

# How do we Define a Medical School?

## Reflections on the occasion of the centennial of the Flexner Report

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## كيف لنا أن نعرف كلية الطب؟ انطباعات بمناسبة الذكرى المئوية لتقرير فلكنسر

هانس كارل

الملخص: مع مرور قرن لنشر تقرير فلكنسر عن التعليم الطبي في أمريكا الشمالية الذي كان بمثابة ثورة في منهجية تدريب الأطباء في كافة أنحاء العالم، أن الأوان لمراجعة ودراسة هذه الوثيقة المشهورة وتحليل علامات وأعراض ما يستجد الآن من عودة إلى أوضاع ما قبل فلكنسر. فمع ازدياد وانتشار الكليات والمؤسسات التعليمية الصغيرة ذات النوعية الرديئة خلال العقود الماضية والتي هدفها الربح المادي، فإن التعليم الطبي أصبح مهددا وفي وضع حرج. ولهذا الموضوع اهتمام عالمي واسع مع وجود هجرة متزايدة للأطباء. لهذا السبب فإن هناك حاجة ماسة لمناقشة ما يجب أن تكون عليه المعايير المقبولة والمطالب الأساسية لإنشاء مدارس طب حديثة.

مفتاح الكلمات: مدارس، طب، تعليم، طبي، طالب جامعي، تخصص، العولمة، نوعية.

**ABSTRACT:** A century after the Flexner Report on medical education in North America, which revolutionised the training of medical doctors all over the world, it is time to revisit this famous document and analyse symptoms and signs of a return to pre-Flexnerian conditions. With the ongoing mushroom growth over the last decades of small, proprietary educational institutions of low quality and driven by for-profit purposes, medical education is in a threatened position. This trend is of general international interest because of the increasing migration of medical doctors. There is a need for discussion of what should be the rational criteria and basic requirements for establishing new medical schools.

**Keywords:** Schools, medical; Education, medical, undergraduate; Privatization; Globalization; Quality.

IN 2010, THE INTERNATIONAL MEDICAL education constituency can celebrate the centennial of the Flexner Report *Medical Education in the United States and Canada - A Report to the Carnegie Foundation for the Advancement of Teaching*.<sup>1</sup> The reason to recall this important document is not only its tremendous influence on medical education all over the world at that time, but also because a revisit might inspire the identification of solutions to the problems of medical education in our own time, which by their nature and scale may be indicating a return to “pre-Flexnerian” conditions.

The process of globalisation of medicine and medical education, manifested by the increasing migration of medical doctors and the growth of cross-border education providers as prominent

indicators, has raised a wave of concern about how to safeguard the quality of medical schools. The debate emphasises the need for adequate criteria for what we expect from and require of medical schools/colleges/universities and their educational programmes.

In response to these challenges, it is the aim of this paper to outline the obstacles to the achievement of high quality medical education and to discuss what should be seen as fundamental principles for establishment of medical schools in the 21<sup>st</sup> century.

## Essentials of the Flexner Influence on Medical Education

Abraham Flexner was born 1859 within a family of German heritage in Kentucky, US, and graduated as a teacher from Johns Hopkins University at the age 19. He founded a private school in his home city in Kentucky, but became engaged in the study of medical education. He was inspired by the European University tradition as it had particularly developed in Germany and which had great influence on the teaching principles used at Johns Hopkins University.

In the beginning of the 20<sup>th</sup> Century, the existing 155 medical schools in North America showed great variance with respect to curricular principles, and some small “proprietary” schools, owned by one or a few doctors and operated on a for-profit basis, had no affiliation to a university or a college. Entrance requirements were low, and a medical degree was typically awarded after a few months-long didactic course of lectures; laboratory training, dissections and clinical work were not necessarily part of the study. The regulations and requirements set by their authorities were minimal or nearly non-existent.

There had been increasing awareness of these problems in the late 19<sup>th</sup> century; reforms were seen in some institutions such as the Harvard Medical School, and the medical school at Johns Hopkins University, established in 1893, became a model in the country. In 1904, the American Medical Association established a Council on Medical Education whose objective was to restructure medical education in the country. In 1908, the Council asked the Carnegie Foundation for the Advancement of Teaching to undertake a survey of American medical education, and Abraham Flexner was called to conduct the study. Flexner visited all 155 medical schools and prepared his revolutionary Report, which was a milestone in medical education in the US. It also had great influence on the education and training of doctors in Europe and other parts of the world, and is probably the most influential key debate document on medical education ever produced.

