



InterSystems OMOP

With the rapid digitization of healthcare data, there are exciting opportunities to harness real-world clinical data for advancing research. However, aligning this diverse data with the industry-standard OMOP Common Data Model (CDM) can be a challenge, making efficient access and utilization essential for driving research progress.

The InterSystems® OMOP™ platform offers an innovative, cloud-based solution that simplifies this process. By transforming FHIR data and other clinical data sources into the OMOP CDM, it provides a ready-to-use OMOP repository as a service. This empowers research teams to accelerate their projects, collaborate more effectively, and leverage the powerful tools from the OHDSI community to drive new research initiatives.



What is OMOP?

OMOP (Observational Medical Outcomes Partnership) is an open-source common data model (CDM) designed to standardize the format and content of observational data for large-scale analytics and clinical research. It enables researchers to analyze diverse data sources in a consistent manner, improving the ability to conduct reproducible studies and generate real-world evidence. By mapping healthcare data into the OMOP CDM, institutions can streamline data sharing, accelerate research, and enable cross-institutional studies while ensuring data interoperability and consistency across different healthcare systems and sources.



What is unique about research data?

Research data, especially in healthcare, is highly diverse and complex. It comes from multiple sources such as electronic health records, lab systems, and medical devices, each using different formats and standards. Additionally, research data must be standardized to ensure it is comparable and usable across institutions, which can be a time-consuming and error-prone process. The sensitive nature of healthcare data also requires strict privacy and compliance measures, adding another layer of complexity to its handling.

These challenges demand solutions that automate data extraction, transformation, and standardization to ensure interoperability and scalability.



What is InterSystems OMOP?

InterSystems OMOP is a comprehensive all in one research data pipeline and repository solution that automates data extract, transformation, and load (ETL) into target OMOP CDM repository to support large scale clinical research with superior interoperability and scalability.

Built on InterSystems IRIS® data platform, the solution offers out of the box FHIR to OMOP mapping, terminology mapping, patient level transformation for daily refresh, data quality monitoring, error reporting, and cloud native deployment.



Why is data quality monitoring crucial in healthcare research data management?

Accurate data is crucial in healthcare research, as even small errors can distort results, compromise patient safety, and lead to ineffective treatments. Reliable data ensures that research findings are actionable and trustworthy, driving better clinical decisions and medical advancements.

The InterSystems OMOP solution continuously evaluates FHIR data quality within the OMOP model, identifying gaps like unrecognized terminology or codes. Missing data triggers an error, while suboptimal data generates a warning. Automated reports monitor bulk FHIR data during regular refreshes, enabling researchers to easily address data quality issues.



How does InterSystems OMOP enhance interoperability for healthcare research?

InterSystems OMOP supports interoperability by integrating FHIR and OMOP standards to facilitate the secondary use of clinical data. FHIR is becoming the standard for clinical data sharing, and its adoption is increasing across health systems and research institutions. InterSystems OMOP streamlines the mapping of FHIR data to the OMOP common data model, which is essential for developing high-quality real-world evidence and advancing clinical research. Users can also specify external OMOP repository connection parameters within InterSystems OMOP, enabling data to flow directly into an existing OMOP repository, further supporting seamless integration across systems.



Why is InterSystems OMOP well-suited for regional and national research collaborations?

InterSystems OMOP is ideal for regional and national research collaborations due to its ability to address key challenges like ETL and data quality while supporting FHIR-based interoperability. As regional and national efforts, such as CMS interoperability rules in the US and European initiatives like EHDS and DARWIN, adopt FHIR standards, the demand for efficient OMOP integration grows. InterSystems OMOP provides a cloud-native solution that accelerates data sharing and collaboration, meeting emerging standards and reducing barriers to entry for large-scale research efforts. It also offers user options to add standard OMOP vocabularies or local terminology mapping files, supporting regional and local needs in collaborative research settings.



What benefits would InterSystems OMOP provide?

Research institutions can increase revenue from research activities as researchers can spend less time on building data repositories and establishing data access from EHR systems. Researchers and data scientists can access high-quality data to build analytics and develop AI models, while the organization no longer needs to maintain custom ETL scripts. Clinicians and researchers can also take advantage of daily refresh capabilities to support new use cases on OMOP such as trial recruitment and clinical quality monitoring, especially across different institutions. While the OMOP data model does not store most protected health information (PHI), InterSystems OMOP allows users to suppress additional data elements—such as patient address, provider identifier, or facility information—to further support patient privacy protection in these use cases.



How can we get started?

The first step is to find the right partner.

InterSystems has been a leader in digital health since its inception. We understand the complexity of healthcare data and the importance of seamless data exchange across various systems and platforms. Our expertise in health data interoperability ensures that organizations can easily integrate and access the right data, improving care coordination and operational efficiency. By partnering with InterSystems, organizations benefit from a trusted solution provider, as well as dedicated reliable and efficient health IT solutions.

[Learn more about InterSystems OMOP.](#)

