FLEX4HEALTH – Scaling Federated Learning and EXchange of cohort study research for Health

OSCARS
Open Science Clusters' Action
for Research & Society

FLEX4HEALTH aims to scale federated health data analysis across Europe by integrating leading research Infrastructures (RIs) – BBMRI, ELIXIR, and EIRENE – with established Open Science platforms, such as MOLGENIS for FAIR-compliant data cataloguing and DataSHIELD for secure, privacy-preserving analytics. The project will bridge these RIs with interoperable tools and standards, and increase their technical readiness levels.

LS RI
Life Sciences

Challenge

To reach sufficient statistical power, diversity and longitudinality, it is essential to combine and jointly analyse data from many cohort studies across regions and countries. The integration and analysis of extensive, sensitive health datasets remain challenging due to technical complexity, privacy concerns, and fragmented resources.

Solution

FLEX4HEALTH will create a scalable governance where all stakeholder groups can direct the infrastructure while promoting diversity and inclusivity. It will facilitate seamless integration of diverse health data sources (BBMRI, ELIXIR, ECRIN, EIRENE), and provide comprehensive training materials, thus promoting wide adoption within the broader scientific community.

Scientific Impact

FLEX4HEALTH will significantly expand the reach and usability of federated analysis across biomedical domains. The project will reduce key analytical gaps - especially for complex omics and imaging data, while leveraging synergies with initiatives such as GDI, EOSC4Cancer, ERDERA, and EUCAIM.

Partners

University Medical Center Groningen – UMCG, Barcelona Institute for Global Health – ISGLOBAL

https://oscars-project.eu/projects/flex4health-scaling-federated-learning-and-exchange-cohort-study-research-health