



Ioana Agache
European Academy of Allergy and Clinical Immunology (EAACI)

**Big data challenges:
the Academia
perspective**



The current challenges

Investigator/hypothesis driven research – “supervised model”

Drug centered development strategy: new treatments developed based on their mode of action; many “Me To” drugs

Patient-centered questions addressed in a non-systematic and voluntary manner in the post-approval stage by non-commercial entities

Implementation gap of new drugs in real-life



What are the immediate clinical needs

Predict disease development

Predict future risk, including adverse events to medication

Predict response to treatment

Facilitate disease control

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In silico clinical trials

virtual cohorts for testing the safety and/or efficacy of new drugs and of new medical devices.

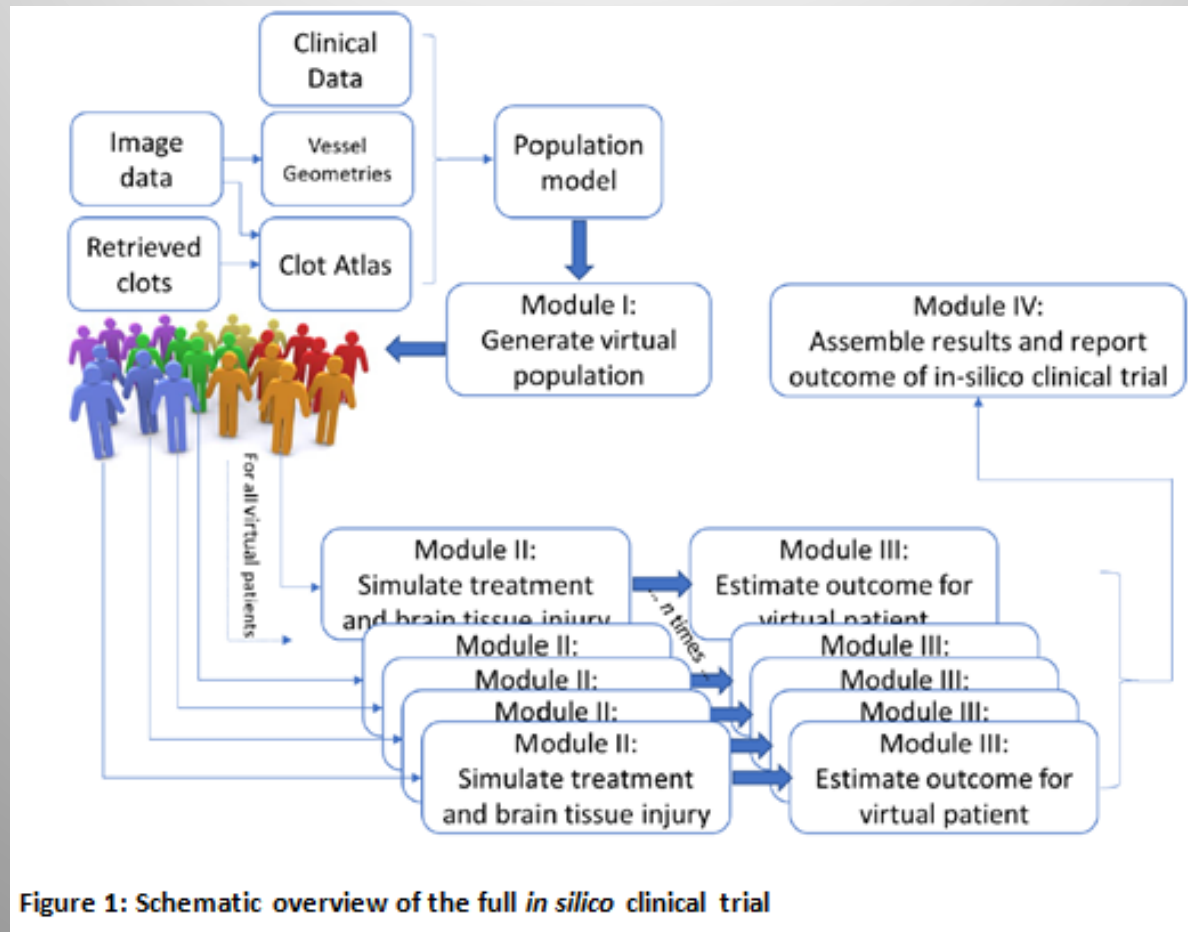
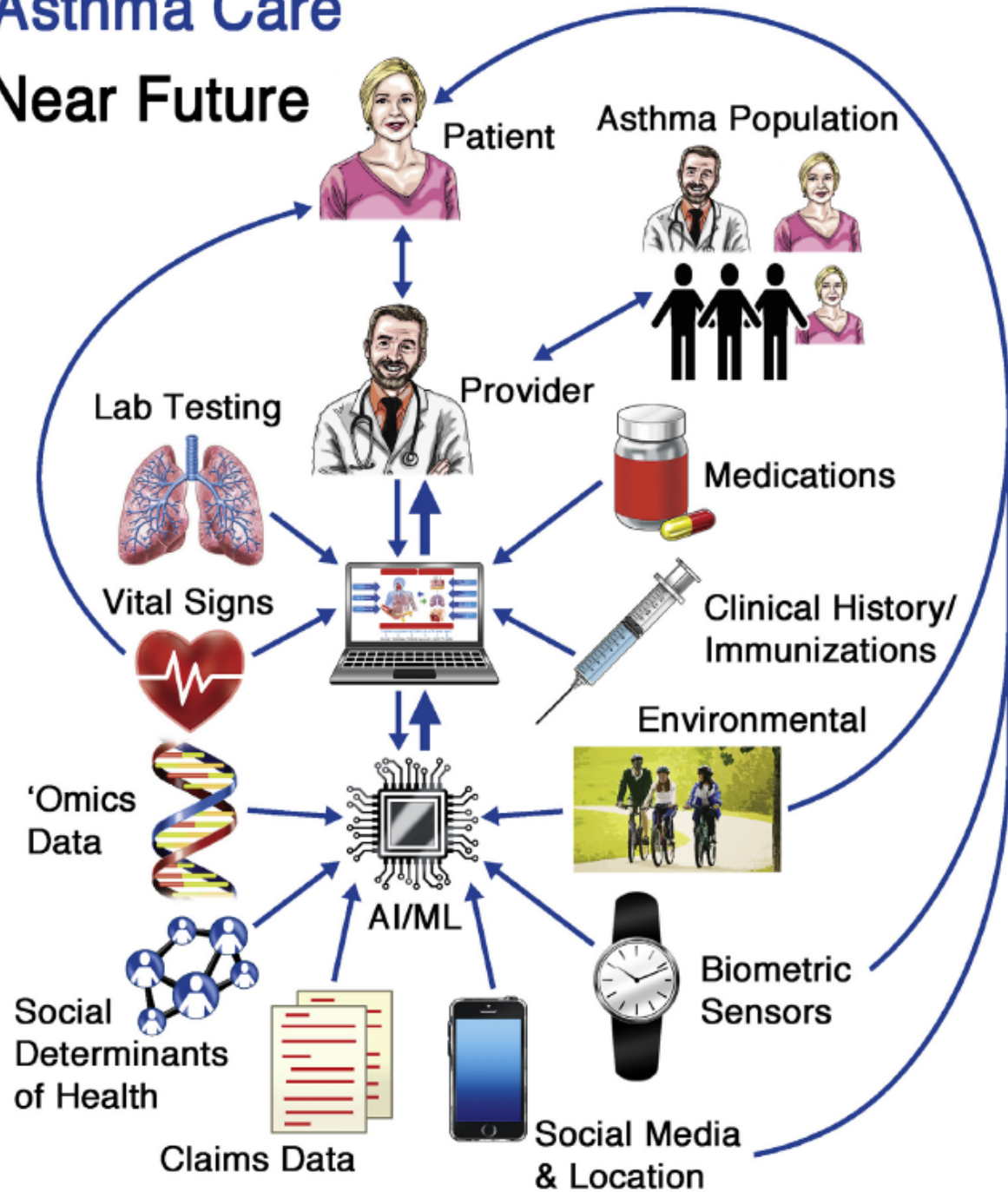


