions are based on the objectives and priorities of the Faculty.

Strengths
The library and its excellent staff constitute a major strength.

Joint support from the Faculty and the Division of Informatics of the University, as well as thoughtful space planning enabled the microscopy room to be converted into a large, multi-purpose classroom to intensify the integration of computer-based activities of the Faculty.

As an example, we now combine conventional microscopy and the virtual microscope that the Faculty has developed since 2004 (cf. chapter 6.3).

Acquisition in 2008 of new software permitted further development of a variety of digital slide-based activities, both in education and research (self-learning, self-assessment, distance consulting & collaborations, online seminars & workshops, e-learning, etc.).

Weaknesses
The difficulty of keeping a sufficient number of working places in the library in spite of a steady increase in student numbers. We managed to raise the library’s capacity by 18% in 2011.
6.2 PRACTICAL CLINICAL TRAINING RESOURCES

**Standard:**
The Faculty of medicine provides the necessary resources for adequate clinical education, including a sufficient number of patients and clinical training facilities.

**Annotation:**
- Clinical training facilities include hospitals (an adequate mix of primary, secondary and tertiary levels of care), ambulatory services, clinics, primary health care settings, health centers, and other public health facilities, as well as skills laboratories. Facilities for clinical education should be evaluated regularly for their suitability and quality regarding medical education.

**CLINICAL SKILLS LAB (CSL)**

A Clinical Skills Laboratory (Espace des Compétences cliniques) is available for learning and practicing clinical skills at the main University Hospital of Geneva (1'800 beds). Eight examination rooms are equipped for clinical evaluation. Each room can accommodate 10 persons. Various mannequins are also available for practicing basic life support and various technical skills such as wound dressing, injections, iv-line, bladder catheterization, etc. Each room is equipped with a one-way mirror, medical furniture, a PC connected to the Medical School Intranet allowing to access multimedia resources, and with audiovisual equipment allowing observation and recording. The CSL is extensively used for the seminars, the formative stations and the OSCEs (Objective Structured Clinical Examination) of the clinical skills program, for the seminars and OSCEs of the Master program, as well as for various postgraduate activities organized by the main University Hospital such as ATLS (Advanced Trauma Life Support) and ACLS (Advanced Cardiac Life Support) training and certification, and postgraduate training in communication skills.

In the context of the clinical resources, we must emphasize the very important role of the simulated patient program (see also chapter 2). This program includes a pool of 100 simulated/standardized patients contributing to numerous types of simulations of real situations for training and for formative and summative examinations.

6.3 INFORMATION TECHNOLOGY

**Standard:**
The Faculty of medicine has a policy for the efficient use of information and communication technologies in its study program. Teachers and students are enabled to use information and communication technology for self learning, accessing information, managing patients and working in health care systems.

**Annotation:**
- The use of information and communication technologies may be part of education in evidence-based medicine, and shall prepare students for lifelong learning, professional development, as well as applications in "e-health".

**Goals**

At the end of the 90’s, the Faculty of medicine created the Information and Communication Technologies (ICT) team to support the undergraduate curriculum and teaching, and to facilitate students’ access to computer-based/Internet learning resources. This early adoption of ICT is in phase with the recent e-learning policy defined by the University of Geneva.

Through the integration of ICT in the curriculum, the Faculty is aiming at improving computer-literacy of the students who, at the time of graduation, should be able to use ICT to find and organize biomedical information, to communicate with their peers, to integrate ICT in their professional practice and to be lifelong learners.

**Technological infrastructure**

The University and the Faculty computer services are working together to build and maintain a high performance computer infrastructure for the students. All students that enroll at the University of Geneva automatically receive a personal e-mail address and a login to access the computer network and facilities.

29 The document « Définition d’une politique E-learning à l’Université de Genève » is available at [http://elearning.unige.ch/politique.html](http://elearning.unige.ch/politique.html).
Institutional infrastructure
At the Faculty of medicine\textsuperscript{30}, 150 Windows-based computers are installed in computer rooms at the main library, at the Section of Dental medicine and in the clinical skills lab located at the University Hospital (\textit{Espace des Compétences Cliniques}). 90 computers are in free access (1 for 11 students) + 64 in a large room dedicated to microscopy and computer-based exams. This number of computers covers the current needs of the students. At every session start-up, the computers are loaded with a new disk image ensuring a perfectly working machine for the next user. The available programs are the Microsoft Office suite, web browsers, a client e-mail and faculty specific applications. Every student has 100 MB disk space accessible from anywhere. Ten laptops can also be borrowed free for a period of 15 days.

Thanks to the new follow me concept, the students can print from any computer on any multi-function printer of the Faculty/University\textsuperscript{31}.

The students coming with their own laptop can access the network through a WiFi (802.11 g) connection. The WiFi covers all the buildings of the CMU, library, lecture halls and other public areas.

The Faculty and University run several servers specifically dedicated to teaching. Furthermore, the students have their own server, hosted by the faculty, managed by the computer assistant team and which is mainly used to share study documents.

Institutional manpower
The technological infrastructure is maintained and updated by the University and Faculty computer services, a team of computer assistants (\textit{Auxiliaires de Recherche et Enseignement}: computer-savvy 2\textsuperscript{nd} BA to 1\textsuperscript{st} MA year medical students) and instructional technologists. In the Faculty of Medicine:

- A team of 12 computer assistants (11 for human medicine, 1 for dental medicine) help their peers to use computers by answering their questions and organizing/offering basic computer courses. One computer assistant is present 7/7 at the library (from 10:00 to 18:00 during the week, and from 14:00 to 18:00 during the weekend). The team is coached by a computerized teaching expert and a technical engineer (one tenth of their working time).
- A full-time instructional technologist, a half-time webmaster and a web developer (for a fraction of his time) are in charge of integrating ICT in the undergraduate curriculum by developing web sites, web-based applications and by advising and assisting Faculty members in completing their PBL teaching Units and clerkship websites.

Student personal computer equipment
The 2010 annual survey conducted by computer assistants and a 2009 survey conducted by the Swissmedel\textsuperscript{32} group at the five Swiss medical Faculties show that all the students use a computer and 84\% use a laptop. Two thirds of them use a computer at least one hour a day. This is a significant increase compared to the 2006 accreditation report.

The Faculty does not require that the students own a computer but encourage the to acquire one. The Swiss Universities have an agreement (the Poseidon project) with two important computer manufacturers to offer laptops at lower prices than the normal market.

Computer courses
It is expected that students entering the University have basic computer knowledge and therefore neither the University nor the Faculty of medicine are offering basic computer courses. However, upon request, the computer student assistant team organizes such

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{30} http://www.unige.ch/medecine/enseignement/demarchesPratiques/materielDEtudes/E-learningEtInfrastructureInformatique/infrastructureInformatique.html
  \item \textsuperscript{31} https://catalogue-si.unige.ch/catalogue/fiches-deSpecifications-de-services/c27
  \item \textsuperscript{32} http://www.swissmedel.ch/survey2/survey.html
\end{itemize}
\end{footnotesize}
courses. It also publishes a guide to help students to use the resources they are intended to use (access to printers, access to online courses material, etc.).

During the 2nd BA year, two mandatory courses are given: 2 hours on *Bibliographical research* given by the library, and 2 hours on *Information retrieval on the Web* given by the Service of Medical Informatics (SIM - HUG). During the 1st MA year, students also follow a two hours introductory course on the *Dossier Patient Informatisé - DPI* (online patient file) of the Hospital. This course is mandatory for students to receive a right access to the DPI.

The courses about information research and retrieval are being modified in order to strengthen student abilities. Starting in 2011-2012, the main parts of this curriculum will be:

- bachelor 1st year: use of library facilities;
- bachelor 3rd year: basis of information research and retrieval;
- master years: information management (mainly for the master thesis: management of bibliographical references, anti-plagiarism, scientific writing).

Those courses will be delivered as blended learning, a mix between on site and distance learning.

