Conceiving a pregnancy extension table in the OMOP CDM

What will we obtain?
- Identification of pregnancy episodes with their relevant pregnancy-related information.
- From a preliminary assessment:
  - SIDIAP could map >678,000 pregnancy episodes covering all required fields between 2006 and 2021.
  - The Norwegian Health Registries could map >720,000 pregnancy episodes covering all required fields between 2008 and 2020.
- Final list of fields to be included is currently under discussion. Feedback from the OHDSI community is welcome!

What do we expect?
- The pregnancy extension table will help standardize pregnancy data from different Data Partners with a high level of granularity.
- Successful integration of this table in the future version of OMOP CDM will help facilitate federated pregnancy studies, such as medication safety during pregnancy and early life determinants of health and disease.

PRESENTER: Edward Burn
(on behalf of Alicia Abellan)

What do we propose?
- We propose a pregnancy extension table with the aim to facilitate future federated pregnancy studies using the OMOP CDM.

Why do we propose it?
- Many Data Partners have detailed information related to the pregnancy period.
- The current OMOP CDM lacks standard concepts to define a pregnancy episode.
- The current OMOP CDM lacks standard concepts for clinical events and observations related to pregnancy.

How will it be done?
- We developed an initial proposal of a pregnancy extension table for the OMOP CDM based on discussions with three Data Partners: SIDIAP, University of Oslo, and HIC Dundee.
- We propose an initial list of key required and optional fields (Table 1).
- Required and optional fields will aim to fit the diverse nature of source data from different Data Partners.
- The proposed table will be tested using data from electronic health records (SIDIAP; Spain) and health registries (Norwegian Health Registries; Norway).

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Table 1. Extract of the proposed pregnancy extension table for the OMOP CDM

<table>
<thead>
<tr>
<th>CDM Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>person_id</td>
<td>Unique identifier of the person for whom the pregnancy is recorded</td>
</tr>
<tr>
<td>pregnancy_id</td>
<td>Unique identifier of each pregnancy episode</td>
</tr>
<tr>
<td>pregnancy_start_date</td>
<td>Date when the pregnancy episode started (first day of last menstrual period)</td>
</tr>
<tr>
<td>pregnancy_end_date</td>
<td>Date when the pregnancy episode ended</td>
</tr>
<tr>
<td>pregnancy_outcome_id</td>
<td>Outcome of the pregnancy Categories: livebirth, miscarriage (&lt;20 weeks), stillbirth (&gt;20 weeks), voluntary termination of pregnancy</td>
</tr>
<tr>
<td>mode_delivery</td>
<td>How the delivery was initiated Categories: vaginal, c-section</td>
</tr>
<tr>
<td>gestational_length_in_day</td>
<td>Length of gestation in days (based on ultrasound estimations or calculated from last menstrual period if ultrasound information is missing)</td>
</tr>
<tr>
<td>number_fetuses</td>
<td>Number of fetuses in the given pregnancy</td>
</tr>
<tr>
<td>pregnancy_smok</td>
<td>Reported smoking during pregnancy (yes/no)</td>
</tr>
<tr>
<td>pregnancy_alc</td>
<td>Reported alcohol consumption during pregnancy (yes/no)</td>
</tr>
<tr>
<td>pregnancy_folic</td>
<td>Reported using folic acid in recommended period (yes/no)</td>
</tr>
<tr>
<td>pregnancy_BMI</td>
<td>Pre-pregnancy BMI</td>
</tr>
<tr>
<td>pregnancy_ART</td>
<td>Received Assisted Reproductive Technology treatment for the given pregnancy (yes/no)</td>
</tr>
<tr>
<td>pregnancy_apgar</td>
<td>Score obtained from the Apgar test 5 minutes after birth</td>
</tr>
<tr>
<td>pregnancy_BW</td>
<td>Birth weight of the newborn</td>
</tr>
<tr>
<td>pregnancy_TOFPA</td>
<td>Termination of pregnancy for a fetal anomaly (yes/no)</td>
</tr>
<tr>
<td>pregnancy_SGA</td>
<td>Small for gestational age of the newborn (yes/no)</td>
</tr>
<tr>
<td>pregnancy_FGR</td>
<td>Fetal growth restriction of the newborn (yes/no)</td>
</tr>
<tr>
<td>number_liveborn</td>
<td>Number of liveborns in the given pregnancy</td>
</tr>
</tbody>
</table>

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