



School of Medicine

ANNUAL REPORT

2016–2017

University of Minho

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1. INTRODUCTION & GENERAL OVERVIEW

The present report provides an overall view of the School of Medicine, including its Research Institute (the ICVS – Life and Health Sciences Research Institute), and the main strategies and progresses in the academic year 2016-2017. The detailed data on the scientific and pedagogical activities are presented in individual attached reports.

The mission of the School of Medicine (EM) is to *improve healthcare through education and research*. In this report, and in alignment with our Mission, we will highlight the major events and achievements of the academic year 2016-2017.

The first thing to be highlighted in the present report is the change in the name of the School. During the celebrations of its 16th anniversary, on the 10th October 2016, the School of Health Sciences became the **School of Medicine**, University of Minho. This was an important moment for the EM community, since the new designation more closely reflects the activity and the focus of the school; in addition, it facilitates the construction of the EM brand, both nationally and internationally.

On the same day, the EM also celebrated the graduation of the 11th cohort of medical students (among them the 2nd cohort of the 4-years curriculum). Again, this represents one of our main achievements and is certainly the result of the close permanent collaboration between students, researchers, faculty and staff that embodies the spirit of the ECS->EM.

An important landmark in 2016-2017 was the site visit by the “Agência de Avaliação e Acreditação do Ensino Superior – A3ES” (Assessment and accreditation agency for higher education), in December 2016, which renewed our accreditation based on an extremely positive final report (to appreciate the Report please consult Annex I).

Despite the positive remarks of the A3ES’ Report, the face of medicine is changing at a fast pace, profoundly altering the skills and competencies required from tomorrow’s doctors. In order to prepare the physicians that the future needs, we embarked on an ambitious 3-year plan to profoundly rethink and reorganize the entire medical degree – Minho 2020. This shows our clear commitment to think forward on what would be the expertise needs in the medicine and health care of the future; and is part of our inherent culture of assessment, continuous monitoring and improvement in healthcare. This is a multi-step process, for which a Steering Committee was

created; the first step of this process – consultation of the multiple stakeholders – already took place, and the report of this step can be consulted in Annex II.

During this year, we reinforced our efforts to the internationalization of the school. It must be highlighted that the current legislation and the organization of the EM medical curriculum in face of those of most other medical schools makes exchange of students difficult in what concerns formal accreditation of training. However, to be able to take full advantage of the existing opportunities, a full-time internationalization officer was recruited, to promote exchange programs such as ERASMUS and the Global Education in Medicine Exchange, for undergraduate and graduate students. During this academic year the EM strengthened the collaboration with our national and international partners, in particular with the National Board of Medical Examiners (NBME-USA) and the Thomas Jefferson (Sidney Kimmel) Medical School and signed an increased number of memorandum of cooperation with several international medical schools. We also maintained the commitment of meeting the highest international standards of quality in medical education, and are preparing to apply for another component of the Aspire Certificates of Excellence, this time in Assessment of Students.

The operations in Continuous Medical Education continued, in collaboration with the Alumni Medicina. Several initiatives to strengthen the quality of education and training in residency programs were developed with increasing recognition and impact. Moreover, the portfolio for the acquisition and training of communication and clinical skills by medical students was expanded, which resulted in the positive improvement in the assessment of clinical competencies.

Another branch of the activities further developed in 2016-2017 pertains with the expansion of the spin-off created in the activity of *ICognitus*. This spin-off company is dedicated to medical education services that resulted from our efforts to create an assessment software, *medQuizz®*, for written exams. This software proved to add value to the assessment process within the EM, since students have greater control to monitor their progression during the exam, while teachers can rapidly identify questions with potential problems (to act in accordance before results are announced) and have an immediate detailed report on the quality of the exam and on student's performance. Of relevance, *medQuizz®* has gained the interest of several prestigious international institutions and is now being deployed worldwide (and in several Medical Schools in Portugal).

A medical school cannot exist without healthcare institutions. We have settled, in the Minho region (and beyond the region), innovative partnerships with healthcare institutions. The EM continued to nurture these cooperative partnerships to assure the best setting for medical training, clinical care and research. In addition, we are starting, together with our clinical partners new initiatives

(e.g. P5 Medicine) designed to promote better healthcare to populations, namely in the link between primary and hospitalar care and for the promotion of health and monitoring of chronic disease. This is a major step for the EM and its partners that we believe will represent an opportunity to move further into the center of the healthcare arena.