The main recommendations in the Report of 1910 dealt with the following issues: a) Admission of students: rigorous entrance requirements to a medical school were set up; at minimum, a high

school diploma and at least two years of college or university study, primarily with focus on basic sciences (biology, chemistry and physics), should be required; b) Scientific method: Flexner emphasised the need for adherence to scientific principles and evidence-based medicine. The scientific method of critical thinking and problem solving should be the key for physicians to manage clinical problems; c) Teaching staff: the faculty should be of adequate number, and the qualifications of teachers, including their engagement in research, should be evaluated carefully; d) Resources: sufficient resources were needed, and medical schools should be associated with universities; e) Clinical training facilities: clinical training should be ensured and clerkships controlled directly by the medical school; f) Research attainment: medical education should have a close relation to medical research, and exposure to laboratory work should be part of the training programme; g) Length of the medical education programme: the duration of the curriculum should be four years, divided into two years of basic science teaching followed by two years of clinical instruction; h) Medical pedagogy: Flexner underlined the value of small classes, personal attention, hands-on teaching and learning by doing, and thereby heralded the pedagogical innovations seen much later in the century. These basic requirements are still the fundamental model for the graduate curriculum for medicine used in the US and increasingly in other countries.

Flexner recommended that proprietary medical schools should either be closed or incorporated into existing universities, and his Report eventually led to closure of more than 50% of medical schools in the US. The logical consequence of the Report was the introduction of the principle of review and accreditation of medical schools, which has been in operation in the US since 1942, when the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC) jointly formed the Liaison Committee on Medical Education (LCME).<sup>2</sup>

Flexner became involved in development of other parts of higher education. As an influential member of the staff of the Rockefeller Foundation he channelled huge funds to medical schools. Later he became Director of the Institute for Advanced Studies at Princeton University, US, and was instrumental in recruiting Albert Einstein to this

institution in 1933.

## Return to Pre-Flexnerian Conditions?

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The 20<sup>th</sup> century saw a constantly growing number of medical schools in the world, explained not only by increases in population and wealth, as expressed by rises in gross national product (GNP) in many countries, but also by the increasing priority of health issues in connection with the development of medical sciences and services. Another factor was the foundation of national schools in former colonies as a consequence of the decolonisation process after the Second World War. Later in the century, the need for more doctors increased due to a changed gender pattern of, and stronger workload regulations for, the medical profession.

Concomitantly with the quantitative changes, a number of other trends were seen in the structure and organisational conditions of medical education. Most prominent has been the reintroduction of a proprietary for-profit concept and increased privatisation of higher education institutions, which have transformed higher education, including medical education, into a trade commodity, sometimes even systematised to provide doctors for bulk export. Finally, in many countries medical education has been dissociated from national medical manpower planning and to a high extent steered by cross-border providers.

Some of the new trends resemble conditions before the publication of the Flexner Report, and need more detailed comments.

### NUMBER AND SIZE OF MEDICAL SCHOOLS

Fair quality statistical information about numbers of medical schools in the world has been available from the middle of the 20<sup>th</sup> century with the appearance of the World Health Organization's (WHO) Directory of Medical Schools; the first edition was published in 1953<sup>3</sup> and the seventh in 2000.<sup>4</sup> From about 1953 to about 2000, the number of medical schools included increased from 566 to 1,642 or 2.9 times. In the same period, the world population increased from approximately 2.5 billion to approximately 6 billion or 2.4 times. Over the years, up-dating of information in subsequent editions of the Directory showed that the values presented in the database

underestimated the real number of schools by about 5%. The rate of increase in the number of schools over the last 50 years of the 20<sup>th</sup> century showed a slightly rising trend with about 20 new schools per year in the first half of the period compared with about 25 new schools per year in the second half.

A register of medical schools produced by the International Institute for Medical Education (IIME),<sup>5</sup> established by the China Medical Board of New York, showed 1,829 medical schools in 171 countries of the world in 2006; this database is not being updated. In 2009, The International Medical Education database (IMED),<sup>6</sup> produced by the Foundation for the Advancement of International Medical Education and Research (FAIMER), had 2,161 registered medical schools in 160 countries, but the database has the weakness that schools are sometimes registered more than once.

When the WHO database of 2000 with updates to 2007 was transferred and established as a new database (the Avicenna Directory of Medical Schools)<sup>7</sup> in Copenhagen in March 2008 (see later), the number of medical schools was 1,750. After that, further updating had, by February 2010, resulted in a total number of registered medical schools of 1,850 in 165 countries added to the database, and new schools are being added at an increasing rate.

