I.O.D.A. (InAH OMOP Data Analysis)

An ATLAS-based software for the InAH Community (Belgium)

INTRO

I.O.D.A (INAH OMOP Data Analysis) is a powerful suite of tools designed to simplify the creation and execution of analyses on standardized patient-level observational data formatted in the OMOP Common Data Model (CDM). It is based on ATLAS, an OHDSI community tool. The project has been adapted to meet the specific needs and requirements of Belgian healthcare institutions that are partners of the Institute of Analytics for Health (InAH) in Belgium. Inspired by the Broadsea open-source project, IODA includes additional customisations to facilitate integration and use in Belgian hospital infrastructures.

METHODS

IODA’s primary objective is to enable doctors to perform advanced data analysis without requiring expertise in data science, achieved by simplifying the interface and analytical processes, thus reducing the learning curve and operational complexity for healthcare professionals. It utilizes real-world medical data to support clinical research and to improve treatment in hospitals. Regular updates with the latest patient data and maintenance scripts minimise the workload on IT staff by clearing cached data and redeploying database, avoiding duplication of data. It includes full documentation and support, making it easy to integrate and use in Belgian hospital infrastructures.

IODA supports the OMOP CDM and promotes standardised and comparable data, encouraging collaboration within the partners of InAH. It is also compatible with OHDSI community tools.

RESULTS

IODA represents a significant advance in the analysis of health data among INAH’s Belgian partners, by simplifying installation and use, enhancing accessibility for doctors, and promoting collaboration and reproducibility across institutions. By adhering to the OMOP standard, IODA ensures consistent use across four Belgian institutions, reducing the technical burden on hospital IT staff and enabling quick deployment.

It provides doctors with easy access to accurate data analysis tools, allowing them to independently create cohorts, compare results, and interpret data effectively, thus enabling a broader range of healthcare professionals to engage in data-driven decision-making and research. The tool fosters collaboration by allowing multiple institutions to establish cohorts based on specific requirements, facilitating shared learning and continuous improvement in healthcare practices.

Future versions aim to integrate a broader range of open-source and proprietary tools, such as the Data Quality Dashboard, ARES, Cohort Explorer, and various Rshiny applications, to support evolving needs and drive advancements in both research and healthcare. The ongoing development of IODA will focus on enhancing user experience, expanding analytical functionalities, and ensuring compatibility with new and emerging data analysis tools, thereby continuously improving the effectiveness of research and its impact on healthcare.