Conference on Medical Training

What kind of doctor do we want for the future?

Online Event Summary Report

18 March 2021

Contents of the Report

The overall discussion focused on how to best train the doctors of the future: how to harmonise the medical training received by doctors in various countries; the importance of so-called "soft skills" such as empathy and communications skills; the mental health of doctors and medical students; how to integrate digital technology into medical training, and the importance of collaboration between medical practitioners and researchers.

- Harmonisation of doctoral training and a potential EU-wide common curriculum was one of the main discussion points. All the doctors agreed that harmonisation was needed – at least to a certain level. The idea of a basic medical degree as a type of "driver's license" was tabled. A common EU curriculum would further simplify the transition of medical students from classroom to hospital.

- The theme of the need for empathy and the importance of communications training came up regularly in the discussion. The doctors spoke about the need for training to enable trainee doctors to handle complex conversations with patients about their health, and how the patient should be seen as a whole person rather than a collection of symptoms.

- During the pandemic, the toll on the mental health of doctors and medical students became particularly clear. The European Medical Students' Association conducted a survey on the mental health of students, the results of which were distressing. Medical students were often on the frontlines of the pandemic – for some their first experiences in hospital practice were during the pandemic. Healthcare staff were often unable to return to their own homes for fear of bringing COVID-19 with them, meaning that often, important support networks were not available to them.

- Digitalisation and new technologies will be a crucial part of medical education going forwards. The shift to digital teaching and online lectures as a result of the pandemic was discussed, and some universities were quicker to adapt to the "new normal" than others. The pivotal role of new scientific breakthroughs, especially in molecular medicine, were highlighted as changing medicine significantly. New technologies are being developed with artificial intelligence and smart medical sensors, including wearable health devices, could help revolutionise the way we live. Students will need to be trained on how to use these new devices and how to engage with researchers to develop new technologies.

- Medical students should be taught not only about clinical medicine, but also about the medical research field. They should understand how they can contribute to medical research and how important their "observations" of patients can be. Clinicians should be encouraged to work with engineers and innovators to develop new, improved technologies to help advance medicine.

Introduction:

Prof. Maria do Céu Machado, Vice-president of FEAM and Professor of Paediatrics at the Faculty of Medicine of the University of Lisbon, welcomed the audience and introduced both *Prof. George Griffin, the President of FEAM*, and the keynote speaker, *Manuel Heitor, Portuguese Minister of Science, Technology and Higher Education*.

Heitor spoke about the overall higher education goals of the Portuguese Presidency of the Council of the European Union and Europe at large.

"We know that science-based education and the close relation between healthcare and scientific developments and scientific education are certainly the way to move forward," he said. He celebrated the fact that Europe had achieved its 2020 target for participation in higher education – 40% of all those currently aged between 30 and 34 years old have a higher education degree – but stressed that it is not enough. The target for Europe by 2030 is to have half of all the population between 30 and 34 years old with a higher education degree.

Looking to the future, Heitor could see four main challenges for medical higher education: (1) enrolment: "the attraction of medical education varies a lot across Europe. We need to increase the enrolments in medical education,"; (2) the need for specialisation and diversification; (3) increased employability of higher education graduates and forging links between researchers and the world of innovation; (4) and finally internationalisation and the need for mobility programmes like Erasmus.

The changing face of medicine in the next 10 years

Professor Fausto Pinto, the Dean of the Faculty of Medicine of the University of Lisbon, spoke then about how medicine will change in the next decade. "The world is moving so fast," he began, "and we are facing different challenges. It's the way that we will be able to face those challenges that will impact the future."

He gave an overview firstly of the main healthcare challenges today – cardiovascular disease as the number one killer in the world, an ageing society, and how over 70% of the population in many countries is either overweight or obese.

In light of current medical knowledge, he said, one death out of three in the EU could have been avoided, and that is why we need to tackle risk factors for non-communicable diseases in particular, such as smoking. "If we look at what makes us healthy, about 50% is related to our healthy behaviours," *Prof. Pinto* said. But when it comes to public spending, only about 4% is spent on healthy behaviours.

