Avicenna Alliance
Association for Predictive Medicine

In silico medicine and the Avicenna Alliance

***In silico* medicine encompasses the use of computer modelling and simulations in all aspects of the disease pathway.**

The Avicenna Alliance is a global association of organisations, having a commercial or research interest in the development, adoption and deployment of *in silico* medicine to ensure safe, affordable and cost-efficient healthcare.

The need for *in silico* medicine?

The foundations of our healthcare systems today are based on the limitations of the pre-digital era and an acceptance that we do not have the capacity to understand the human body on a scale necessary to provide personalised treatments.

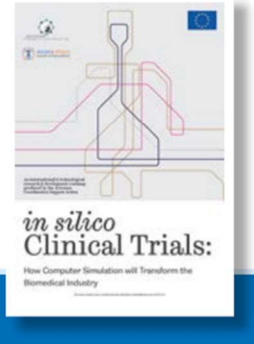
With the advent of the digital era, our ability to turn enormous quantities of raw data into useable information compels us to re-think these assumptions and their policy structures.

In silico medicine is poised to do for healthcare what the internet did for communication. We can usher in a golden era for healthcare through modernising its policy in order to enable in silico medicine.

The origins of the Avicenna Alliance

The Alliance, established in 2016, has its origins in the Virtual Physiological Human Initiative, a European Commission endorsed research area on computer modelling and simulation.

유럽 위원회



Tasked by the European Commission to develop a "Roadmap for *in silico* medicine", the Alliance now seeks to put this roadmap into action around the world and ensure the development of a well-functioning framework for the *in silico* medicine ecosystem.

WHAT WE OFFER

Avicenna Alliance
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OUR MISSION

Accelerate medical innovation and its practical implementation, to ensure safe, affordable and cost-effective healthcare through the large-scale adoption of *in silico* medicine.

Avicenna Alliance's Activities

1. Policy Development

In collaboration with its partners, the Avicenna Alliance, continuously investigates scientific, legal, public policy, government affairs and societal evolution. The Alliance reviews, analyses, publishes, monitors and engages when necessary on multiple topics:

- Medicinal products including pharmaceuticals, biologics and new chemical entities
- Medical Devices
- Combination Products
- Artificial Intelligence
- Health Data
- Health Technology Assessment

2. A Solid Network

Avicenna's network and trusted relationships with established EU and worldwide stakeholders including Regulatory Agencies, Standards organizations, help Avicenna members to connect and share experiences with European policymakers, healthcare professionals and experts from academia, industry, and regulatory agencies.

3. Sharing Knowledge and Expertise

The Avicenna Alliance brings together members of the industry and research communities to share their knowledge and expertise as they strive to improve in silico medicine.
Collaboration among members takes place through different channels, e.g. writing white papers, publishing case studies, and monthly member webinars where members share their knowledge and expertise on specific cases.

THE POTENCIAL OF IN SILICO...

Reducing research costs

- Through early down-selection and de-risking, and improved predictability, in silico technologies can significantly reduce the duration of product development, all the way through the marketing approval process.
- *In silico* trials reduce cost & time-to-market, by extending the computational modelling throughout the product lifecycle, including the regulatory process.

Improving patient safety

- *In silico* medicine enables testing scenarios which would be impossible or unethical to conduct in human patients.
- Testing the long-term durability of metal on metal hip implants, for example, can allow us to develop safer and more effective medical devices that conform to the specifics of each patient.
- With medicinal products, building advanced models based on the stratification of patients can allow greater predictability of treatment efficacy.

Speeding up the development of medicines

- *In silico* technologies turn health data into actionable information. This is of critical importance for rare and paediatric diseases for which the use on *in silico* trials can dramatically reduce the number of human patients required.

Helping to avoid adverse reactions

- There is always a leap of faith when proceeding from animal testing to testing in humans. *In silico* medicine can help make that leap significantly smaller.
- *In silico* technologies applied to clinical development can change the paradigm entirely, switching from a costly trial and error model with exploratory Phase 3 randomised controlled trials (RCTs) to a model which comprises a confirmatory Phase 3 process of a priori in silico simulations. This would in turn reinforce the determination of new product value and focus spending on the most promising scenarios.

Sounds relevant for you?

For general information, please contact Roberta Maggi, Avicenna Office Manager at manager@avicenna-alliance.com

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Avicenna Alliance

AVICENNA ALLIANCE LONG-TERM VISION

Ensure a forward-looking policy framework to facilitate the large-scale development and acceptance of *in silico* medicine.

Bridge the gap between basic research and the commercialisation of products by exploring areas of mutual cooperation and benefit.

Work on developing international guidelines and standards for *in silico* methods such as a Good Simulation Practice document.

Significantly reduce time and costs of approval and reimbursement processes for healthcare technologies to foster medical innovation.

WHO PARTICIPATES IN THE ALLIANCE?

A multi-stakeholder approach

The Alliance bridges gap between the academic community, industry (MedTech, Software, Biotech, Pharma), regulators and policymakers by advocating policy evolutions that take scientific and market developments into account.