**E-learning**

Most of the material for the courses at the Faculty of medicine is available on Dokeos[^33], the University Learning Management System (LMS). Students have access to learning resources (scientific articles, course documents such as PowerPoint presentations or electronic textbooks), communication tools (discussion forums moderated by teachers, mailing lists), review of learning material (quizzes) and personalized timetables. Since the last accreditation process, the full adoption of the LMS by the Faculty allowed the ICT team to go from a situation where the content of the teaching Units web sites was centrally updated by the instructional technologist, to a distributed process where this updating work is done by the teaching Unit coordinator and/or the corresponding secretarial staff. This is an improvement since it is freeing time of the ICT team for higher level tasks and it is fostering the use of the technology by the teachers. The next step is to go beyond the document repository usage of Dokeos by promoting the development of learning scenarios (e.g. clinical cases) supported by the already built-in tools of the LMS.

In response to the insufficient seating capacity of the main auditorium, the Faculty records all the first BA year courses and broadcasts them in a second lecture hall. The videos can be seen again on (or downloaded from) the University’s multimedia server[^34].

The Faculty continues to develop successful[^35] e-learning projects such as the virtual microscopy[^36], the clinical skills for pediatrics, the drill simulator in dental medicine or simulation in virology[^37]. The library also offers online services with web-based search engines for e-books and electronic journals.

**Information and Communication**

- Email is an official information channel between the Faculty and students for administrative and organizational information. It is managed with mailing lists corresponding to each study year.
- All information related to the organization of undergraduate medical studies is available online.

[^33]: http://dokeos.unige.ch
[^34]: https://mediaserver.unige.ch/
[^35]: From the past e-learning projects, we learned that the paramount success factor is the integration of the e-learning resource in the teaching.
[^36]: http://vslwww.unige.ch/
[^37]: http://www.virolab.ch
- A journal about medical education (Information/Med)\textsuperscript{38} is published 2 to 3 times a year both as an electronic and paper-based publication. It addresses learners but also the academic community at large. Each edition focuses on one aspect or issue related to medical education (e.g. medical humanities, postgraduate teaching, family medicine, etc.).

**Tools for the curriculum management**

There is an increasing need for tools to facilitate the administrative tasks. The ICT team has developed web-based applications which, for example, allow the registration and follow up of students for the optional courses\textsuperscript{39}, or for the Master thesis\textsuperscript{40}.

A weakness spotted by the previous accreditation process was the lack of a “widely accessible curriculum database”. As a response, the “Cursusmap\textsuperscript{41}” project has been initiated in collaboration with the Service of Medical Informatics (SIM -HUG). It has led to a web-based tool that allows browsing and finding details about the curriculum according to different views: chronological, disciplines-based or based on the Swiss Catalogue of Learning Objectives\textsuperscript{42}. It is updated regularly. The site is used for curriculum design by some of the curriculum planners. From 2011 on, the ICT team has started to work on a new project with more complete software.

**Evaluation**

Both hardware infrastructure and pedagogical websites are evaluated on an annual basis. The quality of the equipment (especially the computers and printers in the free access area of the library) and support provided by the Faculty is evaluated by a survey conducted by student computer-assistants (since 1999). The evaluation of the curriculum teaching websites and of the Dokeos platform is included in the evaluation questionnaires of each teaching Unit, and their results are available on the website\textsuperscript{43}.

**Computer based assessment**

The Faculty introduced CBA for a certain number of exams (cf. chapter 4.1).

**Strength-s**

- Our excellent and very efficient staff that continuously develops and updates our computing facilities.
- Generalized use of the LMS and CMS.
- Coaching of the students by student instructors who also make sure that computers and printers work.
- Development of various web-based software for curriculum management.

**Weakness-es**

- ICT is still supportive rather than being integrated in the students’ education. Teaching staff could take better advantage of ICT to strengthen the quality of tuition.

**How to improve**

- Be more pro-active (e.g. in the academic year 2010-2011, we introduced “Le quart d’heure technologique” within each session of the Bachelor’s Committee). Develop more personal contacts with the teachers.

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\textsuperscript{38} http://www.medecine.unige.ch/enseignement/information/med/
\textsuperscript{39} http://www.unige.ch/medecine/static/inscription/options23/
\textsuperscript{40} http://www.medecine.unige.ch/enseignement/pratique/inscriptions_master/master/
\textsuperscript{41} http://www.medecine.unige.ch/cursusmap/
\textsuperscript{42} http://iso.smifk.ch/silo2008
\textsuperscript{43} http://www.unige.ch/medecine/enseignement/formationsDeBase/medecineHumaine/evaluationDeLEnseignement/evaluationParEtudiants/analysesEvaluations.html
6.4 RESEARCH

Standards:
1. The Faculty of medicine has a policy describing the research facilities and areas of research priorities at the institution, as well as the relationship between research and teaching.
2. The interrelationship between research and teaching is reflected in the study program and in the current course offerings. The students are encouraged and prepared to participate in medical research and development.

Research is a major academic priority of the Faculty of medicine along with teaching. Research is performed in all 3 Sections: Basic medical sciences, Clinical medicine, and Dental medicine. The surface of the Research facilities represents 63'000m² in the Centre Médical Universitaire building (including an animal core facility), 4'000m² in the University Hospital buildings (an equivalent surface will be dedicated to translational research in a building under construction due to be completed in 2014). In addition to those present in the CMU, additional surfaces are available in the building of the Fondation pour la recherche médicale (1’100m²) and in an animal core facility (800m²) situated out of town.

The Faculty of Medicine has currently 248 research groups:

- 62 in the Section of Basic medical sciences
- 175 in the Section of Clinical medicine;
- 11 in the Section of Dental medicine.

Over the last 5 years, all these groups published about 5340 papers in scientific journals with editorial policy. These publications have been cited more than 26'400 times.

Research is financed by the Faculty (local) and external funds. For each CHF received from the Faculty, research groups generate at least the equivalent. External sources come from the FNRS, the European Community and international funds.

Each research group in the Section of Basic medical sciences operates within one of the Departments constituting the Section: Structural biology and bioinformatics; Genetic medicine and development; Microbiology and molecular medicine; Basic neurosciences; Pathology and immunology; Cellular physiology and metabolism.

Each research group in the Section of Clinical medicine operates within one of the Departments constituting the Section: Anesthesiology, Pharmacology and Intensive care; Surgery; Geriatrics; Gynecology and Obstetrics; Health and Community medicine; Internal medicine; Clinical neurosciences; Pediatrics; Psychiatry; Informatics and Imagery.

The research groups of the Section of dental medicine operate within the following Departments: Cariology and Endodontology, Gerodontology and Prosthetics, Orthodontics, Stomatology and Buccal surgery, Occlusodontology and Prosthetics, Parodontology and physiopathology.

Core facilities

Core facilities are available to all research groups in order to optimizing performance trough technical excellence and equipment quality in a cost-containing perspective. Each core facility is operated, maintained and updated by a professional dedicated staff under academic supervision. The main core facilities are: Animal care, Genomics, Cytofluorography, Proteomics, Histology, Electron microscopy, Bioimaging, Transgenesis, NMR, Clinical research center, Medical illustration, Chemical and lab supply store.

In addition to research groups active in their respective Departments, a multidisciplinary Brain and Behavior Laboratory (BBL) opened in the CMU building in 2009. Funded by a large grant from the Société Académique de Genève, the BBL is run in collaboration with the Faculty of psychology and educational sciences of the University and devoted to the study of the cerebral bases of human mental functions, emotions in particular, in health and disease. The BBL brings together a wide range of cutting-edge techniques, from neuroimagery to psychophysiology, to measure brain activity in a variety of experimentally-controlled conditions.
Development of clinical research

The Faculty of medicine and the University Hospitals created in 2007 the Centre de Recherche clinique (Center of clinical research, CRC). The CRC aims to serve the medical community and the public by promoting state-of-the-art clinical research.

The mandate of the CRC specifies 5 main missions:

- Provide methodological and clinical supports to all groups which are active in clinical research (advice on planning studies and statistically analyze results; advice with respect to compliance with legal requirements; additional workforce, etc.)
- Create a program to enable researchers to develop research projects while pursuing their careers in clinical medicine; management of clinical trials.
- Improve education in clinical research.
- Develop contacts between clinical and basic researchers, improve collaboration between researchers and encourage multi-disciplinary projects.
- Improve the visibility and public acceptance of clinical research within the Faculty and University Hospitals.

