

Feasibility of OMOP-CDM harmonization in Colorectal Cancer Patients: A Study in a Private hospitals' network in Portugal

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M.Plácido¹, J.Fonseca¹, P.Ferreira¹, L.Magalhães¹, F.Lico², M.Silva² and J.Leal²

Promptly¹, CUF²



Objective

Characterise the population of patients with colorectal cancer (CRC) in a private health system using health-records harmonized for OMOP-CDM.

Method

Health-records of in-hospital and outpatient IT-systems of a private hospitals' network in Portugal were analysed between 2017-2022. Patients with primary or secondary CRC ICD code at anytime during an in-patient visit (independently of being followed for CRC in this institutions) were extracted. Data was harmonized based on OMOP-CDM and published in a federated meta-database (EHDEN). Harmonization process involved terminology mapping using USAGI tool and Athena, ETL architectural design/implementation, and quality control using OHDSI tools. Analysis included visits, diagnostic and monitoring procedures, clinical conditions, and demographic information, excluding CRC treatment data.

Results

Approximately 80% of data sources were successfully harmonized to OMOP-CDM, with key data domains mapped including visits, procedure_occurrence, condition_occurrence and observation. In this study we were able to achieve close to 100% of data quality, according to OHDSI criteria. The study included 1,500 records for 338 patients, with a median age of 69 years (SD: 12.9) and 47% female patients. Most common CRC diagnoses were anorectal malignant neoplasm (25%), primary malignant neoplasm of the ascending colon, sigmoid colon, and unspecified site (17% each). Average outpatient visits was 30.5 and 1.9 inpatient visits. Referrals to nutrition professionals were recorded in 10% of patients. Most frequently used diagnostic and monitoring procedures were CT of pelvis, biopsy, CT of abdomen, plain chest X-ray, urine examination, and colonoscopy. On average there were 278.3 laboratory parameters per patient.

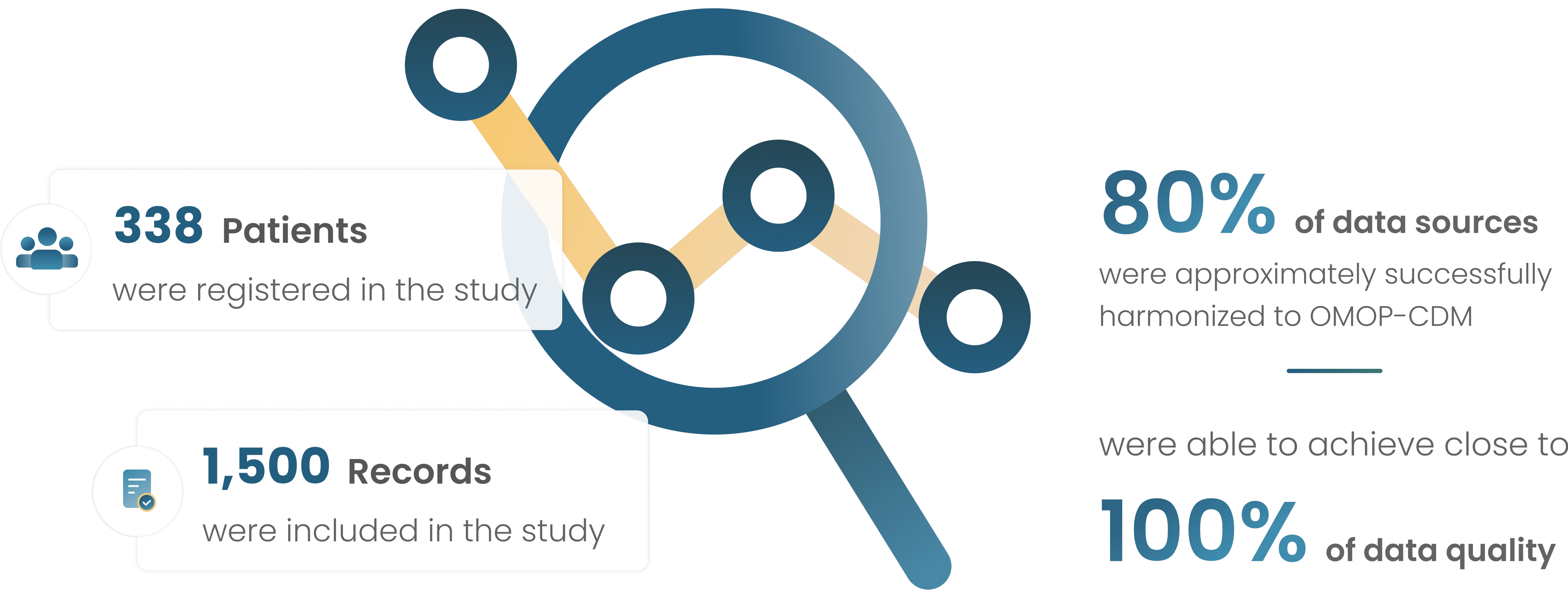


Fig. 1 - Study cohort and data harmonization overview.

Conclusions

Harmonization of data to OMOP-CDM is being discussed as a potential avenue for RWE studies in Europe. Results underline the need to combine different data sources and the use of federated data to capture the total patient pathway for highly complex patient populations.

