THE PRIME TIMES

THE PROGRAM FOR RESEARCH AND INNOVATION IN MEDICAL EDUCATION NEWSLETTER

AUB American University of Beirut Faculty of Medicine

AUBMC American University of Beirut Medical Center

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EDITORIAL NOTE

The fourth issue of the PRIME Times offers three viewpoints regarding current issues in medical education. Dr. Kamal Badr reflects on the challenges facing medical education in the near future and how they will impact the education of physicians, and proposes recommendations to meet these challenges. Ms. Hiba Ghandour, a third year medical student at AUBFM, offers her perspectives on the influence of an education in social medicine on the formation of medical students. Dr. Ramzi Sabra tackles the currently controversial topic of the traditional lecture and its place in the medical curriculum of the information age. In addition we present our usual corners: Resources for Medical Educators, Recent Interesting Research in Medical Education, and Curricular Developments, in which Dr. Mona Nabulsi describes the Impact Curriculum's longitudinal educational thread in evidence based medicine.

THE FUTURE OF MEDICAL EDUCATION

By Kamal F Badr, MD

Impending Principal Challenges to Medical Education

There are four narratives that currently dominate the future of medical education in the USA and, over time, globally:

I. The impact of Artificial Intelligence (AI) and big data informatics:

The invasive nature of AI into all aspects of healthcare will be profound and will lead to radical and unprecedented revisions of the entire edifice of medical education, starting with the undergraduate ("pre-med") curriculum and extending all the way to graduate education and practice.

A few examples of the changes already in progress or anticipated to be in place by the early 2030's at the latest: students will need to be thoroughly prepared and adept at handling electronic data bases, entering and manipulating data as dictated by the demands of systems such as EPIC and will be required to be facile in understanding and manipulating big data and in the wide and complex field of health informatics. This will require early and intensive training in these skills which will replace current (mostly irrelevant) offerings of the pre-med curriculum. Other knowledge and skill areas which will need to be introduced or emphasized further in the undergraduate curriculum include medical genetics, coding, medical humanities, and communication, leadership and group behavior skills.

https://www.linkedin.com/pulse/ai-healthcare-ecosystem-why-use-artificial-robert-h-eubanks

In addition to the pre-med curriculum, AI will render much of the current medical curriculum irrelevant. In particular, knowledge and skills related to diagnosis and even therapeutic decisions and options will be much more reliably and accurately provided by machines, focusing the role of the physician on the care and management which follow diagnosis and initial work-up. These will include a very heavy emphasis on the professional, humane, economic, and social determinants of illness and mastery of the individualized (personalized) approach to patient care. This will require a significantly deeper knowledge and facility in personalized patient encounter skills, namely: emotional intelligence, sharpened by a deeper study of medical humanities, narrative medicine and medical genetics, which will necessitate major new offerings in the undergraduate and MD curricula, and in the admission criteria and the profile of medical school applicants.

AI will not only change medical practice and research in a manner necessitating major curricular revisions, but will also eliminate or replace many of the currently employed teaching methodologies such as lectures and large group deliveries and will require of students and teachers to master a whole slew of novel technical and electronically-based skills, such as bed side imaging, remote data delivery, and simulation scenarios, which involve complex technical skills. These too will need to be learned early during medical training, quite possibly in the premedical years.

II. Implementing Experiential Inter-Professional Education:

The systems-based integration of care embedded in the EPIC-era care model is in line with the now-widely accepted concept that healthcare is no longer deliverable except in the context of team-based care. While medical schools have already adopted several learning approaches which enhance and develop students' skills at working in teams (such as the heavy use of PBL/TBL in preclinical modules, interdisciplinary bed-side rounds, as well as actual courses in IPE), these efforts remain far short of those needed to achieve the truly integrated team-based care practices of the future. The much greater role of team care in delivery of patient services will require fundamental changes in the medical, nursing, public health, nutrition, pharmacology/pharmacy curricula which again will necessitate the introduction of totally novel modules and rotations starting early in the training of future healthcare workers. Physicians, in particular, will need to learn early to adapt their so-far 'primary' role in the care plan to a team-based decision making process. In this domain, there is an emerging intensive role for simulation-based scenarios to involve all members of the care team in delivering IPE early and late in the training continuum.