To accomplish these missions, the CRC has an independent budget which is also able to support small projects for researchers at the start of their career, or larger projects for researchers who already have a track record.

The CRC is supervised by an Executive Committee, with members appointed by the HUG and the Faculty, and is affiliated directly to the office of the Dean and the Medical direction of the HUG. This double affiliation makes it clear that the CRC belongs to the whole medical community.

Fostering interactions between Sections

Dual department affiliations are possible for clinical (and dental) research groups to obtain laboratory space at the CMU; financial incentives are attributed to the Departments of Basic medical sciences which welcome groups from clinical Departments.

Research priorities

Research priorities are discussed at several levels and established for a 4-year period. Proposals are made by the Dean’s Office. Priorities are discussed by the academic community (Research Committee, Collège des Professeurs and Faculty Council) and validated by the External Scientific Advisory Board after formal presentation and review.

The 2009-2012 priorities are:

- Humanitarian Medicine
- Genetics
- Imaging and Communication
- Neurosciences
- Transplantation and Stem Cells
- Metabolism and Cardiovascular Medicine
- Host - Pathogens Relationship

Fostering interest for research among pregraduate students

The importance of research on teaching activities has been discussed in chapter 2.2 and 2.3. Here we refer to the attempt made by the Faculty to encourage medical students to engage in research. This is a major priority since the number of MDs active in research is presently decreasing, in part because of substantial differences in salaries between a research (University) and clinical (Hospital) activity.

In addition to having contact with research during the standard curriculum (cf. chapter 2.3, the students and graduates are offered different programs that allow them to engage more specifically to research activities, or to enter a research program.
**PREM**\(^{44}\) is a program which allows medical students to perform structured research activities in Geneva or in another University during holiday periods, with a financial support.

**PhD program**: This structured program leading to a PhD delivered by the Faculty of sciences, usually in Biology, through a 4-year research project, requires medical students to take additional courses in molecular biology and in genetics. The program can be started during the 3\(^{rd}\) MA year of the medical curriculum.

**MD-PhD program**: This structured 3-year program in basic medical or clinical research leads to a doctorate in medical science delivered by the Faculty of medicine (different from the PhD described above and delivered by the Faculty of sciences). The MD-PhD program can also be started during the 3\(^{rd}\) MA year of the medical curriculum. It has the advantage of being shorter than the PhD program, and allows candidates to continue working in clinical settings.

In the context of the PhD and MD-PhD programs, the *Programme de Biologie moléculaire et cellulaire*\(^{45}\) is intended to provide doctoral medical students, as well as doctoral students of the Faculty of sciences preparing a thesis in the Faculty of medicine, a general scientific background complementing the specialized training they receive during their thesis work.

In connection with the *Programme de Biologie moléculaire et cellulaire*, a doctoral program in infectious diseases and immunity, supported by the FNRS, has been initiated in collaboration with the University of Lausanne.

In collaboration with UNIL, EPFL, the CHUV and the HUG, a Lemanic Neuroscience Doctoral program exists since many years. It involves several members of our Faculty for teaching activities and for providing doctoral positions in their laboratories\(^{46}\).

Members of our Faculty also actively participate to doctoral schools of the CUSO (*Conférence Universitaire de la Suisse Occidentale*)\(^{47}\).

**Evaluation of research**

The research performance of each group is evaluated yearly by calculating its total Impact Factor (RPU for clinical research). This evaluation, which is part of a general Faculty’s assessment program (*MIMOSA*) measuring the overall activity in teaching, research and services, can lead to the attribution of complementary funds proportional to the scientific output. The evaluation can also lead to redistribution of institutional positions to each group on a dynamic basis.

**Strengths**

- Research management.
- Doctoral programs conducted by dedicated scientists.
- Core facilities.
- Effort in evaluating research performances.
- Effort to redistribute human and financial resources based on scientific performance.

**Weaknesses**

- Limitation of resources (space, positions) to attract new and highly competitive individuals.
- Maybe too many research priorities.

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\(^{44}\) Programme de Recherche pour Etudiants en Médecine
http://www.unige.ch/medecine/enseignement/formationsDeBase/medecineHumaine/formationComplementaires/programme.html

\(^{45}\) http://www.unige.ch/medecine/enseignement/formationPostgrade/DoctoratSciences.html

\(^{46}\) http://www.unil.ch/in/page56756.html

\(^{47}\) http://biologie.cuso.ch/microbiologie/welcome/
What has been improved since 2006?

- The part of the assessment program MIMOSA focused on research in biomedical science is now based on the total impact factor/group/year; the research activities that usually do not lead to high impact factors, e.g. medical humanities, social medicine, medical ethics (not by a lack of quality, but by the way impact factors are calculated), are evaluated with adapted criteria.
- Recognition of postgraduate teaching activities.
- Possible redistribution of institutional positions based on scientific performance (among other criteria).

6.5 EDUCATIONAL EXPERTISE

Standard:
The Faculty of medicine includes educational expertise when planning basic medical education and developing teaching, learning and assessment methods.

Annotation:
- Educational experts who come into question are those who have experience in university education, e.g. medical doctors with experience in educational research, educational psychologists and sociologists, etc. They may be part of an internal university educational unit or recruited from another national or international institution.

When the Faculty of medicine opted for a reform of its curriculum in 1995, it created the Unit of Development and Research in Medical Education (UDREM). Such a Unit was the first to be introduced in Switzerland, and one of the few comparable structures in Europe.

Composition of UDREM 48 (Appendix 21)

Missions of UDREM

UDREM promotes innovation and quality through activities in program development including curriculum and instructional methods, in student and program assessments and evaluation, in Faculty development, and in research in medical education. Its role is to anticipate, develop, implement and analyze solutions that can be technical, pedagogical or strategic.

UDREM:
- Provides pedagogical, testing and evaluation support and expertise to the Education Committee, to the two Bachelor and Master Curriculum Committees and their respective Exam committees, to working groups of various teaching Units, and to individual Faculty members.
- Provides support and expertise to the Faculty in the use and development of Information and Communication Technologies for teaching and learning.
- Consults with the Education Committee and the Bachelor and Master curriculum committees to elaborate overall and specific strategies for introducing innovations in education, testing and evaluation.
- Assists in the planning and implementation of programs needed and approved by the Faculty.
- Provides quality control of instructional methods and materials, of the students’ examination and curriculum evaluation programs.
- Is responsible for providing the necessary training of the Faculty members in the various techniques of teaching and of students’ evaluation.
- Is responsible for developing and maintaining the standardized/simulated patients (SPs) program, and in providing Faculty members with educational and technical assistance in the use of SPs in teaching and evaluation.
- Is responsible for designing and carrying out needed research studies in medical education - this has led to many refereed publications49.
- Establishes the Faculty as a Center of competence in performance-based evaluation.

48 http://www.unige.ch/medecine/udrem/index.html
49 For publications and grants obtained by UDREM, see http://www.unige.ch/medecine/udrem/Recherche.html
- Participates in the development and administration of the new Clinical Skills exam of the Federal Examination of Human Medicine.
- Establishes the Faculty as a Center of competence in Faculty development, especially in the areas of tutors’ training, small group teaching and performance-based assessment.
- Provides pedagogical expertise and support for the organization and follow up of the clinical clerkships (outside the HUG) in primary care clinical centers within the city of Geneva, the Canton of Geneva and neighboring Cantons (to accommodate increasing students number admitted into the medical curriculum).
- Provides pedagogical expertise and consulting at national and international level.