Figure 1: Schematic overview of the full *in silico* clinical trial

Viceconti M, et al. *Int J Clin Trials*. 2016;3(2):37-46

Asthma Care Near Future



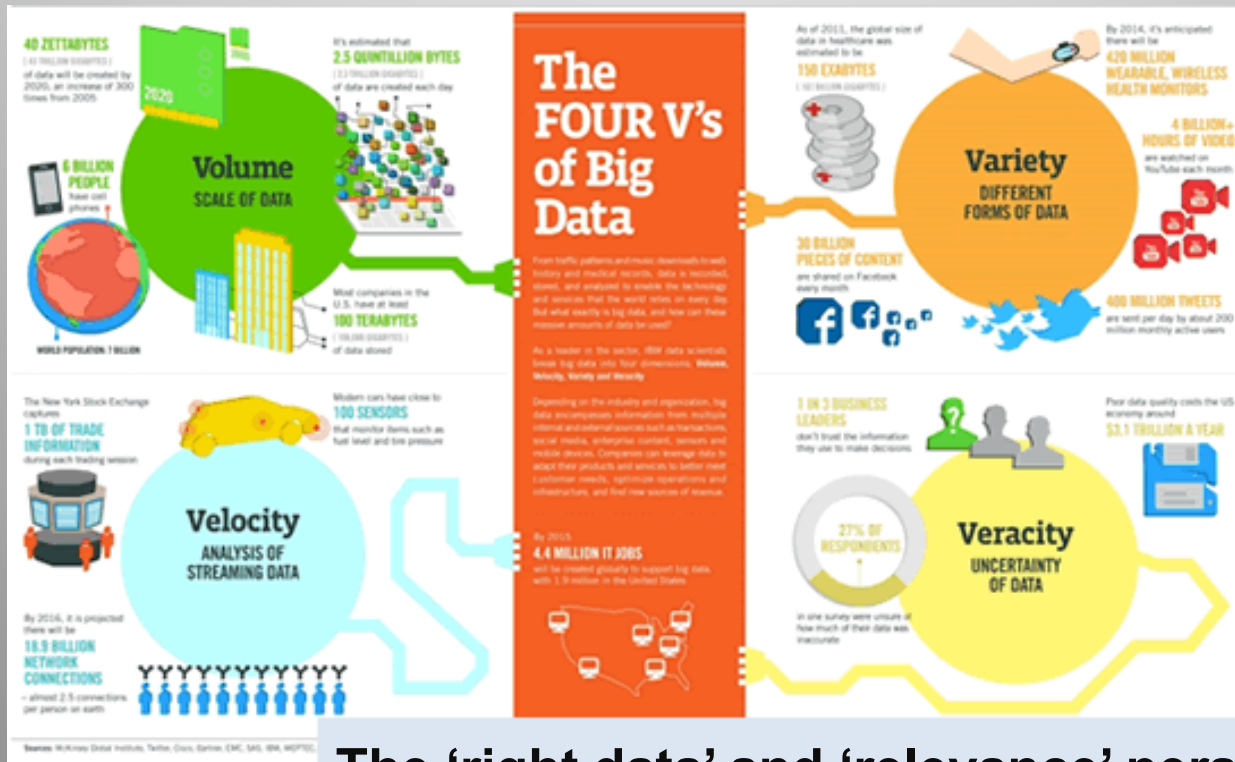
Messinger AI et al.
J Allergy Clin Immunol.
2020;145(2):476-478.



Big data and real life challenges

Lots of data, very few actionable insights

“If you torture the data long enough, it will confess to anything.” (Ronald Coase)



The 'right data' and 'relevance' perspective