It is our belief that better healthcare is closely linked to high quality (clinical) research. In this sense, we are proud to report that the activities of the Clinical Academic Centre-Braga Association (2CA-Braga), have expanded considerably which contributed to leveraging clinical research in the region and in Portugal – as a result, 2CA- Braga is providing innovative therapeutic interventions to hundreds of patients in the region and is being sought as a partner in several national and international clinical research projects, providing consultancy and clinical research services to other healthcare providers, academic institutions and companies (including several MedTech spin-offs, many of which based in Braga). In this regard, it is important to note that the EM and the 2CA-Braga, together with Hospital de Braga and InvestBraga (the investment body of the city of Braga), joined efforts to create the B-MedTech Park, an incubator for medical technologies and medical devices and spin-offs. Hosted initially by the EM, its companies will contribute to foster our special PhD program in cooperation with companies (PhD in Applied Health Sciences).

Postgraduate education is a major mission of the EM, not only within formal Master and PhD programs, but also for advanced training for health professionals and biomedical researchers. In 2016-2017 the EM enrolled 50 additional students in the Master and PhD programs, most of which within the four FCT-funded programs awarded to the EM. Also to highlight is that our Master and PhD programs have been accepted to be part of the Network of European Neurosciences Schools-NENS (<http://www.fens.org/Training/NENS/>), which is a recognition of the quality of the EM activities and will provide visibility to all advanced training initiatives of the school. While funding to secure talented PhD students has been very successful in the past five years, a great concern remains with respect to the more senior researchers, both at the postdoctoral and at the research levels. It is still unclear how the recent legislation on contracts to researchers will impact on the ability of the ICVS to maintain the quality and continuity of the technological platforms and of the training presently provided.

As for the offer in advanced training courses, the EM/ICVS continue to attract a considerable number of participants: 1115 in 2016-2017. The courses on entrepreneurship and research innovation were maintained, confirming the expectation that this will contribute to bring novel competences of young researchers on how to translate basic research into applied products.

Regarding research activities, in 2016-2017 the EM and the ICVS expanded their outcomes and achievements. Indeed, in 2016 the number of peer-reviewed international publications significantly increased (196 papers in international peer-reviewed journals - referenced in ISI, Scopus or Pubmed - in addition to 7 international book chapters and 170 communications and proceedings in international congresses). The increase in the number and impact of the clinical studies developed in the 2CA-Braga, including clinical trials, was also a major achievement (65 clinical trials ongoing in 2016 - corresponding to around 37% of the clinical trials run in Portugal – in addition to 64 investigator-driven clinical studies, including research projects in partnership with the ICVS, other UMinho R&D units and companies). In 2016, it was also possible to increase the number of MD students involved in the ICVS research activities. As a critical achievement for the ICVS and the EM in 2016, it is to be highlighted that the new “Biotério” animal facility in the adjacent area of the EM/ICVS building became fully operational.

Due to continuous growth of the EM, the number of academic and non-academic members also increased. During 2016-2017, we took particular effort in stabilizing the positions of the non-academic staff, increasing their satisfaction and allowing better mid-term planning of activities. The incorporation of new members has been in general extremely positive and their integration brought added value. This integration has been achieved in parallel with the effort to improve the scientific and pedagogic quality of the academic staff. The EM has continuously monitored the performance of every staff member in several academic domains (scientific, pedagogic and managerial); a similar monitoring policy has been put forward in what regards the non-academic staff.

From the financial perspective, 2016-2017 has been aligned with the past recent years; in other words, it continued to be a very difficult period for the universities in Portugal, and therefore for the University of Minho. Fortunately, the EM and the ICVS have significantly expanded their sources of competitive funding. This has mitigated the detrimental impact of low budgets and assured the conditions for the continuous development and consolidation of the EM/ICVS project.

As a final note, EM has, since the 5th of May 2017, a new governing body, headed by Professor Nuno Sousa, that pledged to continue the pursuit of excellence, exploring new endeavours on the way.

2. OBJECTIVES AND STRATEGIES IN 2016-2017

During its seventeen years of existence, the project of the EM has been well established and progressing as planned, having achieved significant success in its educational programs and research activities. The major goal established for 2016-2017 was to keep a permanent commitment to the benchmark of quality at the highest international level. Thus, we pursued continuous improvement, seeking to assure the best conditions to reinforce the EM dynamism with its engagement in new educational and research initiatives, building on existing strengths, and the capacity of ICVS to perform internationally cutting-edge research within the context of the ICVS/3B's AL, as well as the success in the development of clinical research achieved by the 2CA-Braga.