**Strengths**

UDREM's main strengths consist in its ability:

1. to work in a collaborative and networking manner with various Faculty Committees and task forces in matters related to education, testing and evaluation;
2. to maintain a balanced offer of expertise in relation to needs, for the Dean’s office, the departments and services, and various stakeholders involved in medical education;
3. to propose the management structures and conditions necessary to introduce educational and evaluation changes, to promote continuous renewal of the curriculum and training program, as well as to design, develop and implement new training and assessment programs; to train Faculty members in order to carry out curriculum and assessment innovations;
4. to introduce, maintain and further assure an ever expanding network of educational and evaluation expertise within the Faculty, but also with other structures at the national and international level 50;
5. to provide educational expertise and consulting to other structures at the national and international level 51;
6. to develop basic and applied research in medical education which are in part related to the specific needs of the Faculty and in part related to general educational developments which aim at promoting innovation and excellence 52.

**Weaknesses**

1. The role and activities of UDREM are unclear for many Faculty members. Whereas the first mission of UDREM at its creation was clearly that of assisting the Faculty in reforming its curriculum, its second mission, which is to work with the Faculty in continuously improving its pedagogical approach, training and assessment, has never been clearly heralded. In addition, there seems to be a certain degree of confusion over the respective responsibilities and activities of UDREM versus those of the Vice-Dean for Education, the Education, BA and MA Curriculum Committees (e.g., who decides, who is responsible, and who is doing what...).
2. The recruitment of research assistants: often, the candidates do not have any specific training in medical education (this training does not exist in Switzerland), and have therefore to be trained in our Unit, slowing their readiness to be quickly efficient in a context of limited job opportunities.
3. The recruitment of medical educators for the future. At the Unit’s creation, the Faculty favored a model based on the recruitment of physicians or basic sciences researchers interested in investing part of their time in education activities. However, such persons

50 Recent collaborations have been established with the Medical education Unit in Lausanne, with Swiss federal instances (Department of Public Health), and with medical education Units in the world (Maastricht, Sherbrooke, Chicago, Brest, ...).
51 Past examples include: training of physiotherapy teachers at SUPSI Lugano, CH; Consulting with the Medical Academy of Kirghizstan in reforming its curriculum (through the Swiss Department of Cooperation and Development), Consulting with various universities in the development of new medical schools (Spain, Portugal, Morocco, ...).
52 Currently, there is no organized financial support (either private or federal) for research in medical education in Switzerland.
are rare in view of the competition existing between different paths to academic careers, and the burden of having to combine clinical/scientific and education training. As mentioned before, teaching activities tend to be less valued than research activities in terms of academic “visibility”.

How to improve

- Now that the program is fully reformed, UDREM should be released from service activities and concentrate on development and research. The Curriculum Committees assisted by the secretarial staff can manage the teaching programs, and UDREM could specifically center its activity on program development and improvement (including pedagogical innovations), program evaluation, Faculty development, consulting and research.
- A teaching Department could be constituted as a network of “affiliated members” (e.g. coordinators and secretarial staff of Curriculum Committees, Office of student’s affairs, persons in charge of standardized patients program, etc.) around an UDREM restricted staff. The development of a “clinician-teacher” track should be considered.
- Funding for applied research in medical education at the local, federal and private levels has to be developed. Recruitment of expert academic staff coming from social sciences or psychology should be considered to increase the scientific productivity and efficiency in research.

6.6 COOPERATION

| Standards: |
|-----------------|----------------------------------|
| 1. The Faculty of medicine has formulated a policy for cooperation with other educational institutions and the transfer of educational credit points. |
| 2. Regional and international exchange of academic staff and students is facilitated by the provision of appropriate resources. |
| Annotations: |
| - Other educational institutions include other medical faculties or public health institutions, other faculties and institutions for education in other health-related professions. |
| - The transfer of academic credit points can be facilitated through active coordination of study programs between faculties of medicine. |

The educational exchanges of the Faculty of medicine are constitutive of the International Relations Policy of the University of Geneva. The development of this policy has been for many years a priority of the University. Indeed, more than one hundred conventions of collaboration have been signed with Universities throughout the world. Many of these conventions are the framework of specific collaborative projects promoting student and teaching staff exchanges. There are scholarships available on demand either directly at the Bureau social de l’Université or, in case of collaboration with developing countries, at the Commission Suisse pour le partenariat scientifique avec les pays en développement.

The international collaborations that are/have been initiated by members of the Faculty of medicine are overseen by the Commission facultaire de collaboration internationale (created in 1999) currently headed by an Associate-Dean for humanitarian affairs and a scientific secretary in charge of training programs in public and community health.

The conceptual framework adopted by the Committee (and considered as a reference for any project and exchange at the Faculty of medicine) is based on the guidelines of international collaboration of the CIOMS (Council for International Organizations of Medical Sciences) and the Commission Suisse pour le partenariat scientifique avec les pays en développement.

Specific recommendations exist for students taking clerkships in foreign countries, especially in developing countries, through the Swiss Exchange Office. An inventory of collaborative projects between the Faculty of Medicine and other Faculties of medicine is available.

53 http://www.unige.ch/international/coopuniv.html
The ECTS system is applied when indicated\textsuperscript{54}.

**Regional and international exchange of academic staff and students**

Collaboration and exchanges at the Swiss level are very important for the Faculty of medicine of Geneva, as the Canton of Geneva is small with limited population for recruiting patients to train students.

This is the reason why the Faculty has instituted several important links with the health sector of the Cantons of Vaud, Valais, Neuchâtel, Tessin and Fribourg. Several Privat-docents and associate professors have been nominated by our Faculty in these Cantons to strengthen the links.

The Faculty of medicine of Geneva has also strong links with the Faculty of biology and medicine of Lausanne. The two Dean’s offices meet several times a year and have regular visio-conferences on academic or health issues in the two Cantons. Interactions also exist with the Faculties of medicine of Bâle, Berne, Fribourg and Zürich.

As to International exchanges, there is a long standing tradition for medical students in Geneva to take clerkships out of the country during their 3\textsuperscript{rd} MA year. Many conventions have been established to facilitate those experiences, some are part of the Erasmus exchange concept\textsuperscript{55}, some are related to specific collaborative projects of Faculty members with partner institutions around the world (see below); the Community Immersion program at the end of the 3\textsuperscript{rd} BA year is now strongly international with more than the half of the students going abroad\textsuperscript{56}; new in 2011 an exchange program of one semester (Spring semester 3\textsuperscript{rd} BA year) takes place between Leiden and Geneva (8 students from each Faculty of medicine or medical school): the first impressions are positive, and a formal evaluation is underway.

**International collaborations**

Most projects of international collaboration are developed and implemented with funding either from the Faculty of medicine, the Commission de coopération internationale of the Canton of Geneva, the Division of Cooperation and Development of the Swiss Confederation, or from Foundations committed to research, education and development.

The Swiss government provides University scholarships for postgraduate students from low-and middle-income countries. With this program, students from Africa (Cameroon, Madagascar, and Morocco) and Latin America (Bolivia) have obtained certificates of advanced studies (MAS) in medical informatics and in public health in Geneva.

Two special issues of the *Revue Médicale Suisse* have presented the collaborative projects developed over the years, some lasting for extended periods of time, mainly with partner institutions in developing countries (*REVUE MEDICALE SUISSE. Coopération et aide au développement - supplément août 2006 : Projets des Hôpitaux universitaires de Genève et de la Faculté de médecine de Genève\textsuperscript{57}*) or with international organizations (*REVUE MEDICALE SUISSE. Echanges entre l’Université et la Genève internationale - supplément mai 2009 : Une faculté de médecine en interaction avec le monde\textsuperscript{58})*. As mentioned above, the collaborative projects are important to the students since often they facilitate clerkships abroad.

To be mentioned as exemplary is the 30-year collaborative project supported by the Canton of Geneva and the Swiss Confederation between the Faculties of medicine of Geneva and Yaoundé Cameroun: close to one hundred doctors from Cameroon were formed in medical specialties (98% of these doctors returned to their country following their formation), and

\textsuperscript{54} http://www.medecine.unige.ch/coopinter/
\textsuperscript{55} http://www.unige.ch/international/mobint/erasmusinfo.html
\textsuperscript{56} http://www.medecine.unige.ch/enseignement/apprentissage/module4/immersion/
\textsuperscript{57} http://www.medecine.unige.ch/coopinter/rvm.php
\textsuperscript{58} http://www.medecine.unige.ch/coopinter/rvm2009.php
over two hundred medical students from Geneva could take a two-month clinical and community clerkship in Cameroon.

