

NEWS ANNOUNCEMENT - FOR IMMEDIATE RELEASE

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Milan, Italy

InSilicoTrials' CEO Luca Emili among the panelists of the QUAES-UPF Roundtable “Good Practices and Ethics in in silico Medicine and e-Health” closing the 6th Edition of the VPH Summer School.

On May 27th, the 6th VPH Summer School hosted a Roundtable which gathered internationally renowned experts from the public and private sector, as well as, patients' representatives, to discuss good practices and ethics in in silico medicine and e-Health.

- The VPH Summer School is an annual event co-organized by BCN MedTech and the Virtual Physiological Human Institute (VPHi), with the collaboration of the QUAES Foundation.
- From industrials, healthcare professionals & researchers to patients and the general population, all stakeholders should work together to define and implement a fair and ethical digital health.
- Patients and their data should be at the center of in silico medicine and e-Health development. Their rights must be protected and the misuse of data prevented.

“Digital health and in silico medicine can transform the healthcare and the workforce worldwide. But, how can we ensure that these models can properly anticipate evidences and guarantee a fair and ethical health system for everyone?” wondered Jérôme Noally, principal investigator at BCN MedTech-UPF and chair of the VPH Summer School.

José Manuel Santabárbara, R+D+I coordinator for patients at QUAES Foundation, Josep Vergés, president and CEO of Osteoarthritis Foundation International, Marco Viceconti, full professor of computational biomechanics at the University of Bologna, Luca Emili, founder and CEO of InSilicoTrials, Gordon Johnston, chartered engineer at Johnson & Johnson and Alessandro Blasimme, reader of bioethics at ETH Zürich gave their views on this and other relevant ethical issues moderated by Marta Pulido, science journalist and communications officer at IDIBAPS.



Can we predict life?

In 2005, the Virtual Physiological Human (VPH) was born as the European version of the Physiome project, to develop reproducible, multiscale models of the human anatomy and physiology for clinical practice. “In recent years, computer and mathematical models have expanded to the point of being able to predict health, albeit partially and incompletely. Even so, there are success stories of *in silico* tools approved to replace animal models”, stated Viceconti. A substitution that the European Union plans to make a reality in 2030 according to Emili.

Despite the promises of *in silico* medicine, there are some major ethical concerns to be addressed. For instance, bias or misuse of data. “The use of algorithms in drug discovery is very appealing, because they can help to predict chemical and physiological features of molecules. But they are also black boxes, and this lack of transparency hinders the mechanistic interpretation behind their predictions.

Furthermore, another problem is the possible misuse of these algorithms for the development of pharmacological weapons”, explained Blassimme. “Not to forget one of the most discussed ethical issues: algorithm bias, which comes from biased datasets, which mainly represent white, male, middle-aged patients, used to train artificial intelligence. If left uncorrected, it can amplify inequities in the health system”.

Fairness and justice

Amidst the digital revolution of health, one can wonder about the availability of the e-Health services. Would this technology be inaccessible for underserved communities or populations, such as elderly, homeless, and people suffering from rare diseases? Can digital illiteracy deprive people of access to the healthcare system?

For Emili, the answer seems clear: no. “If we solely focus on Europe, it is very likely that risks and benefits are well balanced. However, on a global perspective, and especially in regions like China, India or Africa, digital health could benefit many people who could have access to innovative tools that otherwise would not be developed for them. Standard healthcare systems are rarely available for these people. But, for instance, surgical robots like Da Vinci could assist populations who are miles away from a hospital or a doctor”.



Patients and their data should be at the center

In order to make people capable to actually use the opportunities offered to them if they wish, truthful information about the benefits and risks of engaging in digital health has to be provided to the individual users. Especially regarding the use of their data, which is key to the advancement of digital medicine. But, should patients be the sole owners of their data? "Undoubtedly, they have the right to have access to all their data. But, they are also motivated to share it in order to help in the advance of knowledge. However, they do want to be informed of the results of the studies and trials in which they participate, which is not always the case", said Vergés. "Patients' rights should be guaranteed. We must explain to them how their data will be used and make sure they understand what they are agreeing to in the informed consent form", added Santabárbara.

Emili pointed out that as long as the data maintains the anonymity of the individual, data sharing should be strongly encouraged, but avoiding that it becomes a data market. "That is very difficult to control, but at the end, every stakeholder, commercials, providers, has their own professional ethics to stick to the rules. Furthermore, what is really interesting for industry is the complete dataset of a population, instead of individual and recognizable data", stated Johnston. "It is worth saying, however, that despite the advances in cryptography, we cannot guarantee 100% data privacy. So there is a need to have interventions to prevent the harmful effects of privacy breaches. But, in no case, this should prevent us from advocating for data sharing", defended Blasimme.



Thorough the session, all the experts agreed on the importance of communication, patients' empowerment and education, transparency, as well as the need for all stakeholders involved to work together in order to define proper regulatory frameworks and policies, as well as to implement a fair and ethical digital health. "It is not uncommon for patients to be included only in the later stages of a research project or a clinical trial, when they should be there from the beginning if we want the outcomes to be relevant for them. For instance, did you know that pill color influences adherence to treatment? Patients are more willing to take blue and green pills than the red ones. So for the sake of the future of in silico medicine, we should listen to them", concludes Vergés.

More info: <https://bit.ly/3I2Rhri>

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About InSilicoTrials Technologies

InSilicoTrials is an emerging startup founded in 2018 by a team of life science, cybersecurity and digital innovation experts, which aims to revolutionize Healthcare through an innovative digital simulation platform.

We have developed a cloud-based platform where complex computational simulations run in an easy and cost-effective way to hyper-accelerate drug & medical device development. Our differentiator from other market players are the models provided by academics, researchers and regulators (such as the FDA). We offer Pharma and MedTech companies state-of-the-art simulation tools that can highly reduce the cost and time of medical products' development.

Today Modeling and Simulation can help companies reduce by up to 50% the time-consuming and costly development, as well as subsequent registration / certification processes of new drugs and medical devices. Though regulatory agencies are recommending companies to adopt these practices, many small and medium-sized biotech organizations may lack the IT infrastructure, expensive software, and high expertise needed to develop and use models.

More information, interview requests & images:

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About VPH Summer School

The VPH Summer School is an annual event co-organized by BCN MedTech at the Department of Information and Communication Technologies, Universitat Pompeu Fabra (UPF) and by the Virtual Physiological Human Institute (VPHi), with the collaboration of the QUAES Foundation. It provides junior engineers and medical doctors with a complete overview of state-of-the-art research for in silico medicine. This year, its 6th edition was held in Barcelona from May 23rd to 27th.

The Virtual Physiological Human Institute for Integrative Biomedical Research, in short VPH Institute (VPHi), is an international non-profit organisation registered in Belgium, whose mission is to ensure that the Virtual Physiological Human is fully realised, universally adopted, and effectively used both in research and clinic.

About QUAES Foundation

The QUAES Foundation is a non-profit organization dedicated to promoting the dissemination of medical and scientific advances among patients. Its vocation is to share knowledge in a rigorous and accessible way, generating a real meeting point between society, academia and health professionals. With Mediterranean roots, this organization is promoted by Ascires Grupo Biomédico, of which the Catalan Cetir is a member.