To achieve these aims, we reinforced our commitment on:

- the continuous improvement of the pedagogic and scientific quality of the EM project;
- the adjustment and implementation of new pedagogic methods, in specific areas of the study plans;
- the development of the medical Humanities, including more visibility in the curriculum and more engagement of students;
- the continuous search for the best practices of medical assessment. There was a commitment to adjust the existent, and to explore new, assessment tools that better reflect the acquisition of medical skills and a great effort to expand formative assessment opportunities and feedback; these actions proceeded in parallel with the efforts in medical education research in this topic. This was complemented with an effort to assure the quality, and subsequent certification, of the assessment process;
- the reinforcement of the support to the longitudinal acquisition, training and assessment of clinical and laboratory skills, using well-established, but also innovative, methods and tools;
- further, the structuring and organization of medical residence training program and clinical fellowships programs, as well as the development of new collaborations with our health-care partners, particularly through Clinical Academic Centres, and also fostering new collaborations with other research partners and several industrial partners;
- the internationalization of the EM project, namely through the establishment of new partnerships with other prestigious medical schools around the globe, participating in several international collaborative efforts such as the Global Educational Exchange in Medicine and the Health Professions.

The construction and consolidation of the EM pedagogical project continued in parallel with the capacity of ICVS to perform internationally cutting-edge research. We reinforced our commitment to:

- complete the operations of the “animal facility” building, a major bottle neck of the ICVS, which was finalized during 2016;
- develop the satellite research domain of Population Health into the level of fully established research domain in the context of the ICVS;
- expand the network of collaborating R&D institutions, with the establishment of an active partnership with the INL – International Nanotechnology Laboratory;
- expand clinical research through the 2CA-Braga in collaboration with national and international industrial partners.

3. ACTIVITIES AND ACHIEVEMENTS IN 2016-2017

Medical Degree Course

Six-year Integrated Master Program in Medicine

A separate report (*Snapshot Medical Degree-Assessment of the Academic Year 2016-2017*), prepared by the Medical Education Unit, detailing the pedagogical activities and results undertaken in the academic year 2016-2017 is presented in annex III. A brief summary of the academic achievements follows.

The academic performances available show no striking variations from the previous year, although with a decrease in the failure rates. The success rates in the majority of the curricular units of the first 3 years were equal or above 90%. As in the past, the highest failure rates were observed in the first year of the Medical Degree. The minimum approval rates in courses in the 3rd year is 94%, proving that, in terms of academic performance, students who successfully perform in the first years continue to thrive in the remaining of the curriculum.

In the year 2016-2017, 123 new students were admitted via the national admission process (119 under the general regime and 4 under the special regime for handicapped students and students from the Azores and Madeira Autonomous Regions). For the national admissions process (general contingent), the lowest entrance grade for the newly admitted students was 181.7 out of 200. Seventy-five percent of the students admitted under the general admission regime chose EM as their first option.

The gender balance of the new entrants in 2016-2017 continues biased toward women (74%

female). We also continue to recruit students mainly from the region: 61% come from the District of Braga and 20% from the District of Porto, which is in part driven by the economic difficulties of families.

Four-year Graduate Entry Program in Medicine

In 2016-2017, we continued with the new pathway “Four-year Graduate Entry Program” for graduate students. In this program, the selection process is within the full control and responsibility of the EM. The 2016-2017 graduate entry track selection process to the 18 places was identical to the previous year and included 4-steps: (1) administrative selection - mandated the delivery of a set of certificates, which included holding a previous degree with a final graduation grade point average equal or above 14/20 points; (2) written examination of knowledge – a Basic Sciences Admission Test with 100 multiple choice questions on biology, mathematics, chemistry and physics; (3) the Assessment of Transversal Skills (ATS) – a Multiple Mini-interview like exam (OSCE-type) series of 10 stations, intended to assess personal attributes and soft skills; (4) analysis of *curricula vitae*. There were 186 applicants to this Program (10 applicants/place). The top-scoring 28 students were admitted to the ATS. From these, 18 students were admitted to the “Four-year Graduate Entry Program” in 2016-2017, all with valid registrations.

Global number of undergraduate students in the medical program

The global number of undergraduate students registered in the medical program in the last academic year (2016-2017) was of 135 in the first year, 133 in the second year, 152 in the third year & first year Graduate Entry Program, 132 in the fourth year & second year Graduate Entry Program, 153 in the fifth year and 131 in the sixth year. The total number of students of the EM amounts to 836.

