OMOP for oncology data: a single-centre and network perspective

Background: Leeds Teaching Hospitals NHS Trust (LTHT) in the North of England is participating in the Digital Oncology Network for Europe (DigiONE), a European real-world evidence network that aims to establish an international digital infrastructure for oncology care management and research. LTHT aims to contribute to and benefit from the expertise present across the network to transform cancer-specific data to the OMOP common data model.

Methods & Results

1. Data extraction
   - LTHT uses an in-house developed Electronic Health Record (EHR) system called PPM+ to collect diverse and robust data for all cancer patients.
   - Aims to ensure healthcare data conforms to the FAIR Guiding Principles.

2. Data curation
   - Currently, data curation is carried out manually.
   - The capabilities of NLP platforms will be assessed, in order to automate the extraction of data from unstructured free-text clinical data sources.

3. LTHT EHDEN OMOP project
   - LTHT was awarded funding from the European Health Data Evidence Network (EHDEN) to support the adoption of the OMOP CDM.
   - We standardised a subset of patient data to the OMOP CDM v5.3 and will extend this to include generic healthcare data on all patients.
   - This will facilitate the implementation and adoption of OMOP for cancer data that will be collected and analysed.

4. OMOP for DigiONE
   - DigiONE has achieved consensus on the core cancer concepts that will be standardised to the OMOP CDM in all participating hospitals.
   - MEDOC: a minimal cancer dataset. Consists of 36 clinically important concepts that accurately describe cancer, enabling outcome research.
   - LTHT will collect MEDOC data for all cancer patients diagnosed and treated in Leeds. This data will be converted to the OMOP CDM v5.4.

5. Federated data analytics
   - Federated data analytics will be implemented on OMOP data using Vantage6 to draw insights across the DigiONE network.
   - This approach eliminates the need for LTHT to release highly detailed patient-level data to the DigiONE partners, enhancing data privacy.