III. Student/trainee-centered promotion metrics and graduation pathways.

Failure of currently employed assessment systems to provide sufficient guarantee of the reliability and competence of medical graduates educated in the traditional cohort-based promotion models, has led to the adoption of personalized competencies as the requirements for graduation, rather than simply completion of four years of training. These competencies have been formalized into specific milestones which have been further refined to Entrustable Professional Activities (EPAs). EPAs are increasingly being adopted as the true measure of a person's eligibility to graduate from medical school, as well as from sub-specialty residency and fellowship training programs. Milestones and EPAs as well as the professionalism record of a trainee are now part of personalized longitudinal portfolios which constitute the most valid record of student and trainee progress and have largely replaced the traditional 'grading' system as criteria for promotion, need for remedial work, or recognition of excellence.

Creation and adoption of such systems, whereby individual students/trainees are followed by faculty mentors longitudinally over the years of matriculation has presented a major challenge to human resource allocation and faculty time allotment. Personalized training is a highly labor-intensive proposition which requires faculty to themselves be properly trained to undertake such responsibilities, and, equally importantly, to allocate the time and effort to perform these tasks, as well as others in medical education, in a professionally acceptable, fair, consistent, and high quality manner.

IV. Reducing the Years of Training:

The increasing cost of medical education and the heavy debts incurred by medical graduates, as well as the workforce demands in the US and globally has led to the emergence of a trend to shorten the overall training of MDs from the current model in which students spend 10 to 18 years past high school before embarking on a productive professional life, by which time most are in their mid to late thirties. Coupled to the heavy debts accompanying this process, the outcome has been an increased sense of dissatisfaction among practicing

and aspiring physicians, coupled to alarmingly high rates of stress, burn-out, depression, and suicides among medical students, trainees and practitioners.

The emerging trend is for very early focused training on the novel and essential knowledge and skills required for good doctoring (see above) and the attainment of professional competence and entrustability at an individual personalized pace and over a shorter period of time.

In view of the above, I present the following recommendations for academic medical school leaderships to consider, the objective of which is to ensure that our medical schools will continue to sustain world class medical education programs, and the permanent presence in the ranks of medical school faculty of a cohort of medical educators who will deliver and develop a dynamic curriculum to meet the expected ever-increasing demands and adaptations imposed by AI, IPE, personalized learning, EPAs, etc. and conduct research into newer and more locally applicable and relevant models of medical education.

Recommendation One: Radically re-designing health training curricula.
This recommendation targets the long-term, and is aimed at leading global innovations in medical education. The redesign shall include the pre-medicine curriculum, and the curricula of future nurses, pharmacists, nutritionists, public health workers, and other members of healthcare delivery teams of the future, to address the four challenges described above. It may start by focusing on the premedical and medical curricula. This will involve extensive dialogue and consultation with AAMC, and other US and European bodies concerned with health care training and education, as well as in-depth assessment of current and future resources which will be needed to embrace the coming changes. It must conclude in proposing a new curriculum that meets the challenges of the inevitable transformations in healthcare education.

Recommendation Two: Supporting the creation of Departments of Medical Education across medical schools globally.

The four major emerging challenges to medical education detailed above, as well as other expected and unexpected ones, coupled to the requirements for productivity in clinical service delivery and research, has presented a major challenge to the teaching faculty at all academic health centers, principally in the availability of dedicated faculty who can and desire to commit the labor-intensive efforts required to deliver and innovate as superior medical educators.

To deal with this challenge, most major US faculties of medicine have adopted a system whereby a subgroup of faculty, selected based on interest as well as skills and attitudes, have been designated as a special cohort (track) of core teaching faculty and given various designations and names, such as “Core Teaching Faculty”, members of “Teaching Academies”, “Master Teachers”, “Master Clinical Teachers”, etc.

These faculty often form the core of a Department of Medical Education, in which they may hold full or part-time appointments, thereby assigning teaching as a major pathway of their promotion and retention in the ranks of the faculty. In other institutions, these faculty are not members of a medical education department, but are given a special track for promotion within their respective departments which is truly focused on their teaching contributions and not on research. At times, they may be even eligible for tenure in cases of a distinguished career and major internationally recognized achievements in medical education.

I therefore propose the creation of Departments of Medical Education across medical schools in the USA and globally.