Medical Students Associations: NEMUM and *Alumni Medicina*

NEMUM Report

NEMUM (*Núcleo de Estudantes de Medicina da Universidade do Minho*) is the official representative of medical students at the University of Minho. It is a non-profitable organization, composed of students working for students and, this year, celebrated its fifteen anniversary.

Aside from its commitment to represent the students, NEMUM is also responsible for the organization of several activities of many kinds, from scientific congresses and informal discussions, curriculum complementation, soft skills workshops, community health awareness actions, cultural and recreational activities to scientific and clinical exchanges among countries all over the world.

In regards to NEMUM's relationship with EM/ICVS, it has been based on trust and total availability, allowing for opinions and ideas to be freely shared and discussed from both sides. This is only possible due to the openness of the EM/ICVS to their students and their representatives, and the ever-increasing conjoint pursuit of better opportunities for the students.

In 2017, NEMUM kept organizing desirable activities for its students and challenging them with new workshops and training on several important personal, technical and medical skills. For instance, NEMUM organized the 13th Professor Joaquim Pinto Machado Cultural Week; several clinical competence workshops; monthly public debates on medical subjects; the 10th Minho Medical Meeting, this year with a multidisciplinary theme (Surgery, MedTech and Cancer); any health screenings to the population; Professional and Research Exchange programs with more than forty incoming and outgoing students; the 6th Teddy Bear Hospital; the 7th Vital Run, a running event held at Braga's; the 4th Happy Village, a project that aimed at bringing health improvement and accident prevention tips to an elderly and isolated population in a rural district, this year in Vila Nova de Cerveira, a city far away from the hospitals centers that leads to severe difficulties of healthcare access to the population.

NEMUM is constantly contacting and cooperating with other entities, namely the University of Minho Students' Association, the University of Minho Medical Alumni Association, the Portuguese Medical Students Association (ANEM-Portugal) and the International Federation of Medical Students' Associations, in order to promote and improve the developed activities.

It is NEMUM's intention to continue its work and, most of all, to consolidate and improve the manner in which it organizes itself and prioritizes the activities that are more important and relevant for the students, to complement medical students' education, in social, technical, personal, cultural and scientific aspects.

Summing up, this association is obviously important to EM's students, and also to EM itself, boosting the interest and curiosity of the entire community for science and learning.

NEMUM's Executive Board for 2017: Mar Mateus da Costa (President); Beatriz Antunes (Vice-President for External Affairs); Ana Campos (Vice-President for Internal Affairs); Patrícia Cunha (Treasurer).

The NEMUM President, Mar Mateus da Costa

Alumni Medicina Report

Alumni Medicina (Núcleo de Antigos Estudantes de Medicina da Universidade do Minho) is a non-profit association composed by the alumni of the School of Medicine of the University of Minho. The mission of this association is to support the project of the School of Medicine and to promote the interaction between its members and their *Alma Mater*.

In the last years a significant effort was devoted to increasing the number and the quality of the scientific sessions (courses and workshops) organized by *Alumni Medicina*. The aims of this scientific program are to offer more diversity and opportunities for Continuous Medical Education to healthcare professionals and to promote the interaction between the School and the professionals from different universities and healthcare institutions. In addition, these events are an important financial support to the project of *Alumni Medicina*.

We connect with each other through communication and hence *Alumni Medicina* is concerned with providing specialized courses in Clinical Communication skills that teach health professionals how to better communicate with their patients. Therefore, in 2016/2017 we promoted eight courses on "Clinical Communication Skills".

Besides the scientific initiatives, *Alumni Medicina* also developed its activities in different fields. In the end of 2016 we organized again the "ExpolAC" – a meeting where young doctors transmit their experience to recent graduates about the best places for training during the "common year internship". The same session is planned to happen in November 2017.

In 2016-2017 *Alumni Medicina* kept the cooperation between alumni and current students through their association (NEMUM). From a social perspective *Alumni Medicina* kept the social emergency program, a fund created to help current students with financial difficulties.

In order to promote cultural exchange inside the walls of the EM, *Alumni Medicina* organized three photography exhibitions, two painting exhibitions and one illustration exhibition in the main hall of the School.

The *Alumni Medicina* President

Marina Gonçalves

Post-graduation

A brief summary of the activities is provided in the next paragraphs (for detailed analysis, please consult Annex IV).

