We found 4 challenges in the transition from a national database model to the OMOP Common Database Model:

I. Mapping problems
- 50 unmapped out of 158 data elements due to:
  1. Specific meaning
  2. It being a specialized code set

II. Differences in unit of observation
- The NICE database is centered around a patient’s admission to the ICU while OMOP CDM is patient oriented. This caused problems with defining primary keys.
- We eventually found a way to extract singular patients out of our database using compound keys of various data elements.

III. Differences in database structure
- NICE database was in a wide format, while the OMOP CDM uses a long format.
- The NICE columns had to be extracted to a temporary table so that they could be pivoted using the "UNPIVOT" SQL operator, before being inserted into the OMOP CDM tables. See Figure 3 for a visual explanation.

IV. Technical Restrictions
- 1. Each installation of OHDSI’s applications and their dependencies needed to be approved by our IT department.
- 2. During the ATLAS new tables had to be generated. We could not find a script for this in the Book of OHDSI, EHEDN academy, OHDSI’s github, or OHDSI’s wiki.
- 1. Approval by our IT department delayed our process, especially since the tools required specific versions of dependencies, and needed to be reinstalled multiple times.
- 2. We found a script generating 104 new tables required for ATLAS on the OHDSI forums. The tables generated by the script had redundant primary keys causing issues, so we had to delete them, per instruction by another OHDSI forum post.

Methods
1. We mapped our data elements to the appropriate OMOP CDM fields, and we standardized them using the LOINC and SNOMED-CT standardized vocabularies.
2. We made SQL scripts to execute the ETL as planned in the previous step.
3. We validated the ETL using data quality tools provided by OHDSI.
4. We published our OMOP CDM database on the EHEDN Portal so researchers can find it.

Results
Results in Figure 1.