

ACROSS uses OMOP-CDM and AI to create a unified, multicentric sepsis monitoring system that democratizes quality-of-care tracking across Swiss hospitals.

ACROSS: Actionable, Collaborative, Reusable, interOperable Sepsis System

Background: Sepsis remains a critical **global health challenge**, accounting for an estimated **11 million deaths** annually. While international management guidelines exist, Switzerland currently lacks a unified **national infrastructure** for systematic **sepsis screening and quality-of-care monitoring**. The ACROSS project addresses this gap by unifying initiatives from major Swiss university hospitals into a standardized **digital pipeline** that transforms **routine clinical data** into actionable **insights** for improving **patient outcomes**.

A single-center implementation of our sepsis learning health system leads to significant **mortality reduction** and **cost savings**

Workpackages

1. AI improvement
2. Data standardization pipelines
3. Pediatrics inclusion
4. Software packaging
5. Multicentric deployment
6. Federated registry & sustainability

Methods

Automated pipelines map the source clinical information to international semantic standards. These are used to populate OMOP-CDM tables. Specialized software, including AI-enhanced models can then ingest this data to produce new data-driven insights such as quality indicators or sepsis predictions. Results are made available to the entire consortium partners through a federated network, allowing for multicentric benchmarking and enabling research at scale.

Limitations: OMOP-CDM and vocabularies need to be adapted to include AI-related concepts (e.g. predictions, model version, run ids), and sepsis-specific characteristics (time zero, labels).