The formal advanced training at the EM presently encompasses the following programs:

Master program in Health Sciences

Eighteen students enrolled in 2016-2017 and 9 students defended their theses. It is to note that 2 of the newly admitted students are foreign.

PhD program in Health Sciences

Twenty-one students enrolled in 2016-2017. Ten students defended their theses.

Of notice, the launching of the second call of the FCT PhD program in Health Sciences (Applied) (a total of 36 scholarships for four editions) which contributes to consolidate the intention to formally collaborate with partners from the entrepreneur milieu.

PhD program in Medicine

Nine students enrolled in 2016-2017, of which four in the specific MD/PhD pathway. One student defended his/her thesis.

Aging and Chronic Diseases (PhDoC)

In this interinstitutional (University of Coimbra and Nova University of Lisbon) FCT PhD program, six new students were admitted in the academic year 2016-2017.

Altogether, in July 31st 2017, 27 Master and 91 PhD students were enrolled in the post-graduate programs of EM. Of the latter, 38 were enrolled in the PhD in Health Sciences, 20 in the PhDoC and 33 in the Medicine degrees (of which 20 in the MD/PhD track).

As for the continued advanced training in medicine and in biomedical sciences, 2016-2017 counted with 1115 participants, distributed among the 47 courses and workshops. Of these participants, 68% originated from national institutions outside the University of Minho and 8% from foreign institutions; 77% were medical doctors. These indicators are encouraging in that the EM/ICVS is a place of choice for advanced training and continuous medical education. Of notice, was the offer of training for residents, within the national residency programs in Anesthesiology, Neurology,

Psychiatry, Internal Medicine and Orthopedics, which in 2016-2017 brought to the EM 272 residents. These particular initiatives, launched in collaboration with the *Alumni*, have also contributed to the visibility of the EM and constitute a challenge to foster excellence in advanced training. In addition, and also in collaboration with the *Alumni*, specific training of communication skills for health professionals was organized and counted with 272 participants.

Research

The EM research activities are developed in the context of the ICVS | Life and Health Sciences Research Institute (member of the ICVS/3B's Associate Laboratory) and the 2CA-Braga | Clinical Academic Centre – Braga, Association.

The ICVS is a research structure fully incorporated within the EM, integrated in the national system of science since 2003 and ranked with “Excellent” by the FCT's international evaluation panels. The research activities in the ICVS are centralized in three multidisciplinary Research Domains: i) Microbiology and Infection; ii) Surgical Sciences and; iii) Neurosciences - which are supported by laboratorial core units. Additionally, two Pilot Research Lines on Community Health and on Education on Life and Health Sciences have been launched.

The distinctive aspects of the ICVS are: i) an integrated, flexible and collegial organization, aiming at high-quality scientific outputs; ii) the quality/differentiation of human resources, focused on a small number of topics with high critical mass; iii) the connection to health care institutions – namely through the Clinical Academic Centre – Braga, Association (2CA-Braga) - reflected in the clinical scope of its research and the training of physicians; iv) the interaction with research groups in the areas of technology, particularly within the context of the ICVS/3B's Associate Laboratory (AL).

The ICVS/3B's-PT Government Associate Laboratory

The ICVS/3B's AL was launched in 2011 to produce highly competitive research in the interface Health Sciences/Technologies, pursuing the goal of expanding the boundaries of current knowledge and developing translational activities on innovative prophylactic, diagnostic and therapeutic solutions.

The Clinical Academic Centre – Braga, Association (2CA-Braga)

The 2CA-Braga results from a partnership with the Grupo José de Mello Saúde/Braga Hospital and the Eurotrials, aiming at develop clinical research, including clinical trials in collaboration with international industrial partners. The 2CA-Braga combines a team of researchers, physicians and other health professionals, to which is associated a team of project managers, nurses and clinical trials coordinators/monitors, ensuring a professional management of the 2CA-Braga.

A detailed description of the ICVS activities and achievements during 2016 is reported in the *ICVS Annual Report 2016* (annex V). In this section of the EM report, we summarize below the main achievements attained in 2016.

ICVS Human Resources

In 2016, the ICVS kept actively involved in R&D activities a differentiated research team, pursuing a strategy of reinforcing the productivity of the body of PhD members. The total number of ICVS members is of 322, including 88 PhDs (41 EM Faculty, 3 Faculty from collaborating institutions, 14 Assistant Researchers and 30 Post-Docs) and 234 post-graduation students (132 PhD students, 53 Master students and 49 research assistants), supported by 24 non-academic staff (8 administrative and 16 specialized technicians, with salaries supported by the EM).