Another example of a long-standing project is the RAFT network for distance education and tele-expertise in French-speaking Africa (Réseau en Afrique Francophone pour la Télémédecine), launched in 2001 and now active in 18 countries, aimed at supporting care professionals working in isolated conditions. RAFT is supported by the Faculty of medicine and the UNESCO Chair for Telemedicine and Multidisciplinary Education, by the Geneva University Hospitals and the WHO Collaborating Center for e-Health and Telemedicine. This network also provides courses for medical students in tropical medicine by experts in Africa, as well as research opportunities for the Master’s dissertation work.

Recently, a collaborative project supported by the WHO and the Global Health Workforce Alliance was initiated that allows health professionals from ten French-speaking African countries to get a MAS in Public Health from the University of Geneva through a distance learning program.\(^{59}\)

\(^{59}\) http://www.who.int/workforcealliance/media/events/2010/mastersfrancophone/en/
7 AREA: PROGRAMME EVALUATION

7.1 STUDY PROGRAMME EVALUATION

Standards:
1. The Faculty of medicine has quality assurance mechanisms (i.e. evaluations) that monitor the study program and student progress, and ensure that weaknesses are identified and addressed.
2. Study program evaluation includes the context of the educational process, the specific components of the study program, and the general outcome.

Annotations:
- Precondition for the study program evaluation are valid and reliable methods as well as relevant data on the medical study program. The quality of assessments can be improved by involving experts in education.
- Identified shortcomings are communicated to the curriculum committee.
- The context of the educational process includes the organization, resources, the learning environment and culture of the faculty of medicine.
- Specific components include the description of the study program and student performance.
- General outcome would be measured, for example, by career choices and postgraduate performance.

1. Assessment of students’ performance

Students’ performance is assessed during the BA and MA programs with standardized written, practical and oral examinations, with ratings derived from direct clinical observations, ratings of their Master’s thesis, and finally with the new federal licensing examination (Examen fédéral de médecine humaine) which will take place for the first time this summer. These various evaluations allow the individual monitoring of student progress throughout the medical curriculum, as well as comparisons across classes.

2. Evaluation by the students of the teaching Units

a. Curriculum evaluation

At the end of each PBL Unit in the BA program, and of each LCE Units in the MA program, students are asked to provide their evaluation and feedback on the overall Unit content, its’ teaching and organization, as well as on all learning activities or experiences, such as PBL small group tutorials, Clinical Problem Solving (CPS) tutorials, lectures, seminars, practical laboratories, and any provided clinical activities or experiences. The evaluation questionnaires of both PBL and LCE Units include items using 5-point Likert rating scales as well as open-ended questions (Appendix 22 and 23).

In the BA program, the Vice-Dean of education has semestrial lunch meetings with randomly selected groups of students. The purpose of these meetings is to get the students’ feedback and suggestions on various aspects of the curriculum which may not be obtained on the formal evaluation questionnaire.

Students’ representatives at the Education and the BA and MA Curriculums Committees also provide regular feedback on all aspects of the curriculum.

b. Tutors’ and teachers’ evaluation

All teachers functioning as tutors from the 2nd BA through to the 1st MA years are evaluated by the students with a questionnaire at the end of each instructional Unit. The 17-item questionnaire measures 3 general tutors’ competencies: their capacity to guide students’ learning (10 items), their leadership in group functioning (4 items) and their ability to provide feedback to the group (3 items) (Appendix 24). Students are encouraged to free comments on the tutor and the functioning of their group.

Lecturers and seminar/laboratory instructors are evaluated with respect to the quality (clarity, appropriate content, and pace of lecturing) of their lectures and seminar/laboratory sessions (Appendix 22). This is the way teachers in the 1st BA year are evaluated.

The evaluation of the tutors, teachers, and supervisors in the clerkships of MA years is less comprehensive, due to the students’ constant and short rotations in different clinical services, as well as the relatively short contact they have with each individual Faculty member or supervisor.

Overall, the evaluation questionnaires are administered either on paper or on-line.
3. Regular reviews by the BA and MA Curriculum Committees

The respective Committees (comprising mainly Faculty members responsible of the different teaching Units and students' representative) are informed on the unfolding of the curriculum and training programs, students’ examination results, teachers’ feedback and students’ evaluations. Global review is made by the Education Committee. Students’ evaluations and Faculty’s feedback may lead to curriculum and/or exam changes, as exemplified recently by the work in progress aiming at remodeling the 2nd and 3rd BA exams so as to test not mostly knowledge but also reasoning and professionalism.

4. Retrospective curriculum evaluation by senior students and by 1st and 2nd year graduates

The students are asked to evaluate the entire six-year curriculum during the 3rd MA year, as well as during their first two years of residency training. This to determine retrospectively whether the curriculum has prepared them well enough to start their professional career. The evaluation questionnaires include items with 5-point Likert rating scale as well as open-ended questions (Appendix 25)

5. Students and graduates' choices of specialty, career, type and location of practice

During the BA (2nd year), the MA (2nd or 3rd years) programs, the Residency or Postgraduate training (first two years), students are polled to determine their prospective or current choices of specialty, professional career and the type and location of practice. It is hoped that in the long term, such polls will inform us whether the efforts to promote family medicine in non-urban settings have been fruitful!

UDREM, in collaboration with other Swiss Faculties of medicine has carried out, for the last 4 years, similar surveys in Lausanne, Zurich and Berne.

6. Study program evaluation components - Design, administration, development, analysis and report

Regarding the students’ assessment program, the BA and MA examination formats and overall content are managed by their respective Curriculum and Exam Committees. The test items are developed by the Faculty members of each respective Unit of instruction. UDREM assists them in developing, maintaining and updating the multiple-choice test item pool, in generating the test booklets and answer sheets, and in the analysis of test items, in test scoring and test results reporting. Similar support is given for the standardized/simulated patient (SP)-based clinical examinations. All test results are reported to the respective Exam Committees and the coordinators of instruction Units for discussion and approval (possible changes in scoring can be made at this stage).

UDREM provides the Faculty members with the required workshops for constructing multiple-choice test item and SP-based practical exam stations. UDREM recently recommended the acquisition of the CBA program (Campus®), organized Campus-related test item construction workshops and acquired the DataScan® program to upgrade our system of test answer sheets generation, test analysis and scoring. UDREM also recommended the acquisition of the Evasys® system for administering paper and online surveys and facilitating surveys analyses.

Regarding the curriculum and teaching evaluation, the respective assessment processes, programs and questionnaires are regularly revised, redesigned and implemented by UDREM’s medical education experts, in collaboration with the BA and MA Curriculum Committees and coordinators of the instructional Units. This to ensure high methodological standards and, if needed, program modification and improvement.

60 http://www.unige.ch/medecine/udrem/index.html
To conclude, it must be said that the pilot attempt to administer the BA Units assessment questionnaires on-line resulted in a decrease in the average return rate, going from 68% to 38%. UDREM now reflects on the appropriate ways to increase students’ compliance with on-line surveys. The BA tutors’ evaluations, as well as those of the MA Units are still administered on paper and do maintain an overall good average rate of return.

7.2 TEACHER AND STUDENT FEEDBACK

Feedback from students and role of the students in the curriculum evaluation

The students fill out the questionnaires concerning the teaching Units, as well as those on the tutors. The students are free to give written comments on the same forms.

Motivating students to participate in curriculum evaluation

In order to motivate students to complete their curriculum evaluation questionnaires, they are regularly informed about the implementation of improvements they have asked for, as well as improvements brought by the teachers to the program. Moreover, student representatives in the Curriculum Committees are directly involved in the decision processes regarding the curriculum and its examination programs.

Use of the tutors/teachers’ evaluation results (cf. chapter 3.4)

A tutor with an unsatisfactory rating is first invited to meet with the coordinator of the teaching Unit involved. They examine together what went wrong and what could be done to improve the situation. In most cases, the next performance of the tutor already improves after this meeting. In fact, we have found that, as a rule, tutors perform better and better during the first years of exercise and that it takes about three years before a tutor can be consistently rated.

