

Welcome

An important driver for the ATHENA project is the complexity and heterogeneity of cancers, which leads to variable responses of patients to treatments and interventions. Developing models that can accurately predict a patient's care pathway using prognostic and predictive biomarkers is increasingly important in both clinical practice and scientific research. Over the past few months, we've made significant progress developing the use cases for bladder cancer and multiple myeloma and relying on multidisciplinary expertise to cover the medical and technology aspects. Challenges associated with data sharing and integration are being addressed and an appropriate federated data ecosystem is being created, enabling an interoperable foundation for data exchange, analysis and interpretation. In this newsletter, we highlight several topics which play a central role in the ATHENA project, while we continue to develop this precision medicine initiative.

"Through multidisciplinary expertise and tackling knowledge gaps, a novel federated privacy preserving platform can be established for oncology research."



Tine Lewi ATHENA project lead Senior Director - Global Data, Platforms and Partnerships Janssen



Recommendations for health data reuse



We interviewed **Ingrid Maes**, Managing Director and Co-founder at ATHENA partner Inovigate, to find out what the challenges are of real-world data (RWD) reuse and how ATHENA can help us overcome them. Read the full interview for more insights and check out the white papers with concrete recommendations.

Check out the white papers **HERE**

The importance of real-world data for everyone involved

"It is widely accepted that access to real-world data is favorable for all parties involved. The patient will obtain the most effective therapy. The physician will be able to help the patient with the best possible input. Companies and research institutes will gather previously unseen qualitative insights in disease mechanisms and evolution, based on which they can develop novel and effective therapeutic strategies. The government can spend funds for reimbursement on treatments with the best results."

The challenges for secondary use of patient data

"Next to the technical complexities, such as finding ways to unlock and retrieve data, and identifying the appropriate data format, the main challenge is data governance. As many different stakeholders will use the data, collection and management will become extremely complex. Technological, legal/ethical, organizational and financial aspects must be considered. The ATHENA project focuses on the technical challenges of data acquisition and use, combined with the governance aspects to ensure safety, anonymity and transparency towards the patient."

The key steps we need to take, to benefit from RWD

"Although Belgium is currently behind in real-world data progress, we have all the ingredients to put it back on the map. To get there, it will require a serious effort of many parties. The governments need to commit funds for the appropriate infrastructure covering the collection, curation, analysis and reporting of RWD and supporting hospitals to upgrade their (often siloed) systems. In addition, legislation needs to be adapted to allow the reuse of RWD. Academic hospitals should be role models in the collection of qualitative and structured data and give access to the insights obtained. It is key to engage patient communities in the dialog and create trust. ATHENA will focus on this patient engagement and communication during the second part of the project."

The goals and contribution of ATHENA

"By the end of 2023, we hope that the ATHENA project will have shown to hospitals, the government and all other parties involved that patient data can be used in a safe and privacy-preserving way. The ATHENA teams work on pioneering models to unlock, align and combine data. The federated approach offers a technical solution that can seriously reduce complex governance and legal challenges. Simultaneously, the governance aspects are tackled and clear recommendations are presented. ATHENA is unique in the sense that it concerns a multi-stakeholder initiative, combining insights from all parties involved."

The future of health data science in Belgium

"The building blocks offered by ATHENA, should be deployed to the fullest in a few years' time. This way we help millions of patients with the best care possible and resume our position as leader in clinical research and digital-enabled medicine."

Read the full interview



ATHENA partner, Inovigate, sets the stage

About Inovigate

Inovigate is an independent strategy and management consulting company operating in the European Life Science and Healthcare industry, specialized in helping clients to innovate and navigate through an increasingly complex health ecosystem.

To reuse real-world data to generate insights, the infrastructure needs to be upgraded and a solid governance framework built. As an ATHENA partner, Inovigate has united stakeholders to come to recommendations for making Belgium a RWD reuse hot spot. The recommendations have been compiled in two white papers (www.inovigate.com).

Behind the scenes

Find out how Inovigate created the two white papers with recommendations on RWD reuse.



Brainstorm

Desk research

The team members from Inovigate pinpoint the need in the ecosystem and agree upon a strategy they will use to come to concrete recommendations.







BIOVOX Belgian stakeholders unite to strive for data scie healthcare ALL CONTEN' SHOWCASES BioVex Janesen Pharmateu Turrateos V-Bio Ventures Solinge TOPICS EVENTS ABOUT CONTACT f in 🖌 SUBSCRIBE TO NEWSLETTER

They study the situation in other countries to search for working examples.

opportunities of data reuse.

The team searches the literature to gain insights in the challenges and

Gathering insights from the stakeholders Representatives of all parties are interviewed and brought together in round-table discussions where a consensus is reached on the reuse of health data.