ICVS Financial Resources

As an important achievement, during 2016, the ICVS significantly increased the amounts of competitive funding from research grants, involving a total sum of about 16 million € in ongoing projects from calls at the international and national levels. Indeed, the level of funding obtained from competitive sources and from contracts with leading industrial partners has been reinforced, namely through 37 ongoing projects (16 from FCT; 4 from NORTE2020; 5 from other national sources; 2 from H2020; 7 from other international sources and 3 from contracts with the national industry).

To be highlighted in 2016, was the funding obtained from NORTE2020 for the establishment of a collaboration with the INL and the 3B's Group, through the grant "Projeto Estruturado / Fronthera", which corresponded to a total amount of 3.8 million €.

In 2016, industry-sponsored R&D has been performed in areas of mutual interest, namely with sponsors such as: TECNIMEDE; FUNDAÇÃO BIAL; BIOGEN and KARL STORZ.

ICVS Infrastructure

At the ICVS facilities, all the scientific equipment from the installed technological platform is shared amongst Research Domains. In addition, this equipment is also available under request to the other research units of the University of Minho and to the Portuguese scientific community in general. Specifically, the ICVS provides: fully operational Functional Cores for Animal Housing, Microscopy, Histology, Molecular Biology and Endoscopy/Minimally Invasive Surgery, and Shared Technical Facilities for Cytometry, Cell and Tissue Culture, Bio Banking, Electrophysiology and Biosafety Level 2 and 3. Some of this Functional Cores, such as histology, microscopy and animal housing also provide external services.

A critical achievement in 2016 corresponded to the operationalization of the “Biotério” animal facility, through the installation of equipment for laboratory animal maintenance and experimentation. Importantly, the first animal models were housed in the new facility since October 2016. In fact, the lack of an animal facility with the required capacity has been a major bottleneck for the ICVS in the past years and, therefore, this consisted of a major achievement.

In addition to the accomplishments reported above, regarding Financial Resources and Infrastructures, the following major achievements were also attained in 2016:

- Growth in the number of international publications.

During 2016, the ICVS significantly increased the number of publications in international peer-reviewed journals (referenced in ISI, Scopus or in Pubmed), in a total of 196 papers (from 172 in 2015), in addition to 7 international book chapters and 170 proceedings and communications in international congresses. Among the articles published in 2016, 178 were produced within the three research domains (Microbiology and Infection, Neurosciences and Surgical Sciences), corresponding to 79% in Q1-Q2, with 52% in Q1, with an average Impact Factor (IF) of 4.4. Additionally, the ICVS published 2 articles in the fields of Medical Education and Public Health, 11 in the fields of Community Health and 5 in other fields.

- Increase in the number and in the impact of the clinical studies developed in the 2CA-Braga.

The 2CA-Braga has developed clinical research with a growing impact, with 65 clinical trials ongoing in 2016, assuming a leading position in the National context, corresponding to around 37% of the clinical trials run in Portugal. Additionally, the 2CA-Braga developed 51 clinical studies, including research projects in partnership with the ICVS and other research institutions from the University

of Minho (with projects funded by the European Commission or nationally, by the FCT and FEDER), observational studies and validation of medical devices).

- Obtain 26 international and national scientific awards.

The international awards included: the Postdoctoral Fellowship Award, Society in Science - The Branco Weiss Fellowship 2016, Swiss Federal Institute of Technology, Germany; the Postdoctoral Fellowship Award, EMBO Long-term Research Fellow 2016, European Molecular Biology Organization; the 2016 NARSAD Young Investigator Grant, Brain and Behavior Research Foundation, USA; the ESCMID Research Grant 2016, Switzerland.

The national awards included the “Prémio Robalo Cordeiro SPP/Novartis 2016”, the Janssen Innovation Award 2016 and the “Medalhas de Honra L'Oréal Portugal para as Mulheres na Ciência”.

4. ARTICULATION WITH THE NATIONAL HEALTH SYSTEM

As detailed in previous reports, the EM has set up an innovative articulating strategy with the several institutions within (and beyond) the National Health System. The key element of the strategy is the multi-center approach based on inter-institutional partnerships within the legal framework concerning the articulation between the Medical Schools and the Health Services, a legal document (*Portaria 36/2002*). The EM is institutionally articulated, under the terms established by law, with the Regional Health Administration - North (ARS-N) and more specifically with *Hospital de Braga*, *Hospital Senhora da Oliveira (Guimarães)*, *Unidade Local de Saúde do Alto Minho (Viana do Castelo/Ponte de Lima)*, *Hospital Santa Maria Maior (Barcelos)*, *Hospital Privado de Braga*, *Hospital CUF Porto*, *Hospital da Arrábida*, *Casa de Saúde do Bom Jesus (Nogueiró – Braga)* and with Health Centres in the Northern Regions of Portugal.