The very few tutors with repetitive insufficient performance (i.e. three consecutive years) are invited to meet the coordinator of his/her teaching Unit and the UDREM director of the tutor-training program, in order to design a personalized approach adapted to his/her own difficulties. The director of the tutor-training program, together with three expert tutors, recently developed an individually tailored coaching for PBL tutors, using self-reflection and peer feedback processes.

Graduates’ evaluation and feedback on their undergraduate training

As mentioned before, we have implemented a study to collect the retrospective judgment of 1st and 2nd year graduates on how they feel the new curriculum has prepared them to their residency training and prospective career choice.

Teachers’ feedback to review and improve curriculum

Teachers’ opinions are sought after in Curriculum Committees, as well as in questionnaire surveys, to know their view on their role as tutors and on different aspects of the curriculum. Feedbacks are also promoted between Unit coordinators and their respective tutors regarding the PBL cases, teaching activities, organization, students’ learning and exam results.

61 The ACIMF draws the attention on the risk that tutors may adopt (demagogic) attitudes that foster good ratings given by students.
Curriculum follow-up evaluation and consequences of the evaluation

Results of assessments are regularly presented to the respective Curriculum Committees for discussion and adaptation, if needed. This resulted, for example, in a better information of students about the different medical specialties, career choices and residency applications, as well as in the creation of a working group to give a complete view and promote the primary care/family medicine specialties.

7.3 STUDENT PERFORMANCE

Standard:
Student performance is analyzed in relation to the mission, objectives, and study program of the Faculty of medicine, and brought to the attention of the curriculum committee.

Annotation:
- Measures of student performance include information about the average length of studies, scores, pass and failure rates at examinations, success rates of graduates, dropout rates, student reports about conditions in their courses, as well as time spent by the students on areas of special interest.

Student's performances are regularly reported to the respective Curriculum and Exam Committees, and to the Education Committee.

Overall graduation rate

Overall, 41% of the students who began their studies in the first year between 1992 and 2004 at the Faculty of medicine of the University of Geneva obtained the physician’s diploma. The average study duration is 6.6 ± 0.8 years. After the first year, the dropout rate due to failure at the exams is low.

BA – 1st year performance

As indicated in chapter 2.2, the first year is a selection year since we lack an admission policy and that the number of students exceeds by far PBL and clinical capacity. Therefore, the average pass rate is low (35 +/- 5%).

BA – 2nd and 3rd year performance

For the 2nd and 3rd years, the average pass rates for the 2 written exams each year are respectively 89% for the Modules 1 and 2 and 86% for the Module 3 and 4. For the clinical skills program exam (standardized patient-based practical examination, OSCE) the average pass rate is 93%.
For the optional courses, the average pass rates for the last two years (2009 and 2010) are respectively 99% and 98%. If failed, all exams can be repeated thrice.

MA – 1st and 2nd year performance

With the introduction of the new LPméd and the Bologna principles, a student assessment program has been introduced in 2010 with four exam periods during the MA years 1 and 2. Each Faculty is responsible for its own program of exams leading to the title of Master in medicine, which is required to register for the licensing Federal Exam of Human Medicine (cf. chapter 4).

The first session consists of a MCQ exam at the end of the Introduction to Clinical Reasoning Unit (UIDC). The second and third sessions take place at the end of the rotations of the long AMC Units (8 weeks): Surgery, Obstetrics-Gynecology, Internal Medicine, Primary care and community medicine, Pediatrics, Psychiatry. CBA and OSCE formats are used. Each of the six disciplines is to be passed independently.

The fourth session as just been completed in July 2011 and comprised exams (oral + CBA) in the short (2-3 weeks) AMC Units: Dermatology, Neurology, ENT, Ophthalmology, Emergency medicine and intensive care, Pathology, Radiology, Forensic medicine and Medical ethics. The global note obtained by the addition of the results of the seven exams must average 4 for pass.
Attending 3-4 exams per session, depending on the rotations, is required for each student, provided he/she has a valid formative evaluation (cf. chapter 4).

The average pass rate of the UIDC session is 97%, of the long AMC Units 92%, that of the short AMC Units 99%.

7.4 INVOLVEMENT OF STAKEHOLDERS

Standard:
The processes and outcome of study program evaluation involve the governance and administration of the faculty of medicine, academic staff and students and take into consideration feedback from additional stakeholders.

Annotation:
- Additional stakeholders include educational and health authorities, representatives of the public, professional organizations, and authorities responsible for postgraduate education.

The involvement of stakeholders in program evaluation is as follows:

1. Leadership: A Vice-Dean is in charge of education. The Vice-Dean has primary responsibility over pre-graduate medical education at the Faculty of medicine; he/she represents the Faculty on the national level, in policy decisions regarding medical education and professional training. Furthermore, the Vice-Dean is chairman of the Education Committee, which has the broader mandate of maintaining the standards of medical education. The Committee’s current affairs are treated by the Steering Committee of the EC, which meets weekly.

2. The academic staff has representatives in the Education Committee, the BA and MA Curriculum Committees, the Participative Council, and the Examinations Committees (BA and MA).

3. Students have representatives in the same Committees, with the exception of the BA Examination Committee.

The composition of the Education and various Curriculum Committees and of the Faculty Council can be found at:

There are no representatives of the University, of the general public, nor of the health care professional associations and other health care providers. The meetings of the Participative Council, however, are open to the public. The Participative Council examines all major decisions regarding the curriculum, the nomination of the Dean, etc. (see chapter 8)⁶².

⁶² http://www.unige.ch/medecine/enseignement/formationsDeBase/medecineHumaine/gestionCurriculum.html
8 AREA: GOVERNANCE AND ADMINISTRATION

8.1 GOVERNANCE STRUCTURES AND FUNCTIONS

Standards:
1. Governance structures of the Faculty of medicine and their functions are defined, including their relationship within the University and to the University Hospital.
2. The Faculty of medicine has a strategic plan.
3. The academic staff participates in decision-making processes concerning teaching and research.
4. Decision-making processes, competencies, and responsibilities are communicated to all participants.

The three main authorities of the Faculty of Medicine are:

- **The Dean’s Office (the executive body)**
  
  It consists of the Dean, of Vice-Deans and Associate-Deans (maximum of 6 Vice- and Associate-Deans). The Dean is elected by the Participative Council on notice of the Collège des Professeurs and is formally appointed by the Rector of the University. During the nomination process, the Chairman of the HUG’s board of directors is interviewed by the Participative Council to ensure that the HUG’s direction will be able to collaborate with the future Dean. The Chairman of the HUG’s board of directors has the right to refuse a candidate (Appendix 20: “Règlement hospitalo-universitaire”). The Dean is appointed for a four-year period, and can be re-elected for a second four-year period. The Participative Council also elects the Vice- and Associate-Deans on notice of the Collège des Professeurs.

  The Dean takes all decisions and actions necessary for the good functioning of the Faculty. Vice-Deans can have a specific field of responsibility (e.g. education, research, etc.), but major decisions are taken collegially by the Dean’s Office. The Dean participates in the College of Deans with the Rector and Vice-Rectors of the University.

- **The Participative Council (a participative body)**
  
  It consists of 16 professors, 8 members of the Collaborators of teaching and research (e.g. the ACIMF), 8 students, and 4 members of the administrative and technical staff (secretaries, technicians, etc.). Members are elected by their respective bodies. The president is elected for one-year, renewable. The Participative Council meets at least 3 times a year. It votes on teaching programs and elects the Dean, Vice-Deans, and Associate-Deans, as well as Directors of departments; it can ask questions to the Dean’s office on all issues related to the functioning of the Faculty.

