OPTIMA: Advancing Personalised Cancer Care through Federated Real-World Evidence

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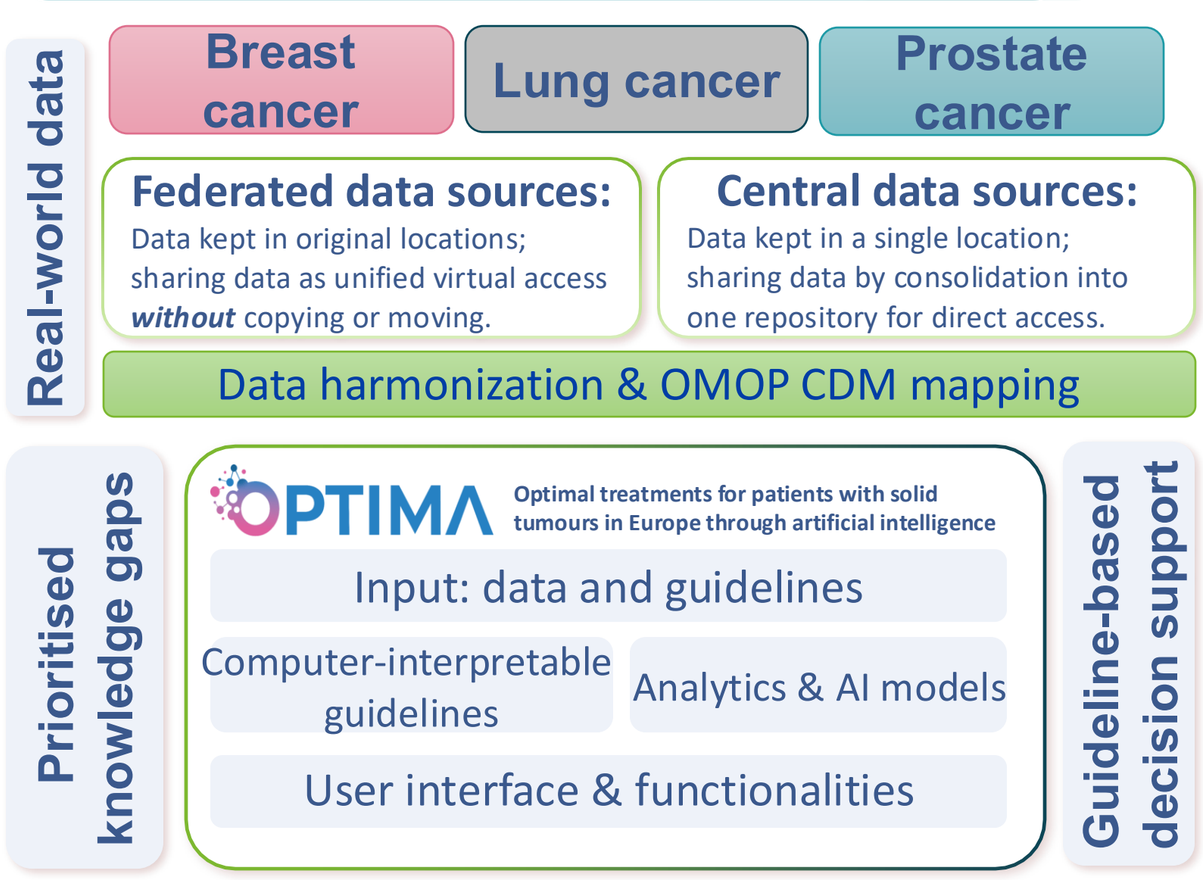
FACTS & FIGURES

Start date:	01/10/2021
End date:	30/09/2026
	(extended to 30/03/2027)
IMI funding:	10 459 997 €
EFPIA in kind:	11 979 800 €
Other:	250 170 €
Total Cost:	22 689 967 €
Project website:	www.optima-oncology.eu
Social media:	@OPTIMA_oncology

CHALLENGE

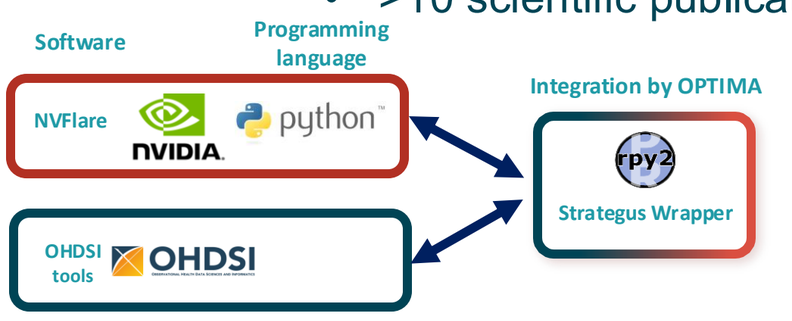
- Fragmented, non-comparable cancer data and no integrated privacy-preserving platform across Europe.
- Data-protection and security barriers to safe cross-institutional processing.
- Limited scalability of existing solutions across cancer types, indications and research questions.
- Insufficiently personalised treatment decisions despite expanding knowledge and options.

APPROACH & METHODOLOGY

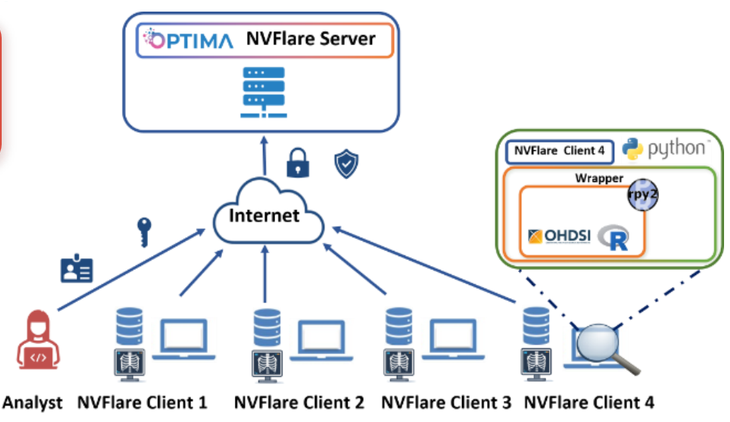


RESULTS

- 3 cancer types: lung, breast, prostate
- 39 active partners / 14 European countries
- 19 datasets / over 2 M cancer patients
- 30 priority research questions selected
- Computer-interpretable guidelines developed and translated into prototype clinical decision-support tools
- Federated analytics implemented for OMOP, omics, imaging and predictive modelling in R/Python.
- User interfaces for federated-job approval and usability improvement under testing
- 10 sites in implementation/testing
- >10 scientific publications / >30 congress contributions



OHDSI-NVFlare Integration for OMOP-Based Federated Analytics



NVFlare clients with access to data are deployed locally at each site, while a central server is used to orchestrate analysis requests and aggregate results.

VALUE OF IMI COLLABORATION

- The IMI/IHI setting enabled a pan-European, cross-sector collaboration beyond the reach of any single organisation
- It brought together clinical, research, industry, AI/software and patient-community expertise, with access to distributed datasets, models and technical infrastructure
- This enabled GDPR-compliant federated analytics and machine learning for secure multi-site research without centralising sensitive data.
- Combined expertise and resources supported scalable solutions with a clearer path to real-world adoption.

CAREER IMPACT

- Integrating clinical, academic and CRO experience with user-centred design of digital decision-support prototypes.
- Translating clinician and patient needs into implementable workflows, PICO-framed research questions and study cohorts.
- Building a career focus in user-driven, data-intensive oncology research and real-world evidence within public–private partnerships.

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