

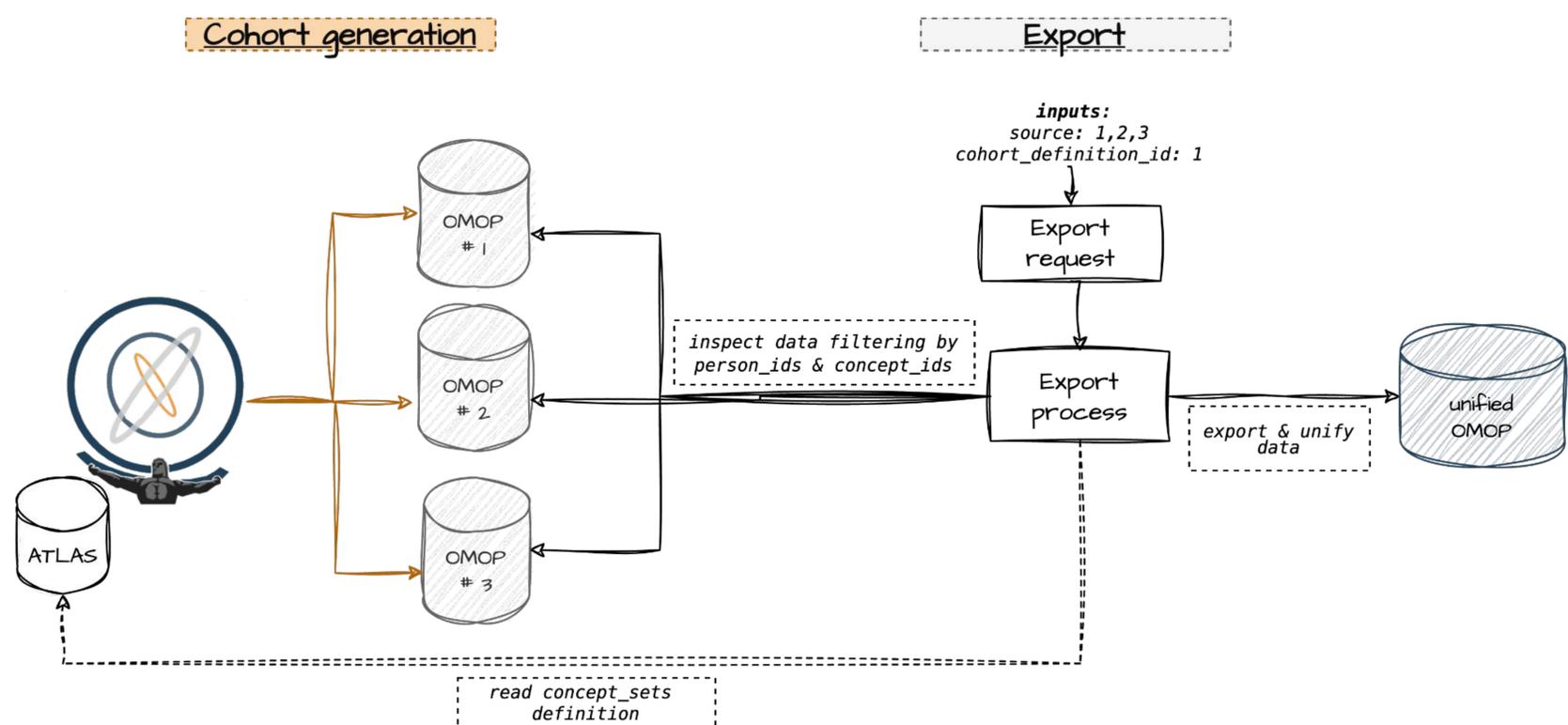
# Patient-Level Data Export from OMOP Database Using ATLAS Cohort Definitions

## Patient-Level data export based on ATLAS Cohorts

ATLAS is a crucial tool in healthcare data analysis, but sharing insights while protecting privacy is challenging. To address this, we have developed a method to export an OMOP database with only the subjects and data defined in a Cohort Definition in ATLAS. By extracting a subset of the OMOP database based on identified cohort patients and anonymizing identifiers, we ensure compliance with data protection regulations while facilitating collaborative research efforts.

## Methods

We developed an export process that requires cohort definitions and a list of sources. Initially, we retrieve person and concept identifiers from the hospital and Atlas databases, respectively, as filters for data retrieval. Then, **using OMOP schema-defined foreign keys**, we query relevant references to these identifiers. Anonymized IDs are generated to **prevent data collisions and re identification**. Data extraction involves creating a new OMOP schema and joining staging tables with original ones while maintaining anonymized identifiers. Certain columns are masked for GDPR compliance. Ultimately, we achieve a **unified and anonymized OMOP instance from all sources**.



**Results:** The utilization of this export process has been successful with cohorts exceeding 15000 patients, integrating data from over 10 distinct sources. This implementation facilitated validation within a targeted cohort and enabled the successful dissemination of patient-level results to stakeholders, while ensuring compliance with privacy and integrity requirements.