Prof. Pinto then moved on to the innovative technologies that are changing the face of medicine. The future of medicine will involve artificial intelligence, precision medicine, gene editing, 3D printing, smart devices and more, he said.

He stressed that a high-quality medical education is needed to inform the development of these disruptive technologies and new approaches.

"Artificial intelligence is a buzz word but it has a lot of implications, and in medicine it is certainly one area that needs to be used more." He recommends getting doctors involved in the early stages of development of new AI technologies, and stated that engineers should be speaking to medical experts from the very beginning.

Patients are becoming more empowered and more involved in their treatment in the future thanks to widespread promotion of health, digital health, wearable health-monitoring devices and potentially the advent of smart homes.

"There's been an explosion in digital health, and wearable health devices," he said. "A smart medical home would contain all sorts of information about people living in the house – biomarkers, biological parameters, different types of information that can help and can improve the way that we live, not just from a medical perspective."

There was a huge expansion in the use of telemedicine and telehealth – i.e. healthcare delivered at a distance – during the pandemic. There was almost a threefold increase in the use of telehealth during the pandemic, particularly for the older population. "Telemedicine is here to stay," he said.

The integration of academic medicine in medical practice

Prof. Stefan Constantinescu, Professor of Molecular and Cell Biology at the Université Catholique de Louvain, presented his vision as a researcher of how academic medicine can be integrated into medical practice. He started by outlining the differences between academic medicine, research medicine and clinical practice, and stated that, "in an ideal world, the same person should bring back to the research lab interesting and useful medical information."

However, *Prof. Constantinescu* highlighted that that was a kind of "utopia" which was nearly impossible to achieve. Rather, he said, excellent researchers should collaborate with excellent practitioners, with the practitioners informing the researchers about various observations that they have made and the researchers then investigating the reasons behind these observations.

"The mindset of a researcher and a clinician are not the same," he said. "For basic research, a successful project is to solve a problem. That is different to clinical practice, where we cannot always solve a problem."

He outlined three main questions to be answered:

1. Does academic medicine impact medical practice?
2. Is the teaching part sufficient for academic value?
3. Is teaching medicine independent of research?

For the first question, he answered yes, but for the second two, no.

Prof. Constantinescu was of the opinion that medical students should not only be taught how to interpret research papers and results, but also on how to advance research. Writing down observations and communicating those observations to researchers is vital, he says.

The strides in bioinformatics and genetics in recent years are bringing academic research and clinical medicine closer together. "Because most diseases have precise molecular causes, most will have markers. Medical practice becomes less of a mystery and more of an open book."

According to *Prof. Constantinescu*, patients will also generally be more aware of clinical trials and the latest medical research, and will play a stronger role in their own diagnosis and treatment.

At the end of his talk, *Prof. Constantinescu* wondered whether the current freedom-of-movement for MDs between European Union countries (EU MDs are free to practice in any other EU country) is reasonable.

"Is the training similar? Is it OK for MDs but not for specialties? I'm sceptical," he says. "Although we know that it involves complicated negotiations, I think we will need to set some standards that everyone has to respect, at least in the European Union."

Open discussion: "What kind of doctor do we want for the future?"
Opening words from the President of the Panel: Professor Manuel Sobrinho-Simões

"It's important for us to reflect on how we should teach the medical students," said *Prof. Sobrinho-Simões*, who is an Emeritus Professor of Pathology in Porto Medical Faculty and Director of the IPATIMUP.

He stressed the point that there is a need for a common understanding, confidence and competence. Medical education should not only be based on science, but also communication, empathy, and social skills. "We know that a person is not just a bunch of genes. Even cancer is not just a bunch of genes. It's much more than the genes. And it is important for medical students to understand that," he said.

