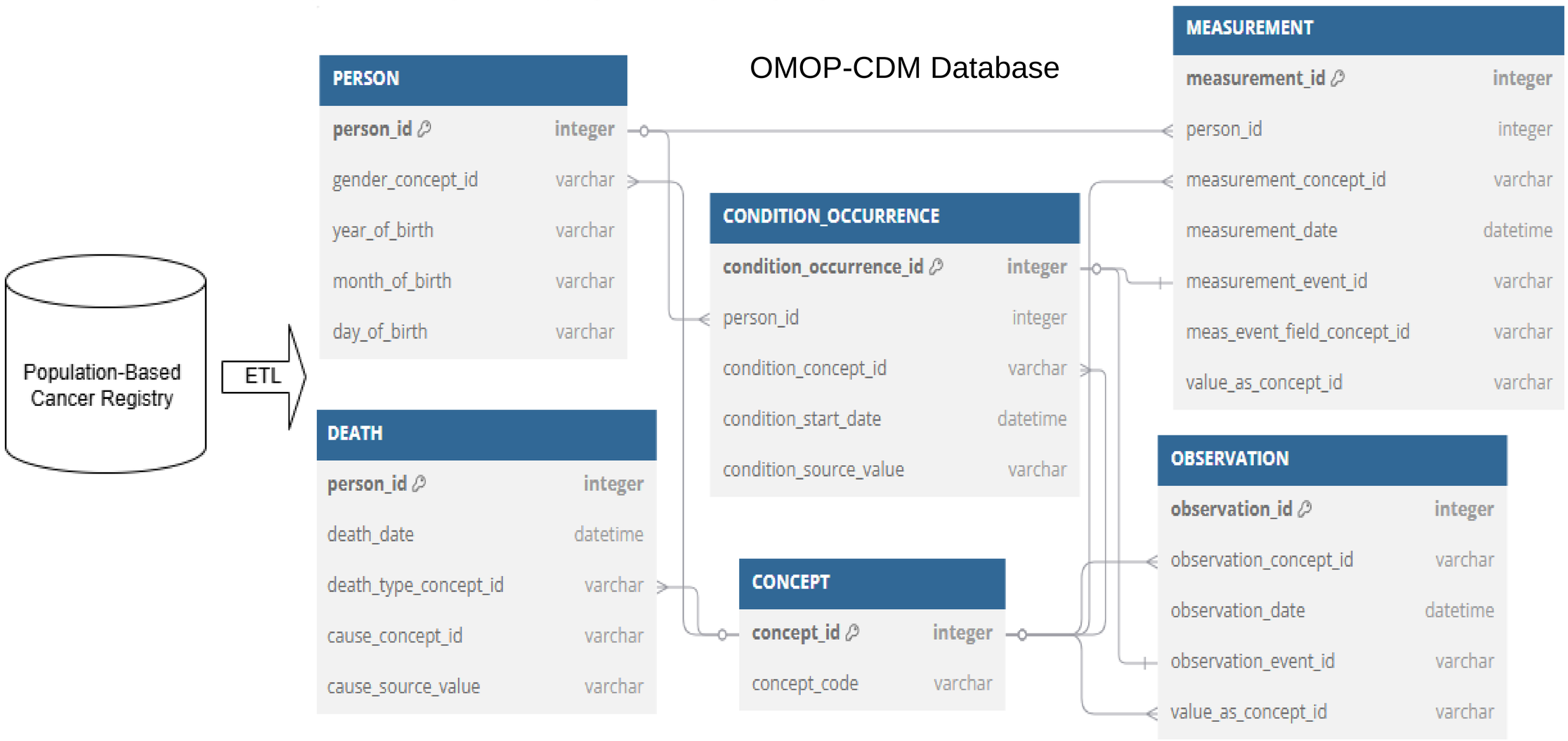
The OMOP- CDM enables the calculation of **cancer diagnosis frequencies** by stage across multiple **population-based cancer registries**.
However, for breast cancer, key variables were often not available or comparable across sources, which **restricted the consistency, accuracy and common use**.

Generating PBCR indicators through OMOP-CDM: a use case for breast cancer

Background: Population Based Cancer Registries (PBCRs) routinely collect data on new cancer cases, aligned to international recommendations and standards. One of the most known international standards is the International Classification of Diseases for Oncology, 3rd Edition (ICD-O-3 v2.0), a classification system that integrates morphology, behavior and topography of tumors to capture cancer diagnosis. In addition to ICD-O, other vocabularies (or how to call e.g. cancer modifiers) are needed for recording cancer specific values.
PBCRs from five countries aim to investigate the feasibility of using OMOP-CDM to compute key Breast Cancer indicators.

Methods: A tailored approach was developed and shared with the five PBCRs. Data were extracted using SQL scripts and indicators were computed using the R programming language.




```
WHERE YEAR(CONDITION_OCCURRENCE.condition_start_date) = 2019
AND PERSON.gender_concept_id = 8532
AND CONDITION_OCCURRENCE.condition_concept_id IN ('list of concepts for breast cancer')
```

Fig. 1 Outcomes of the ETL process applied to a PBCR database

Discussion: Sharing standardized, executable code across OMOP-CDM-compliant databases supports to enhance both reproducibility and comparability of findings. However, flexibility and variability still exists for some mapping conventions (e.g.: TNM classification, breast cancer hormone receptors), complicating the process of creating cohorts across the PBCR. Additional studies are necessary to assess the feasibility and long-term sustainability of the substantial efforts required by PBCRs to convert their data into the OMOP-CDM format.

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