Departments of Medical Education (DME) are academic units the principal mission of which is service and research in medical education. At all universities, the “Department” remains the academic home within which promotion and academic advancement are made. To provide faculty who desire to be outstanding in Education with the optimal incentive to do so, our most effective and long-lasting strategy is to create academic departments of medical education to protect the teaching mission. The Department will also centralize the various educational functions of the Faculty in one academic unit, to ensure proper and effective coordination between these interconnected entities and better promote research in education. These include Educational Programs, Educational Research and Innovation, Faculty Development in Education, Educational Career and Professional Development (CME), Clinical Skills and Simulation, Admission Policies, and Accreditation.

RECENT INTERESTING RESEARCH

Electronic Health Records – the Threat of Copy-Paste

March CA, Scholl G, Dversdal RK, Richards M, Wilson LM, Mohan V, Gold JA. Use of electronic health record simulation to understand the accuracy of intern progress notes. JGME May 1, 2016, p237-239.

Using a simulated electronic health record (HER), as part of training on EPIC, 32 medicine interns at one US academic medical center were asked to write a progress note about a patient with pneumococcal pneumonia hospitalized for 5 days. The EHR contained 5 days of clinical information and a prior discharge summary, and the case included specific patient safety issues that needed to be identified. The authors then examined the progress notes with particular attention to use of data importation tools (macros) copy-paste (i.e. reproduction of an entire section of the plan without modification) and recognition of safety issues. There was wide variation in the process of generating a progress note, in the mode and content of documentation, and in the amount and quality of data imported. The content of the assessment and plan sections of the notes varied widely: almost half contained copy-paste information; 68% completely omitted important information (e.g. drugs being used, results of important lab tests…), and many eliminated active issues from the problem list. This led to significant errors: for example, some of the safety issues that were missed included failure to prescribe heparin for prophylaxis of DVT, failure to recognize a low TSH value, and, directly relevant to the case, 45% of the notes failed to recognize that the patient's organism was resistant to the prescribed antibiotic. While this may not be entirely the result of the use of EHR per se, one should be aware that these errors, which have certainly existed before, may be facilitated by EHR and the copy-paste options available. The fact that modern day students and interns are digitally savvy does not obviate the need for proper training in the use of EHR (having in mind the above risks) and with particular emphasis on patient safety.

TO LECTURE OR NOT TO LECTURE…

By Ramzi Sabra, MD, MHPE

Efforts to develop critical thinking falter in practice because too many professors still lecture to passive audiences instead of challenging students to apply what they have learned to new questions.
Derek Bok, Former President of Harvard University

A lecture is much more of a dialogue than many of you probably realize.
George Wald, Nobel Prize Laureate in Physiology

The question of the value of lectures in higher education, particularly in medical education, has recently come to the fore, as medical schools continue to move away from lecture-based instruction to other forms of learning such as flipped classrooms. This question found its most extreme response in the recent announcement by the University of Vermont (in 2016) that over the next few years it would remove all lecture courses from the curriculum and replace them with videos that students would watch on their own. Classroom time, from now on, would be devoted to active learning sessions, with students working in small groups, facilitated by a faculty member.

Is this a pedagogically sound development or is it a passing fad? The value of active learning approaches notwithstanding, is the lecture, per se, an effective means of education? Unfortunately, the debate is hardly ever truly satisfactory in that critics of lectures frequently focus on their worst aspects, while advocates of lecturing frequently portray the ideal lecture.

In this article, we examine the opposing viewpoints and offer a way forward for AUBFM.

In Praise of Lectures

Lectures remain the dominant form of teaching in universities, having at least 800 years' worth of legitimacy, ever since the first university was founded. Certainly, they are an efficient (but maybe not necessarily effective) mode of conveying knowledge to students. This approach to teaching and learning is consistent with an

objectivist epistemology, which posits that knowledge has its own existence, is independent of the knower, and is discoverable through reason, neutrality and objectivity; thus it can be transmitted from the knower to the novice. An ideal lecture, supposedly, is not only about facts; it also entails a world-view, with all the beliefs, attitudes and practices within a discipline. Lecturers share stories about scientists and their discoveries, physicians and their approaches, pose problems and their solution, draw on their wisdom and experience, all so that students get the whole picture, not only the facts; this contributes to their knowledge of the discipline and their growth as physicians and people.

Lectures allow students to be exposed to important information in an organized manner. Although this information is available on the Web, in books, and in libraries, it is frequently chaotic, and it is quite overwhelming; a novice cannot sift through it, evaluate it and figure out what is relevant. Moreover, in some cases there is conflicting information, and it is difficult for the student to decipher what is TRUE and what is important.