Assembling all insights The collected insights from the stakeholders are gathered in two white papers.

Publication After final review, the white papers are published on the website.

Check them out now! www.inovigate.com

Advertisement

Together with communication agency, Turnstone Communications, the message is spread through several channels.

The press release sparks a lot of interest among journalists.





Federated data analysis solves many problems, but we need more!



Central to project ATHENA and its envisioned success in privacy preserving data collection and analysis is its federated character. Instead of collecting patient data centrally from collaborating hospitals and performing machine learning manipulations on the data as a whole, analyses are performed on data while at the hospital level. Patient information never leaves the medical center, ensuring full privacy and integrity.

Michel Van Speybroeck, Director Data Sciences at Janssen, campus Beerse, confirms this high level of security. "Federated learning as such is privacy preserving, as no form of patient identity is passed on to the central level. Furthermore, ATHENA partners are continuously seeking to optimise their security measures with the newest technologies."

Van Speybroek and his team are pioneers in their field, as they developed a unique platform for federated learning. "Feder8 is one of the most comprehensive platforms for federated healthcare data analysis worldwide", says Van Speybroeck. "Many competing programs either limit the possibility of self-service and collaboration, or do not include medical data modeling, study design or other functionalities included in Feder8".

Feder8 indeed encompasses much more than federated learning alone. "With Feder8, we aim to go beyond the final algorithm. We support the entire study flow with data discovery, feasibility analysis, study execution and result dissemination."

However, Van Speybroeck also emphasizes the limitations of federated learning, "To be able to use federated data management, one basically needs three things. First, there is a need for technical infrastructure that allows communication between different hubs. Next, you need adapted algorithms that function on data scattered over several locations. And lastly, as is the case for any statistical analysis, you need data, a lot of data." And the latter is the area where most progression can still be made. "We need more to make it work! More data, of better quality and a higher level of standardization."

By partnering up directly with hospitals, ATHENA is ideally suited to showcase the strengths and possibilities of federated learning. Let's make it count and set the example for future health data management!

Where are we now?



On October 5th 2022, the ATHENA consortium held its second Generally Assembly Meeting in Leuven.

The GAM summarized in five statements



"A lot of progress has been made on many domains, but we still have a number of specific goals on which we will focus in the upcoming year. The data management and analysis tools were optimized, now they have to be used with real clinical data."

"We developed the Disease Trajectory Analyzer as a digital tool usable by clinicians to analyze their own clinical data in a user friendly and efficient manner."



"Minimal hospital records and patient registries are alternative sources of data, but there are challenges."

"Trust is essential. Trust between stakeholders, with

hospitals and especially, with patients."



ATHENA is out there!



ATHENA project presented @ VSC Industry Tour

June 27, UHasselt, Belgium

Tine Lewi (project co-lead, Janssen) and (post-doctoral Christos Chatzichristos researcher, KU Leuven) show how supercomputing can play a role in the digital transformation of the healthcare industry at the VSC (Vlaams Supercomputer Centrum) Industry Tour.

Interesting for ATHENA followers

Coming up

EC Summit November 16-17, 2022 Brussels, Belgium --- Effective and equitable care in cancer

Precision Oncology Forum December 6-7, 2022 Berlin, Germany --- Multidisciplinary platform oncology

EAU Congres March 10-13, 2023 Milan, Italy --- Clinical urology

ICAHIHTM Conference March 20-21, 2023 Madrid, Spain --- Health informatics, technology and management



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The consortium has received funding from VLAIO (Flanders Innovation & Entrepreneurship) in 2019, as one of the four supported projects in the ICON call on personalized medicine (ref. HBC.2019.2528). ICON (Interdisciplinary Cooperative Research) is a formula for demand-driven, cooperative research, such as presented in project ATHENA

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Augmenting THerapeutic Effectiveness Through Novel Analytics (ATHENA) - A Public and Private Partnership Project Funded by the Flemish Government (VLAIO)

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ATHENA article published in Ebook series Studies in Health Technology and Informatics

Read the article here

The ATHENA consortium recently published an article called: Augmenting THerapeutic Effectiveness Through Novel Analytics (ATHENA) - A Public and Private Partnership Project Funded by the Flemish Government (VLAIO).

EEHD Meeting November 17-19, 2022 Brussels, Belgium --- Epigenetics/epigenomics in disease

HEALTHINF February 16-18, 2023 Lisbon, Portugal --- Health informatics

ACDM Conference March 12-14, 2023 Barcelona, Spain --- Clinical data management

DIA EUROPE March 22-24, 2023 Basel, Switzerland --- Data science and policy