Obviously, there is a need for better statistical information about the number of medical schools/colleges/universities, which are providing a basic or undergraduate medical education programme as a basis for obtaining a licence as a medical doctor. A fair estimate of the global situation, one hundred years after the Flexner Report, would be that approximately 2,000 medical schools are educating 1 million doctors per year, and feeding a total medical doctor population of approximately 6 million serving the global population of now 6.2 billion.

The increase in the number of medical schools has not necessarily resulted in a proportional increase in educational capacity. Data from the Avicenna Directories indicate a tendency towards the establishment of smaller institutions, sometimes with very low admission figures (5–50 students per year). On the other hand, the number of admissions per year has probably increased in many schools, at least in some countries. The estimated number of graduates per medical school varies around

the world: relatively low values of around 40–100 per annum in Sub-Saharan Africa with many new schools; increasing values of between 100–150 in Canada, Japan, the US, parts of South Asia, the middle East and Australia/New Zealand; about 200–250 in East Asia and the Pacific Region; and high values with averages about 330 and 510 in Western and Eastern Europe (Central and Eastern Europe/Commonwealth of Independent State countries) respectively.<sup>8</sup> Some Western European universities (e.g. in Austria, Belgium, Denmark, Germany, Spain and the UK) have a student intake of more than 500 per year, and intakes of 1,000–1,500 per year are seen in some institutions in, for instance, China, Egypt, Russia and South America.

There is no general consensus about the optimal number of medical schools in relation to the size of population, and figures for school/population ratio vary greatly. Globally, the average number of medical schools per million inhabitants is 0.30, but with clear regional differences: 0.15 in Africa, 0.22 in Asia, 0.54 in Europe, and about 0.60 in North and South America.<sup>9</sup> Some countries show extreme deviation from this pattern; in Africa, some big countries like Eritrea and Somalia have no medical school and Malawi and Zambia, both with more than 10 million people, have only one school each. Some small, but rich, countries like Iceland and Malta have a medical school for a population of less than half a million people. Completely out of proportion to the size of the population, high medical school/population ratios are found in countries in the Caribbean Region; the overall value is 1.42,<sup>10</sup> but the most extreme example is seen in Montserrat with 2 schools and a population of 10–20,000; this illustrates the mercantile trend in medical education discussed below.

#### PRIVATISATION, FOR-PROFIT PURPOSES AND ROLE AS TRADE COMMODITY

A clear indicator of a return to a situation akin to the time before the Flexner Report is the re-appearance of private proprietary medical schools in an increasing number of countries. There are driving forces other than the societal need for medical doctors behind the establishment of a new medical school. In addition to population developments in terms of size and geographical distribution, or any need for specific affiliations

due to ethnic, linguistic or religious factors, the explanations for the foundation of new medical schools are often political and personal ambitions and pressures, increasingly motivated by business purposes. This is simply an expression of a general trend, which has turned higher education into a trade commodity being regulated internationally more by trade organisations than by health and education authorities.

The difference between public and private is not always sharp. In some countries, private schools are still under strong governmental regulation, and some private schools obtain major official grants; on the other hand, some public schools are dependent on financial support from private sources such as companies or funding agencies. It is important to distinguish between privatisation and for-profit purposes. Some of the best medical schools in some countries have traditionally been established as a private enterprise.

There is high variation in the trend of privatisation in different parts of the world.<sup>11</sup> In India and the US, about 50% of all medical schools has a private basis. In Japan, more than 35% are private. Privatisation is also prominent in the Caribbean Region, the Gulf Cooperation Council countries, Malaysia, Pakistan, the Philippines and in the Oceanic Region, whereas it is still a rarity in Africa, Canada and Europe. Also in China, the government has full control.

A special example of the trade in medical education is that at least one country (Cuba) has deliberately expanded its medical education system for the export of medical doctors to South America, Africa and Eastern Europe in exchange for other commodities like oil.

#### CROSS-BORDER PROVIDERS AND DISSOCIATION FROM NATIONAL MANPOWER PLANNING

In close relationship to privatisation we also find a trend of cross-border provision of basic medical education. The so-called “offshore medical schools” model is increasingly contributing to the production of medical doctors. Some countries have always been dependent on the influx of doctors from abroad to cover their own medical manpower requirements. This is the problem behind the highly problematic brain drain phenomenon. But, in addition to doctors with a foreign nationality, we now see a systematic

recruitment to the profession of nationals with a diploma in medical education from institutions outside the country. The best example is the US, in which about 25% of the medical profession is international medical graduates (IMG), a majority of them with a US national background. This “off shore medical school” model is probably most prominent in the Caribbean Region which has dozens of medical education programmes, mainly for US nationals, based on a combination of education in the basic medical sciences in a medical school in the Caribbean Region and clinical training arrangements somewhere in the US. The owners and the administrations of the schools are frequently located in the US.