Further arguments in favor of lecturing point out that for the vast majority of its existence, for tens of thousands of years, humankind has learnt through the aural tradition - people talking and listening to each other, and mostly as a social activity, rarely alone. Literacy and solitude, in contrast, are recent cultural developments: printed media is only 500 years old, and widely available electronic media but a few decades. Lectures, thus, continue this learning tradition, which is in tune with human nature. A lecture is a social event and a relationship between teacher and students and among students, where questioning and debate can occur. Students learn not only by memorizing content but also by noting the pauses, hesitations, emphases, intonation, emotions and other nonverbal phenomena expressed by the teacher. The teachers can present opposing views on a matter, and can also assess the students' responses and adjust their delivery accordingly; they can emphasize areas that previous students found difficult to grasp. All of this is not possible by reading a book in solitude. Some even argue that simply by obliging students to be present together and ready to listen puts them in a psychological state conducive to learning - a learning mode.

Thus, the idea that a lecture is simply a transmission of information from one person to another, which can be replicated by reading a book, or someone else's lecture notes, or watching a video, is an oversimplification. The portrayal of a lecture as a totally passive experience for students is also an oversimplification: if the students engage with the lecturer, take their own intelligent notes, perceive the associations made by the teacher or even make their own, respond to the questions raised or the dilemmas posed by the teacher, then this is a form of active, not passive, learning.

A Critique of Lectures

Critics respond initially by asking: "how many lectures are actually like that?" Students, at AUBFM and in the USA, would argue that it is the minority, and that there are few exceptionally gifted lecturers that make coming to class worthwhile. Most lecturers simply transmit information, and a common complaint of students is that the lecturers are basically "reading the slides"; the students are turned off and are largely passive, and the lecture becomes a method in which "words pass from the lips of the instructor to the notebook of the student without going through the heads of either", as the cynical saying goes.

14th century image of a university lecture - same then as now: a few students are attentive, and the rest are conversing, daydreaming, sleeping... (http://historylearning.com/medieval-england/medieval-studies/)

Critics of lecturing usually base their negative view on two main premises:

1) that lectures are outdated forms of transmitting information, and more substantially,
2) that true learning and deep understanding require much more than reception of transmitted information.

1- **Lectures are outdated forms of transmitting information:** the modern day lecture arose in the middle ages, and continued for several centuries as the main form of instruction, at a time when access to books and knowledge in general was the privilege of a few. The only way of acquiring knowledge was to listen to those few experts telling the students what they knew or reading from the books, and having the latter take notes, thus creating their own books. In the modern age of the World Wide Web, proliferation of books and media, and easy accessibility to information, the lecture as a form of transmitting information is obsolete. Why should a student have to listen to a lecture in uncomfortable settings, by frequently uninspiring lecturers, going at their own arbitrary pace that may not match the student's, and essentially reading their slides, when s/he can acquire that knowledge at his/her own pace and under the most favorable conditions? Rather, what the professor needs to do is facilitate student learning by providing the right resources such as handouts, selections from books, recorded videos, Powerpoint presentations, etc., and then ensure that students have truly learned through interactive sessions. Millennial students, having grown up familiar with technology, and who acquire knowledge from visually appealing content that is presented in short segments, are believed to be especially averse to lectures.

2- **The fallacy of the concepts of teaching and learning as being transmission and reception of information.** The idea that learning happens when teachers transmit information directly to students and that students store this transmitted information and remember it later is false. This is learning by passive diffusion of information from areas of high concentration to low concentration, which is why many lecturers load their lectures with as much information as possible to maintain the high gradient. In this approach, teachers talk and students listen; if the teachers prepare well and are clear and organized, and if the students are motivated and attentive, then learning will happen. If the students do not learn, it is their fault - they are either not interested or not paying attention. In this context, how often have we, teachers, been perplexed by the fact that so many students incorrectly answered a question on a test that we explained so well in class?

Med II students (Class of 2020) learn through interactive and problem-solving methods at AUBFM.