While it's important to teach medical students about digital technology and complex new technicalities of medicine, these social skills should not be neglected, he said: "When we are going to teach medical students, we would like to make them doctors, not just glorified technicians."

A common EU curriculum and exam?

Overall, the panellists agreed that there should be some equivalence between various qualifications in different countries.

Prof. Griffin said that while on the surface this looked like a simple question, in fact it was very complex. "Ideally the answer is yes, there's a basic need for equivalence for doctors, this would be called minimum educational standards. But of course we should be aiming for more than that, we should be aiming for excellence," he said.

Prof. Sobrinho-Simões then gave the example of pathology, saying that it was a particularly easy example that could be rolled out across EU countries.

Prof. Constantinescu suggested that the basic medical degree should be considered like a "driver's license" and then that each country should be allowed do its own specific specialist training on top of that.

Alexandra Archodoulakis, Vice-President of External Affairs for the European Medical Students' Association, agreed that a basic curriculum was needed and that it would ease the transition from classroom to hospital practice, and be more efficient in terms of patient care.

Prof. Julio Mayol, Professor of Surgery at Universidad Complutense de Madrid and chief medical and innovation officer at Hospital Clinico San Carlos, said that the current approach is a "silo" and called for a more social, "network" approach, taking advantage of the digital tools available.

"We need some harmonisation. It's obvious that certain universities are more specialised in certain areas," said *Prof. Pinto*. "But the more complex the medical field is becoming, the more I think we should battle for this kind of service."

Implementing One Health culture in universities and the importance of communication

"Medicine in its delivery is a team sport, and doctors are a core part of that team," declared *Prof. Jenny Higham*, Principal of St George's University Hospital. "If we want to deliver healthcare really effectively, the way that we do that is by operating a system whereby the doctors are well trained around handling ambiguity, around handling complexity, around handling extremely complex conversations."

She went on to describe how important it is for clinicians to have complex conversational skills, especially now, when dealing with patients that have the internet at their fingertips.

Alexandra Archodoulakis agreed that there was a need for better communications training and for inclusion of patients as teachers in interdisciplinary skills training. "We have certain faculties that are already doing that (for communication skills specifically). You have patients there who are also giving active feedback, who also together with the professors can tell you what you did right, or what they would have preferred you did differently and I think that goes a very long way."

"The One Health concept is not just about medicine, it's also about veterinary," *Prof. Pinto* reminded the panel. "What we are learning now is that with the pandemic, the relationship with the animals has all sorts of potential. All of the concepts about air pollution for instance, air quality, all things related with pathogens and medicine and digital health. The key for the future is certainly multidisciplinary."

Prof. Constantinescu suggested that FEAM should start preparing an ideal course in One Health which should be absolutely followed by every medical student.

Dealing with COVID-19 and future pandemics

Prof. Jean Sibilia, the Dean of the Faculty of Medicine of Strasbourg, highlighted the importance of synergistic work and the need for empathy and compassion. He also stressed that learning methods needed to be adapted, for example to digital tools. In the future, he foresees a combination of face-to-face and distance learning.

Prof. Griffin highlighted the need to consider the mental health aspect, for both doctors and medical students, and spoke about the toll of the pandemic. He described how patients are dying without being able to be with their loved ones, about speaking to their loved ones via iPhones. He also spoke about how many doctors and nurses were dealing with this while also they themselves were at risk of catching COVID-19.

The European Medical Students Association had recently conducted a survey among medical students regarding their mental health and it had yielded distressing results, *Alexandra Archodoulakis* told the panel. Students had difficulties with home-schooling and also in the hospitals engaging in patient care for the first time during a pandemic. She highlighted how medical students (and healthcare staff in general) could not go home to see their families to get support, as they might be a vector for the disease.

The length of current medical training vs curricula requirements and how it should be improved

"Medical training is a lifelong experience," said *Prof. Griffin*. "You don't just stop learning when you get a medical degree, that's the beginning. And we mustn't drop the idea that when you've got your medical degree you are then fully trained and that's it. You are beginning your training in life really and you choose the discipline that you wish to go into."

