Standardization of the French National healthcare database (SNDS) in OMOP-CDM

Introduction
➢ The SNDS (Système National des Données de Santé) is one of the world’s largest healthcare database, encompassing outpatient claims, hospital discharge summaries, and national death registry for the whole French population.
➢ SNDS relies on a complex structure (180 tables, 4500 variables) and numerous specific French vocabularies: e.g., CCAM and CSARR (procedures), NABM (laboratory tests), LPP (medical devices), CIP and UCD (drugs).
➢ Data standardization is needed to improve the reuse of the SNDS for real-world evidence generation and promote script and program sharing.

Methodology
Main database of the SNDS
Extraction
500,000 persons
7 years (2015-2021)
93 tables
290 Gb
OMOP-CDM syntactic and semantic standardization
OMOP-CDM Database
16 base tables
62 Gb
Data Quality Checks
Achille
CDM inspection
DataQualityDashboard

Results
Double identification of individuals:
change of social security number when over 18 or completing studies.

Figure 1. Distribution of target codes by domain
➢ French ontologies map to 6 major domains in the OMOP-CDM standard domains (Figure 1).
➢ For CCAM codes (medical act), 90% of the target codes are procedures.
➢ NABM represents biological acts, CSARR represents physical and speech therapy. Mapping was performed in collaboration with BPE.

Figure 2. Types of visit
➢ About 75% of visit records are outpatient visits (Figure 2).
➢ Almost 98% of visit records come from the SNIIRAM (Figure 2).

Conclusion
➢ Syntactic harmonization has been successfully conducted and the data quality checks are ongoing.
➢ Semantic harmonization was made complex by the level of detail captured by the French Ontologies and is currently being improved.
➢ The current ETL already enables the execution of federated real-world study in SNDS using OHDSI tools, making its power available for health outcome research.

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