To explain this, one should consider a different conception of learning; that students do not only receive and store information, but that they interpret information and then construct knowledge. This "constructivist" theory renders the relationship between teaching and learning much more complex than objectivists would wish to assume. Good teaching does not necessarily translate into effective learning. In fact, the focus must shift from the teacher lecturing well to the student achieving and demonstrating deep learning. Students have to apply the information they receive so that they can fully understand it and remember it. This construction of memory results in reinforcement and stabilization of the knowledge, results in deep learning, and allows transfer of that knowledge to new situations or problems – which is the ultimate aim of learning. Lectures very rarely allow that to happen, and critics of lectures advocate replacing them with active learning sessions, e.g. flipped classrooms, where students acquire information on their own (through recorded lectures, assigned readings, videos... and with clear learning objectives) and then come to class to apply that knowledge with the guidance of a faculty member. In addition to engendering deep learning, this, they add, is more efficient and effective use of valuable faculty time (particularly clinical faculty) which is becoming scarcer nowadays.

Conclusion

Both the objectivist and constructivist approaches can be taken to extremes. The University of Vermont seems to have adopted such an extreme position against use of lectures. These theories of learning, however, may not be mutually exclusive, but may rather exist on a continuum, or may represent partial truths about the very complex learning process in human beings. Students need opportunities to learn in multiple ways, and teachers need to have a range of approaches that draw from different learning theories. Nevertheless, it is becoming evident that while traditional lectures may have a value in providing a knowledge base to some students, they

are less important than other approaches in producing deep understanding and transfer in most students. Deep understanding transforms factual material into usable knowledge. Certainly, lectures should not have primacy in the curricular development process; what lectures remain should not be traditional one-way communication of factual information, but should strive to incorporate active learning approaches. In essence, lectures should inspire rather than inform: they should make connections, demonstrate relevance, emphasize concepts and principles, apply knowledge and reveal exciting truths, and stimulate students to pursue further learning.

AUBFM, through the Impact Curriculum, has significantly reduced the number of lectures and increased the number of active learning sessions in the first two years of medical school relative to the previous curriculum. Nevertheless, lectures remain over-represented in the curriculum, and students have voiced discontent and a preference for more interactive and active learning approaches. Moreover, lectures are also increasingly used in the clinical years, where learning ought to be work-based and patient-based. We look forward to further curricular reform that will reconsider the place and the nature of lectures in our curriculum, and that will provide more active and patient-based opportunities for learning.

CURRICULAR DEVELOPMENTS: TEACHING OF EVIDENCE-BASED MEDICINE IN THE IMPACT CURRICULUM

By Mona Nabulsi, MD, MS.

Evidence-Based Medicine (EBM) is "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients".[1] Evidence-based practice (EBP) is associated with reduction in medical errors, promotion of individualized care and increased application of best practices.[2,3] Moreover, EBP improves physicians' performance and patients' outcomes.[4-5] EBP requires physicians to be trained in the skills of EBM. Hence, early introduction of EBM in the undergraduate medical curriculum will facilitate the development of necessary professional competencies such as self-directed learning.[6-7]

http://libguides.library.ohiou.edu/evidence

The recently implemented medical curriculum (the Impact Curriculum) at AUB's Faculty of Medicine included EBM as one of its six competencies, under "Physician as Scientist" competency. In this curriculum, the teaching of EBM starts early in first year of medical school and continues vertically until graduation at the end of the fourth year. We believe that early and longitudinal EBM teaching of undergraduate medical students would enhance their adoption of evidence-based practice early on in their careers and sustain it thereafter.

Currently, a team of core faculty* from different departments is responsible for teaching EBM in preclinical and clinical years. In the first year, students are taught how to formulate clinical questions and search the databases, using different teaching formats such as didactic lectures for large classes and medium-sized groups (15-20 students), supplemented with small-group exercises. In second year, students are taught critical appraisal skills in medium-sized groups in case-discussions, as well as team-based learning (TBL) sessions. Critical appraisal and TBL sessions are integrated within all organ-system modules of both pre-clinical years, such that the papers selected for case discussions are chosen to be in harmony with the themes of the organ-system modules.

When the students transition to the clinical years, they are trained on how to transfer their theoretical EBM skills into clinical practice. This is done during an activity called EBM round. EBM rounds are conducted in the Surgery and Pediatrics clerkships in third year and in the Internal Medicine and Pediatrics clerkships in fourth year. Each student presents a real patient that he/she has seen during the clerkship, and from which he/she identified a knowledge gap, generated a clinical question using the PICO format, searched the literature for evidence, appraised the evidence critically and discussed evidence application to the patient. In the fourth year, students are expected to critically discuss diagnostic or therapeutic decisions made on their patients taking into consideration the available highest level and up-to-date evidence.