Ironically, the US is thus again becoming dependent on proprietary schools, very many of them being of doubtful quality, as in the time of the criticism made by Flexner, but now located in other countries. The resulting situation could be described thus: that due to Flexner’s influence, such high requirements were set for the establishment of a medical school that society could not afford the development of an educational capacity sufficient to cover all national needs, but, instead, society indirectly accepted lower quality education institutions.

Another aspect of cross-border education of doctors is that some of the well established and most prestigious medical schools in the world, especially located in US, UK and Australia, now, for business reasons, build satellite schools in other countries, e.g. in the Middle East or Asia.

## Problems with the Present Definition of Medical Schools

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The questions related to the numbers and size of medical schools, the increasing privatisation of educational institutions and the cross-border provision of medical education have a number of implications for the quality of basic medical education. The problems are to some extent interconnected.

Decisions to create medical schools without any connection to the national needs for doctors are problematic and might lead to either undersupply or overproduction of doctors. Fulfilment of national medical doctor manpower needs based on the

assumption of either attracting foreign doctors or on any kind of systematic cross-border education model is also difficult to justify and might sometimes be unethical.

In many countries, there has not been sufficient focus on the acceptable size of a medical school. There are potential problems with very big schools due to the risk of weak teacher/student interaction (of course again depending on the organisation of the school), less use of interactive student instruction methods, which may be too expensive, and insufficient capacity for clinical training. On the other hand, small schools can also create problems due to the ineffective use of limited resources, from low governmental support and/or low income from tuition fees, difficulties in the recruitment of qualified teachers, weak or non-existing research attainment, programme deficiencies as a result of missing medical disciplines, or sub-standard educational facilities and equipment. Data collection, made by the new Avicenna Directory of Medical Schools<sup>7</sup> show examples of educational institutions applying for inclusion in the Directory that have only a handful of students and teachers, some of whom might even have associations to other schools as well. It could be argued that such institutions should not be called medical schools.

The complex situation of privatisation and cross-border provision of medical schools implies specific risk factors. Some private enterprises, for instance established by religious or otherwise charitable organisations, have undoubtedly been valuable in supporting profitable management conditions and adequate access to resources; such schools might also provide valuable competition for the public schools and so assist in keeping quality high. However, in order to conduct a profitable business, introduction of this concept of privatisation mainly leads to the risk of low quality education. Privatisation has furthermore been a great financial burden on the student population, creating high levels of study debt and steering recruitment of students by favouring wealthy, but often less suitable students with lower intellectual or ethical capacities; it can also have a negative impact on the functioning of health care systems by not allowing access to the medical profession by underrepresented minority groups. Furthermore, it is a fact, that education programmes of private medical schools more often have insufficient capacity of clinical training settings

and very often no research background.

In 2005, following a joint collaboration process by the Organisation for Economic Co-operation and Development (OECD) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), Guidelines for Quality Provision in Cross-border Higher Education<sup>12,13</sup> were launched as an educational response to the General Agreement on Trade in Services (GATS) for Cross-border Education. The guidelines give an overview of the problems and important recommendations to the issue of cross-border higher education.

## Rational Criteria for the Foundation of Medical Schools in the 21<sup>st</sup> Century

A complete or merely comprehensive coverage of all elements relevant for the definition of a medical school is outside the scope of this discussion. It is not the intention here to deal with factors such as physical facilities and other resources necessary for an effective and quality based medical school programme, and only some general aspects of what should be the prerequisite and background for establishment of a medical school – as was the case in the Flexner Report – will be discussed.

### OWNERSHIP, ACCREDITATION SYSTEMS AND REGISTRATION

Although it would be totally unrealistic, and also unnecessary, to prevent medical schools being founded as private enterprises, the shift in the quantitative balance between public and private institutions over the last decades is alarming, and governmental authorities must demonstrate a greater interest in higher education, including the education and training of medical doctors. Also, regulatory authorities, including accreditation agencies, should have a stronger influence.