Throughout the years, these partnerships have consolidated, in its multiple dimensions: i) pedagogical activities, through a high-standard and increasing involvement of health professionals in the EM; ii) research activities, as evidenced by the number of attending physicians engaged in academic and research activities and by the creation of Clinical Academic Centres; and iii) assistance care level, by the number of EM faculty members with dual affiliations with these health care institutions. Importantly, in a setting of consolidation it is to refer that the level of commitment with academic activities has persisted, despite the increasing number of editions of the medical degree. The renewal of the clinical staff involved in academic activities has also

progressed at a steady level and the quality of the clinical teaching continued to be recognized by students and physicians, and the presence of the students in the affiliated hospitals continues to be extremely well appreciated.

The coordination of this interplay by the Coordinating Committees (*“Comissões Mistas”*) has been very efficient. The Committees are appointed to decide on matters of relevance for the coordination of activities between the EM and the Health Services. The established Committees have adopted a Protocol that proved to be very efficient and became a central piece for the development of an efficient inter-institutional collaboration. This Protocol defines the model of cooperation (namely the Clerkship coordinating groups) in what concerns the clinical training of the medical students. These regulations cover the basic guidelines for the participation of the Health Services in the undergraduate clinical training, the competences and responsibilities of each of the participant institutions, and the term of office of the clinical supervisors and of the clinical tutors.

The Clinical Coordinating Groups, Supervisors, Tutors at Affiliated Hospitals and Health Centres are listed in Annex VI.

5. EM GOVERNING BODIES, SUBUNITS AND COORDINATING BOARDS

At present the main governing bodies, subunits and coordinating boards of the EM are as follows.

Governing bodies

- The School's Council
- The School Presidency (President and Vice-Presidents of the School)
- The Scientific Council
- The Pedagogical Council
- The Advisory Council of the School

Coordination boards

- The Course Committees for Master and Doctoral Programs
- The Coordination of Post-graduation

The School subunits

- The EM Scientific-Pedagogical Subunits: the Scientific Areas
- The EM Research Subunit: the Life and Health Sciences Research Institute

The competences and the present composition of these bodies and boards are presented in Annex VII.

6. HUMAN RESOURCES

Academic staff

As stated in former reports, the School is paying careful attention to the recruitment and promotion of academic staff. For that purpose, the EM has established its own benchmarks/recommendations for academic progression, which are known by all members of the faculty (and by those that express their interest in joining the faculty). It is important to assure that the selected candidates have an adequate understanding on the institutional project and commit to contribute to the development of its specificities, namely in what concerns seven essential aspects: (i) the perspective of the program, as a project to be constructed and developed in a participated way within the School; (ii) the student-centred learning process, in which the traditional formal lecturing loses most of its significance; (iii) the horizontal integration of the curricular contents and the modular organisation of the curriculum, with the consequent transfer of management competences from individual subjects to the coordinators of the curricular areas or modules; (iv) the relevance of students and peer assessment, permanent monitoring and quality assurance; (v) the role of the Medical Education Unit, in terms of support, coordination and monitoring of the educational objectives; (vi) the role of research, as a crucial element for a research-based learning process, and (vii) the engagement in research activities (including submission of the research projects to the strategic guidelines and priority areas defined for the ICVS).

The Medical Education Unit has established annual faculty development programs to target newly admitted staff and continued training for the existing staff. The program is based on workshops, supplemented with small team activities and informal discussions that create opportunities for addressing individual issues.

In the academic year 2016-2017, the School has a faculty of 91 members (42.25 Full Time Equivalent) of which 53 are PhDs. The faculty includes: 5 Full Professors, 11 Associate Professors, 6 Assistant Professors and 69 invited teachers (1 invited Full Professor, 4 invited Associate Professors, 27 Assistant Professors and 37 Invited Teaching Assistants). Additionally, the EM counts with 2 Permanent Invited Professors, 8 Visiting Scholars and many other collaborators particularly related to the Clinical Residences. The full composition of the regular teaching staff is listed in

Annex VIII, together with their qualifications, academic/hospital position and scientific area (for a matter of precision, the academic position is indicated in Portuguese). The Clinical Supervisors and Tutors who supported the clinical training of the students in the Hospitals and Health Centres during the academic year 2016-2017, in a total of around 600 clinicians, are listed in Annex VI. In terms of the faculty profile, it is important to highlight that 78% (71 out of 91) of the staff members are MDs.