- **The Collège des Professeurs**
  
  It consists of all the professors of the Faculty and is chaired by the Dean. It meets once a month, approximately 10 times per year. Permanent Committees are designated by the Collège des Professeurs to advise the Dean’s office on issues related to teaching, research, ethics, etc; these usually include, in addition to professors, other Faculty members and may include students. Planning Committees are designated by the Collège des Professeurs and report on the need to replace professors, to create new chairs, and to select new tenured members of the Faculty. Each nomination or promotion is then evaluated by ad hoc temporary Committees that report to The Collège des Professeurs, which votes on these reports.

  The Collège des Professeurs approves the composition of the Education Committee presented by the Dean’s Office (this is a procedure that takes place each year). The Education Committee presents each year a report.

63 Full, Associate, Assistant, Titular, and substitute Associate (Career-development award) Professors.
Organization of the Faculty with respect to teaching

As mentioned before (cf. chapter 2), the Education Committee, the BA and MA Curriculum Committees have responsibility for various aspects of the curriculum. The Steering Committee of the EC acts as a supervising and governing body. It can accept, modify, or reject proposals from BA and MA Curriculum Committees, and can also propose major changes in the curriculum.

The Steering Committee of the EC, which meets once a week, is presided by the Vice-Dean for Education; its members are the chairpersons of the BA and MA Curriculum Committees, the students’ Advisors, the director of the UDREM, the persons in charge for the BA and MA examination procedures, and the assistant of the Vice-Dean, who takes the minutes. The EC must approve major changes proposed by its Steering Committee. Students are represented in the BA, MA and Education Committees. They are voting members of these Committees.

Such an organization allows academic staff and students to participate to all decisions concerning teaching.

Organization and functioning of Curriculum Committees

- **BA Curriculum Committee**

  The coordinators of the BA teaching Units, the director of the UDREM and 4 students constitute this Committee. In addition, for disciplines not represented by a coordinator of a teaching Unit, the Committee has specific consultants (e.g. for anatomy, radiology, pharmacology, etc.).

  The Committee:
  a) supervises the organization and content in the Basic medical sciences, Clinical skills and Community dimensions programs in BA years 1 to 3;
  b) verifies the coherence and functioning of the teaching Units;
  c) proposes all necessary adjustments in contents and schedules;
  d) Ensures longitudinal coordination of the curriculum, in collaboration with the MA Curriculum Committee;
  e) co-ordinates the teaching objectives of the clinical skills and community-oriented programs with those of the basic medical sciences;
  f) examines and approves (with the consent of the EC) the proposals for changes in the organization of the curriculum, the educational formats, or the examination procedures.

  The BA Curriculum Committee meets 10 times a year. There is an agenda known in advance and minutes are taken. After each Module, the evaluation by the students of the corresponding teaching Units, together with opinion of the teachers, are presented to the Committee. The coordinator of each Unit presents, when needed, the planned modifications regarding the Unit content which are discussed by the Committee.

  The Committee also ensures the appropriate representation of the various basic medical and transversal disciplines in PBLs, the control and updating of references, the pertinence of learning objectives.

  Modifications of the BA program which could impinge on the MA are communicated to the MA Curriculum Committee, so as to avoid repetitions or deficits in the curriculum.

- **MA Curriculum Committee**

  It includes the coordinators of the “Introduction to clinical reasoning Unit”, coordinators of the clerkship rotations, and consultants for transversal disciplines, the director of the UDREM, 6 students and a member of the BA Curriculum Committee for coordination. The missions of the Committee are similar to those of the BA Curriculum Committee, but applied to the MA program.
8.2 ACADEMIC LEADERSHIP

Standards:
1. The responsibilities of the academic leadership of the Faculty of medicine for the medical study program are clearly stated.
2. The academic leadership is periodically assessed with regard to the fulfillment of the mission and objectives of the Faculty of medicine.

Co-ordination of the various activities of the Faculty (teaching and research in particular) is achieved by the Dean’s Office which is the executive body of the Faculty (cf. chapter 7). The working of the different Curriculum Committees, under the supervision of the Education Committee and its Steering Committee, chaired by the Vice-Dean in charge of education, ensures both a comprehensive and coherent content as well as adequate pedagogical formats for the whole curriculum, with both horizontal and vertical integrations of the teaching objectives.

An annual report of the EC is presented to the Collège des Professeurs by the Vice-Dean in charge of education. Other permanent Committees (Research, International Cooperation, Library, etc.) also present annual reports. There is no formal evaluation of the academic leadership of the Dean’s Office (profound unease would be reflected by the votes of defiance by the Collège des Professeurs). The Dean and Dean’s Office have a 4-year tenure.

Strengths

The Faculty’s organization allows a continuous adaptation of the curriculum and provides the adequate authority to implement the changes.

Weaknesses

There may still be an insufficient co-ordination between the BA and MA Curriculum Committees.

8.3 ADMINISTRATIVE STAFF

Standard:
The Faculty of medicine has sufficient administrative staff. This ensures the organizational implementation of the study program and other activities, and guarantees efficient resource management. 64

The administration of the Faculty is headed by two administrators, hired by the Dean. One has the responsibility to assist the Dean for all financial issues. The other is in charge of the functioning of the University Medical Center (and its personnel), in particular the lecture halls, the PBL rooms and various practical lab settings. The two administrators work with the Dean and the Vice-Deans. Other members of the administrative and technical staff have specific responsibilities related to the various services and facilities supported by the Faculty (e.g. the core facilities for research, the animal house, etc.) The Vice-Dean in charge of education interacts directly with the administrators and their staff for matters concerning medical teaching. The administrative staff is submitted to regular evaluation.

Strengths

Regarding teaching, the Faculty counts on a core of highly competent and dedicated members of the administrative staff. They work with a large degree of autonomy and independence to carry out the innumerable tasks without which the implementation and safe unfolding of the medical curriculum would be impossible.

64 Contained in SUK-guidelines Art. 9, 1.03
Weaknesses

While the Faculty devotes a great deal of efforts and logistics towards the information of students and teachers about the various aspects of the curriculum and the importance of values at stake, no such efforts are directed at the administrative staff in charge of education. In particular, they are gaps and delays in communicating decisions of the Curriculum Committees to the persons in charge of their application. The reverse path of feedback from the administrative staff to the various Curriculum Committees is also insufficient. This contributes to the fact that each member of the administrative staff works in relative isolation, without a clear view of his/her respective contribution to the ensemble, of his/her rights and duties, nor incentives to career development.

In technical terms, one problem which hinders the work of different members of the staff involved in the management of students, teaching and teachers is the lack of interconnectivity between different databases.

These deficiencies should be addressed in the forthcoming accreditation period.

8.4 EDUCATIONAL BUDGET AND RESOURCE MANAGEMENT

**Standards:**

1. The Faculty of medicine has clear authority and responsibility for the study program and its financing. This includes a dedicated educational budget.
2. The Faculty of medicine has sufficient autonomy to direct resources, including the remuneration of teaching staff, in order to achieve the overall objectives of the Faculty.
3. The financial sources and all conditions linked to financing are transparent, and do not hinder the autonomy of the Faculty of medicine to make decisions concerning teaching and research.

We have seen before (cf. chapter 1) that the Faculty has a clear line of responsibility, autonomy and authority, and a budget, to run its curriculum. The Dean, with the help of the Dean’s office and the responsible administrator, is in charge of preparing and managing the Faculty’s budget. A University Accounting Office controls the use of the funds.

Most of the salaries for academic positions involved in teaching are provided by the Département de l'instruction publique of the Canton of Geneva. These public funds are provided with the explicit understanding that all academic staff must participate in teaching. A substantial fraction of the salary budget (20 million CHF) allotted to the Faculty of medicine is assigned to teaching. Additional resources are provided by the Department of Public Health of the Canton, responsible for the University Hospitals, since the medical staff is also expected to contribute to undergraduate teaching. The resources provided by private funding, in the form of salaries for academic staff, are mostly attributed on the basis of research projects.

There is a running budget for teaching (cf. chapter 1.3), which pays for the contribution of private practicing primary-care physicians in students’ education, and for the expenses of health care and hospitals settings (outside the University Hospital) that accept our students for clinical rotations.

One objective that may still require additional resources is the improvement of the contact of students to ambulatory medicine and, in general, to a primary care/family medicine approach to patients.