Presently, systems for proper accreditation or other types of recognition of medical schools are not sufficiently established in all countries; approximately one third of countries with medical schools do not have any quality assurance system. The concept of accreditation is not accepted everywhere and the term used around the world covers a variety of principles and practical methods. The greatest problem is that national systems for

recognition do not always cover all existing schools and very often exempt private institutions. In the future, legislation should ensure that private medical schools undergo the same controls as public schools using the same criteria and procedures for recognition.

The criteria for establishment of a medical school should look at the methods and means of recruitment and admission of students, and also consider the amount of tuition fees acceptable in order to ensure a balanced mix of students to cover societal needs and an adequate spectrum of medical manpower expertise. In recognising a medical school, it should be a prerequisite that the school admits nationals as well as foreign students, and that graduates of the school are formally allowed to seek a licence to practise as medical doctors in the country. Sometimes, new schools are seen as good tax-earners for the country, even when the quality of the product is not considered sufficiently high to allow practising in the country.

The global standards for the improvement of basic medical education, developed in 2003 by the World Federation for Medical Education (WFME) and broadly adopted internationally, offer a template for the formulation of national specifications when setting standards;<sup>14</sup> according to information available, these standards have now contributed to reforms in up to half of the world's medical schools. Also regarding accreditation of basic medical education institutions and programmes, guidelines were established jointly by the World Health Organisation (WHO) and WFME in 2005 to improve medical education.<sup>15</sup>

Proper accreditation of medical schools has some limitations and weaknesses. It is a complicated and expensive process both in terms of consumption of academic time and in direct costs. The process is also endangered by critical factors such as the following risks: 1) insufficient independence of accreditation councils in relationship to governments and providers of education; 2) assessors who lack the necessary objectivity and proficiency; 3) political pressure from outside and conflicts of interests; 4) problems with reliability of the information provided by the institutions and with selectivity in choice of demonstrations during site visits. Therefore, some countries prefer alternative means of quality assurance built on elements such as the procedures used in the selection of students; entrance

examinations; centrally regulated curricula, and national board examinations, etc.

There is a clear need for the promotion of internationally accepted quality assurance methods and recognition of medical schools and for easier access to obtain adequate information about medical schools. One step will be the new Avicenna Directory of Medical Schools,<sup>7</sup> established in 2007 according to an agreement between the WHO, the University of Copenhagen (Faculty of Health Sciences) and the WFME. The Directory has replaced the WHO World Directory of Medical Schools, and will provide more comprehensive information on schools and their programmes and be updated regularly. Such a register will allow a kind of international meta-recognition of medical schools and will help regulatory agencies, responsible for the licensing of doctors, in evaluating the educational background of foreign medical doctors. It will also allow research on medical education in relationship to demographic data.

#### NUMBER AND SIZE OF MEDICAL SCHOOLS

The relevant number of medical schools in a country, and the appropriate size of schools in terms of student admission and the annual number of graduates must be considered when governments are planning or recognising a new medical school. The motives behind the initiative and how quality will be measured must be considered.

The optimal number of schools in a specific country will depend not only on population size and the status of the health care system, but also on population density and need for coverage of rural as well as urban areas, and also the need for special ethnic and religious affiliations. There might therefore be reasons for deviations from a general consensus on the optimal value, which could be estimated to be around one medical school per 1.5–2 million inhabitants. Small countries wanting to have their own medical training would of course need special conditions.

Above, examples were given about the main problems related to small medical schools. Again, it can be difficult to define the optimal size of a medical school measured by the number of students or graduates, but a fair estimate would be 200–300 graduates per year within an acceptable range of 50–500.

#### PROGRAMME AND INSTRUCTIONAL METHODS

A medical school is an educational institution providing a complete or full programme leading to a basic medical qualification, that is, a qualification that permits the holder to obtain a licence to practise as a medical doctor or physician. The educational programme of a modern medical school must demonstrate its foundation on evidence-based “Westernised” medicine and scientific principles. Deviation from this can in some cases be accepted; an example is osteopathic schools in the US, which are recognised by health authorities as a basis for the achievement of a licence to practice as a medical doctor, whereas graduates in osteopathic medicine in many other countries are normally not eligible to function as medical practitioners. Also, schools of unorthodox, traditional or alternative medicine in China, for example, can be accepted when close curricular similarities with normal medical schools are ensured. However, the programme of the majority of schools providing unorthodox medicine will not be compatible with the function of a medical doctor. Programmes of schools having a strong religious affiliation must in principle be carefully scrutinised before recognition, as they might provide programmes with obvious deficiencies or aberrant views. Special programmes of medical schools, such as a paediatric track, can not automatically lead to authorisation to practise as a medical doctor.