Alexandra Archodoulakis noted that if doctoral training was going to be reduced to 6 years, then "I think reprioritisation is a very big point".

Prof. Constantinescu expanded on this, saying: "We will have to decide that there are some things we no longer need to teach. I know it's hard, we don't want to give up on anything, but it's becoming utopic to teach every single thing that we have been taught 25 years ago." He stressed that there was a need to define things that everyone should know, and should know by heart and very well instantly and then, each university, each programme, depending on which areas they prefer, could build on that base. "We really need to get rid of some things on the curriculum. And I know it's hard, but we have to do it," he said.

The need for digitalisation

"We should be really enthusiastic about future technology and adaptation," said *Prof. Higham*. She spoke about how the people entering medical science will be able to adapt to new technologies for education delivery, training or data storage and knowledge management. She highlighted that "there's enormous power in technology in empowering patients," and urged the conference to embrace technology.

Prof. Mayol said that doctors should be "trained to ask the right questions. It's not about having a deep understanding about how machine learning or deep learning works. It's about being able to ask engineers the right questions to get the right answers. Otherwise, we would be getting very precise but inaccurate answers. So we must train people, not just students, but residents, surgical trainees, medical trainees and even patients to ask the right questions. And that makes a huge difference."

"The pandemic came and a lot of schools weren't ready for any kind of digital teaching," said *Alexandra Archodoulakis*. "There are now students who feel that they really aren't prepared for their board exams at all."

The place of social sciences and humanities in medical science

Prof. Higham said, "We're dealing with human beings, and the understanding of the human state, and a rich understanding of that is absolutely vital. So many determinants of health are societal or within the public domain. We need to know a lot about medicine but we need to know even more about the place that we've been within society and those challenges."

Prof. Mayol said, "People don't get sick in isolation. We need to understand how our societies work. We need to understand how we behave and why and how that behaviour impacts our health."

Last words:

Prof. George Griffin: We should instil in medical students what a privilege it is to be a doctor. You meet people for the first time and within half an hour or an hour you know immense detail of their lives. I'd also like to instil the idea that medicine is actually a continuum. Without research, we wouldn't be able to enhance the future of molecular sciences, through to technology, through to vaccines, through to community health.

Prof. Maria do Céu Machado: We are all role models for the students.

Prof. Fausto Pinto: I believe that the future of medical education should be based not only on the inclusion of all the different topics discussed today, but also to be flexible and diverse and to be able to maintain the essence of the medical profession. I would say that the core programmes should be kept, at the same time they should include more on the technological developments that should be included in the medical teaching and the medical education.

Prof. Stefan Constantinescu: To have the privilege to teach medical students, you have to legitimately comprehend the field of teaching medicine. That is a very important aspect that we take for granted. The highest honour is to be able to influence the safety considerations for future generations.

Prof. Manuel Sobrinho-Simões: The most important points are education, competence and to be able to go on learning. It is crucial to reinforce the number of nurses and technicians over time rather than increasing the number of medical doctors.

Prof Jenny Higham: I think that medical school is a fantastic preparation for a long career. Adaptability, openness to new ideas and a positive attitude to life-long learning is really important.

Prof. Jean Sibilia: The priority is to teach empathy and compassion in medicine. You have the responsibility to reinforce the collaboration in the European context. Erasmus+ is probably one of the best successes of Europe, and we have a responsibility to create a new healthy Europe together.

Prof Julio Mayol: Everything is about communication and understanding. We as doctors – clearly it starts with communication and understanding. If we keep doing that, we will be better off.

Alexandra Archodoulakis: The evaluation of the priorities in education is really important, and it's very important to have all stakeholders involved including students at the table. These eye-level discussions are extremely valuable to move forwards.

Additional material available:

1. Programme of the event
2. Background of speakers
3. Recording of the event

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