The Faculty supports a continuous evaluation process of the teaching activities (including examinations), of research activities, and administrative tasks. This permits a precise evaluation of the use of the resources for these different purposes.
8.5 INTERACTION WITH THE HEALTH SECTOR

The Faculty of medicine collaborates with the health and health related sectors of society and government.

The health sector includes the public and private health care delivery system, medical research institutions, political steering structures, etc.

Other sectors linked to the health sector include national and international institutions and administrative bodies, whose activities play a role in the promotion of health and disease prevention (i.e. with environmental, nutritional, and social responsibilities).

The Faculty of medicine has a very close and fruitful relationship with the Health sector via the University Hospital. The Dean’s Office meets 10 times a year with the General Director and the Medical Director of the Hospital. The Dean is ex-officio member of the Direction Council of the Hospital.

The Faculty can also rely on the crucial collaboration with many private medical practitioners in the Canton of Geneva involved in the teaching of the primary care/family medicine program (cf. chapter 2.6). In addition, useful relationships exist with Hospitals of other Cantons of Switzerland (in particular Vaud, Valais, Neuchâtel, Tessin, Fribourg).

Regarding collaborations with the international health sector, several subdivisions of the Faculty, in particular the Department of Health and Community medicine, have regular interactions with organizations such as the WHO and the International Red Cross Committee.

New collaborative projects are being developed (May 2011), notably between the Faculty, the Haute Ecole de Santé and the University Hospital to jointly train healthcare professionals. The three institutions plan the creation of a center of inter-professional training in clinical skills and new Master degrees in integrated care. These degrees will be offered to the Faculty and Haute Ecole de Santé students to foster new professional competencies that should counter the expected shortage of medical professionals for primary care/family medicine.

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65 Responsible for the formation of nurses, physiotherapists, nutritionists, midwives, radiology technicians, emergency medicine technicians (ambulance attendants).
9 AREA: CONTINUOUS RENEWAL / QUALITY ASSURANCE

**Standard:**
As a dynamic institution, the Faculty of medicine implements procedures for the periodic reviewing and updating of its structure and functions, and rectifies documented deficiencies.\(^{66}\)

**Annotations:**
- Adaptation of the mission statement and objectives of the Faculty of medicine to the scientific, socioeconomic, and cultural developments of society.
- Modification of the required competencies of the graduating students in accordance with documented needs of the environment that the graduates will enter. These modifications include clinical skills, public health training, health economics, and participation in patient care.
- Adaptation of curriculum model and instructional methods to ensure their suitability and relevance.
- Adjustment of the contents of the study program and their relationships in keeping with developments in biomedical sciences, behavioral and social sciences, clinical sciences, changes in the demographic profile and health/disease patterns of the population, as well as socioeconomic and cultural conditions. This adjustment assures that new relevant knowledge, concepts, and methods are introduced and outdated ones discarded.
- Adaptation of admission requirements and selection processes to changing expectations and situations, human resource needs, changes in the educational system that these students have gone through prior to their medical education, as well as changes in the requirements of the study program.
- Development of assessment principles, examination methods and number of examinations according to changes in educational objectives, learning outcomes and methods.\(^{67}\)
- Adaptation of recruitment and staff policy for academic staff to the changing needs of the Faculty of medicine.\(^{68}\)
- Adaptation of the educational resources to the changing needs of the Faculty of medicine, i.e. the number of students, size and profile of the academic staff, study program, and contemporary educational principles.
- Development of the process of study program monitoring and evaluation.
- Development of organizational structures and management principles in order to cope with the changing general framework and needs of the Faculty of medicine, and to accommodate the interests of various stakeholders.

To meet the challenges and goals set in the domains of health and health teaching, now and in the future, the Faculty of medicine can count on:

- The autonomy of choosing its priorities in teaching and research.
- An external Scientific Advisory Board which is consulted regularly on research orientations and organization.
- Permanent Committees (notably for Education and for Research) that conduct continuous evaluations in their respective domains and can introduce appropriate adjustments.
- Regular evaluation of the academic and administrative staff.

Our ability to adapt and develop the teaching curriculum is exemplified by the major changes introduced over the last 5 years:

- Complete reform of the first year BA medical curriculum.
- Creation of a teaching Unit in primary care/family medicine.
- Organization of 8-week rotations of students in primary care practice.
- Implementation of the Bologna principles.
- Adaptation of the curriculum to the new federal LPMéd governing medical professions in Switzerland.
- Introduction of options (elective) in the medical curriculum.

We thus believe that the Faculty of medicine of Geneva is well equipped for regular evaluation and adaptation of its teaching, social (with respect to the community’s health) and research missions in a changing environment.

\(^{66}\) cf. SUK-guidelines Art. 9, 1.05 and Art. 10, 2.03.

\(^{67}\) Must be satisfied implicitly in order to fulfill Art. 9, 2.03 and Art. 10, 3.02 of the SUK-guidelines.

\(^{68}\) Must be satisfied implicitly in order to fulfill Art. 9, 1.03 of the SUK-guidelines.
APPENDICES

Appendix 1: Règlement des études universitaires de base de médecine humaine à la Faculté de médecine de l’Université de Genève (statutes of the Faculty of medicine)

Appendix 2: Loi fédérale sur les professions médicales universitaires, LPMéd (Federal law on medical professions)

Appendix 3: Catalogue suisse des objectifs d’apprentissage (SCLO http://sclo.smifk.ch/)

Appendix 4: Loi sur l’Université (statutes of the University of Geneva)

Appendix 5: Sixth year medical students’ evaluation of the overall curriculum

Appendix 6: Instructional methods (teaching formats)

Appendix 7: Liste des cours à option des années Bachelor (elective courses in BA program)

Appendix 8: Plan d’études du programme Master (Master program)

Appendix 9: Composition du Bureau et de la Commission de l’Enseignement (composition of the EC Committee)

Appendix 10a: Composition du Bureau et du Comité du programme Bachelor (composition of the BA Program Committee)

Appendix 10b: Composition du Bureau et du Comité du programme Master (composition of the MA Program Committee)

Appendix 11: Clinical Skills Program

Appendix 12: Overview of the assessments methods throughout the curriculum

Appendix 13: Summary of assessments and evaluations during the 3-year Bachelor curriculum

Appendix 14: Exemple d’une évaluation formative de l’étudiant du programme Bachelor (example of a formative evaluation of student’s work in the BA program)

Appendix 15a: Exemple d’une station formative de compétences cliniques (example of a formative station in clinical skills)

Appendix 15b: Exemple de consignes pour les patients standardisés (example of instructions for standardized patients)

Appendix 16: Summary of assessments and evaluation during the 3-year Master curriculum

Appendix 17: Exemple d’une évaluation formative de l’étudiant du programme Master, AMC de pédiatrie (example of a formative evaluation of student’s work in the MA program, LCE Paediatrics)

Appendix 18: Exemple d’évaluation d’une rotation clinique, 3ème année MA (example of a Clinical Internship Evaluation, MA 3)

Appendix 19: Check-list d’acceptabilité et critères d’évaluation du travail de mémoire de Master (standards of acceptability and evaluation of the Master thesis)

Appendix 20: Règlement sur la collaboration hospitalo-universitaire et le statut du corps professoral (statutes of collaboration between the University Hospital and the Faculty of medicine : http://www.geneve.ch/legislation/rsf/rsg_c1_30p15.html)

Appendix 21: Composition de l’Unité de Développement et de Recherche en Éducation Médicale (composition of the UDREM)
Appendix 22: Modèle d'évaluation en ligne d'une Unité PBL du programme Bachelor, (système Evasys) (model of the on-line evaluation of a PBL Unit in the BA program)

Appendix 23: Modèle d'évaluation en ligne d'une Unité LCE du programme Master (système Evasys) (model of the on-line evaluation of a LCE Unit in the MA program)

Appendix 24: Modèle d'évaluation en ligne du tuteur dans une Unité PBL du programme Bachelor (système Evasys) (model of the on-line evaluation of the tutor in a PBL Unit in the BA program)