In planning and reviewing its educational programme, the medical school must demonstrate social responsiveness — probably a more fair and valid expression than the “social accountability”, so often used by critics of medical schools — i.e. the awareness of and willingness to adapt to societal needs and expectations.

Regarding requirements for clinical training settings, restriction to the use of wards in tertiary university hospitals alone should not be accepted in the future, since health care activities relevant for the training of new doctors are more and more moving to other types of institutions and to ambulatory care facilities. Clinical training, which should comprise not less than 50% of the total programme, must include exposure to a broad spectrum of clinical experiences, including secondary and district hospitals, health care centres, general practice, etc. Emphasis should also be put on ambulatory health

care activities. The involvement of the full spectrum of the health care system in the educational process will require effective collaboration between the schools and their partners in the health sector and thorough supervision of decentralised functions by the faculties.

With respect to instructional methods, it should be recalled that the development in medical education pedagogic methodology over the last decades has brought many innovations, but not proved the significant superiority of any specific method. Organisation of the education process and choice of methods should thus allow considerable flexibility, taking into account tradition, academic experience, resources, etc. However, it must be ensured that teaching and learning is student-centred with adequate student-activating elements. The student group must also have influence on the programme.

The numbers of teachers and teacher/student ratios must be held within standards for modern medical education with some flexibility depending on the pedagogic methods in use, and the staff group must together be able to cover all relevant disciplines at a sufficiently high academic and scientific level.

#### RESEARCH ATTAINMENT AND UNIVERSITY AFFILIATION

The Flexner Report showed a strong commitment to the adherence of medical education to scientific principles, underlining the need for laboratories, research and evidence-based medicine. A consequence of this was the increase in resources needed for the establishment and maintenance of medical schools, which became an unaffordable requirement in many countries, especially in the poorer parts of the world, throughout the 20<sup>th</sup> century. The result was that many new medical schools have no research background for their education programme, whereas the older, well-established schools conduct research-based education, meaning that teachers also are competent and active in medical research and developments, so that students are directly exposed to and even directly engaged in research projects.

Again the situation varies around the world. In Europe, according to the requirements for basic medical training enumerated in the Directive on the Recognition of Professional Qualifications,<sup>16</sup>

graduates from medical schools must have “adequate knowledge of the sciences on which medicine is based and good understanding of the scientific methods including the principles of measuring biological functions, the evaluation of scientifically established facts and the analysis of data.” The WFME global standards in basic medical education<sup>14</sup> underline, that “the medical school must have a policy that fosters the relationship between research and education.” As a goal for quality development of the programme, it is added “that interaction between research and education activities should be reflected in the curriculum and influence current teaching, and should encourage and prepare students to engagements in medical research and development.” For Europe, the last recommendation is considered a basic standard.<sup>17</sup>

There are reasons to believe that research related competencies will increasingly be sought as a foundation for medical practice, and therefore research attainment should be a basic requirement for a medical school in the 21<sup>st</sup> century. This might potentially be part of a reform process of the health care sector, which would gradually diminish the number of medical doctors required with competencies in science and research, by transferring elementary health care activities to other cadres of health workers functioning under the supervision of physicians.<sup>18</sup> As a consequence of the need for research attainment, medical schools should normally be part of or otherwise affiliated to a university.

## Concluding Remarks

The Carnegie Foundation for the Advancement of Teaching, which helped transformation of medical education one hundred years ago, will in 2010 issue a new Report on Medical Education,<sup>19</sup> that will deal with standardisation of learning outcomes, promotion of multiple forms of integration and also focus on formation of the professional identity of physicians. Nevertheless, a revisit to the Flexner Report should be an obligation for medical schools and authorities with responsibility for medical education. This should not only be seen as a respectful homage to one of the most significant reformers of the discipline of medical education, but also as an inspiration to conduct analysis and necessary reforms of medical schools.

Although, there has been criticism and misunderstanding of Flexner and his goals<sup>20</sup> — for instance a postulation of not taking into account the importance of the doctor-patient relationship or in stimulating a non-flexible and overcrowded curriculum — there are good reasons to investigate if medical schools comply adequately with the original recommendations of Flexner, especially when plans for a new medical school are being discussed. In this process, governmental authorities should reconsider the situation of very small and inadequate educational institutions and the criteria in use to allow private initiatives in founding medical schools.

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