Non-academic staff

Annex VIII presents the non-academic staff members, in a total of 37, and their qualifications, position and allocation. The academic profile of the staff is above the average situation in the Portuguese higher education system (73% of the staff have a higher education degree). It also deserves to be mentioned that part of the staff is allocated to the research institute, given that the ICVS cannot hire personnel; this represents a significant effort from the EM to guarantee the best possible conditions for the research activities in the ICVS and an important challenge for the future. The EM is proud to say that a great care has always been given to assure that every member of the non-academic staff can also undergo educational activities to improve their qualifications.

7. FINANCIAL RESOURCES

Since 2000, within a contractual program established with the University, an annual budget has been allocated to the EM to cover overall expenses (salaries, current expenses and equipment). The initial budget allocated to the School in 2016 was of 5.453 million Euros.

In the meanwhile, the EM and the ICVS continue fostering the strategy of increasing and diversifying additional sources of funding. As a result of this effort, a significant amount of external/competitive funding was obtained, particularly from the CCDR-N (Norte 2020) and international institutions and industries.

8. PLANS FOR 2017-2018

The project of the EM has been well established and progressing as planned. The major goal for the near future is to keep a permanent commitment to the benchmark of quality at the highest

international level. Thus, we pursue continuous improvement, seeking to assure the best conditions to reinforce the EM dynamism.

At the educational level we will reinforce our commitment to:

- maintain the educational quality of our programs and pursue the endeavour of adapting our activities to the changing landscape of Medicine (in particularly through the renewal process of Minho 2020);
- continue developing the best practices of medical assessment and apply for the recognition of excellence in Assessment of Students;
- prepare for the accreditation exercise of the Master program in Health Sciences to be promoted by the national Accreditation Agency (A3ES) in 2017-2018;
- reinforce the management structure for the pedagogic activities;
- reinforce the support to the longitudinal acquisition, training and assessment of clinical and laboratory skills, using well-established, but also innovative, methods and tools;
- further contribute to the structuring and organization of medical residence training program and clinical fellowships programs, as well as the development of new collaborations with our healthcare partners;
- continue the internationalization of the EM project, namely through the establishment of new partnerships with other prestigious institutions around the globe, participating in several international collaborative efforts;
- define strategies for the renewal of the FCT-PhD programs and to foster other sources of funding for the post-graduation programs;
- maintain the offer of high quality advanced training and certification in additional national and international agencies/medical associations.

The construction and consolidation of the EM pedagogical project will continue in parallel with the capacity of ICVS to perform internationally cutting-edge research. We will reinforce our commitment to:

- consolidate the newly created domain in Population Health and the pilot line on Education on Life and Health Sciences, in the context of the ICVS;
- explore new perspectives for the expansion of our research activities within the context of ICVS/3B's AL;

- continuing expanding clinical research through the 2CA-Braga, in collaboration with national and international industrial partners, particularly by setting up a phase-1 clinical trial infrastructure;
- develop the B-MedTech park to foster the interaction with the spin-offs in the perimeter of the EM/ICVS to create new products with potential impact in healthcare and in the creation of value.

The above plans, we believe, will have impact on the recruitment of the students/ researchers/ academics and also on more sustainable and diversified funding sources.

9. FINAL REMARKS

In summary, it is our belief that the core strategies and goals of the EM for 2016-2017 were successfully accomplished. The most prominent strengths continue to be: i) the quality of the training of medical students and the reported high standards of their performance in healthcare institutions as physicians; ii) the quality of the research activities on-going at ICVS within the ICVS/3B's AL; iii) the innovative post-graduation activities and iv) the recognition of the EM project in all its dimensions at the international level. Such strong points have translated into a very favourable teaching and research environment at the EM. The systematic monitoring of the project by a strong and informed leadership and by continuous external evaluation continues to be the premises needed to keep the EM on the right track.

Certainly the success of the EM project has only been possible by combining the appropriate mixture of competence, enthusiasm, commitment and team spirit. A strong word of praise and gratitude is due to all that have contributed to the EM project. For the future, we commit to pursue our mission with the same determination and enthusiasm.