In May 2017, the first class of the Impact Curriculum graduated with theoretical and practical instruction in EBM that would allow them to be evidence-based practitioners and life-long independent learners. Advancing the teaching and implementation of EBM to include all clinical clerkships will further consolidate the acquired knowledge and skills of AUB medical graduates who will be the future Physicians Scientists.

*EBM faculty: Drs. Ahmad Al-Yazbi, Marlene Chakhtoura, Deborah Mukherji, Mona Nabulsi, Marwan Rifaat, Eman Sbeity.

RESOURCES FOR MEDICAL EDUCATORS

MedEdWorld (https://www.mededworld.org/Home.aspx): "an international health professions community of individuals and educational organizations whose purpose is the sharing of information, ideas, experience and expertise".

MedEdWorld is a product of AMEE - the Association for Medical Education in Europe - that offers people interested in medical education the chance to be informed about latest developments and activities, learn from experts and like-minded colleagues, network and debate issues. The site provides information about conferences, courses, job opportunities, recommended publications and educational resources to support your teaching. You can develop your own profile, receive relevant updates based on your interests, and join forums or special interest groups. In addition, a series of spring and autumn MedEdWorld Webinars are interactive presentations on topics of interest to education and health professionals.

THE CANVAS AND FRAME OF MEDICINE

By Hiba Ghandour, BS, Class of 2019

"It is more important to know what sort of person has a disease than to know what sort of disease a person has." - *Hippocrates*

So, do doctors need to know everything?

Okay, maybe they do not need to understand the stock market, but it is beyond pivotal that they understand the story behind their patients' diseases. And like any story in this world, the patient's economic capability and social background are huge influencers to their quality of life. The stepping stone to this skill is embodied in social medicine: the art of understanding the social and economic factors that influence a society's health -which is a matter of public concern- in addition to fostering conditions that aid in metamorphosing to a healthier society.

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Now, what populations does social medicine focus on?

Social medicine attempts to take into account everyone: the rich and the poor, the vulnerable refugees and migrant workers, the locals, victims of abuse (regardless of gender), the LGBTQ+ population - in fact, the entirety of society.

But how is this relevant to medical students?

As doctors it is our job to be benevolent. After all, we swore to uphold the Hippocratic Oath. That entails knowing our patients as individual human beings, and not just the diseases they have, the medications they are on or what findings they have on physical exam, for that is just a small part. What matters even more is for us to know our patients' life stories: who they are, what they do for a living, where they reside, where they come from, etc.; and to know our patient's story, we need to know our society's story.

Knowing a society and its different classes helps a physician -or future physician- become a better diagnostician. By knowing the epidemiology of diseases (i.e. their location, prevalence, which age group, sex and race they tend to affect...), curing disease on both a micro and macro level becomes easier. Knowing which policies in the World Health Organization -or any IGO for that matter- have been passed and adopted is essential, because this will empower physicians with the knowledge as to which policies still need to be drafted, and thus, which policies still require advocacy from the health sector.

After all, physicians have not only the ability to cure patients that walk into their clinic, they have the ability to cure a nation. Whether one prefers to practice the former or the latter, or even both, one needs to go through the process of learning what lies beyond the medical sciences. The biomedical sciences will provide the basis and entry point into the field of healing: it is the canvas. However, establishing a professional identity and answering the question: "what kind of physician do I want to be" - which every medical student asks themselves almost every day - require much more than knowing the biology of medicine. Thus, one must be exposed to the various routes that medicine opens doors to, including policy, advocacy and social medicine. This provides the essential frame that completes and enriches the canvas.

The canvas and frame of medicine

This need for exposure is multiplied several times in the society we live in, where we still face the issue of inequality, and where access to health is not widespread. Our reliance on the medical curriculum thus increases as well, to better equip tomorrow's doctors with the knowledge they need to help reform our society to a healthier one.

For us millennials, career options after medicine are almost limitless, and regardless of our choice, knowledge of social medicine has become part of the essential. One cannot become a physician –a healer- without the full picture social medicine offers. It is as if one hangs a canvas without a frame.

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PROGRAM FOR RESEARCH AND INNOVATION IN MEDICAL EDUCATION

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