

**Yellow highlighting** = foreign keys

**Red highlighting** = relationship between entities (mostly many-many)

**Mother** (mother Quebec health ID, mother name, mother date of birth, mother email, mother address, mother phone number, mother profession, expected birth time frame)

**Biological father** (father email, father name, father date of birth, father Quebec health ID, father address, father phone number, father profession)

**Parent(s)** (number of pregnancies, mother Quebec health ID [references Mother], attended info session, father email [references to Biological father])

**Information session** (session key, session date and time, language)

**Midwife** (practitioner ID, name, email, phone number, facility address [references Facility])

**Backup midwife** (practitioner ID [references Midwife])

**Appointments** (appointment date and time, practitioner ID [references Midwife], mother Quebec health ID [references Parent(s) that references Mother], number of pregnancies [references Parent(s)], notes)

**Facility** (facility address)

**Community clinic** (facility address [references Facility])

**Birthing center** (facility address [references Facility], birthplace address [references Birthplace])

**Medical test sample** (test key, date prescribed, date sample taken, date of lab work, type, id [references Technician], appointment date and time [references Appointments], mother Quebec health ID [references Appointments that references Parent(s) that references Mother], number of pregnancies [references Appointments that references Parent(s)], practitioner ID [references Appointments that references Midwife])

**Technician** (id, name, phone number)

**Pregnancy information** (result)

**Baby** (baby id, birthplace address [references Birthplace], name)

**Birthplace** (birthplace address)

**Home** (birthplace address [references Birthplace])

**Father-Parent** (father email, mother Quebec health ID, number of pregnancies)

**Pairing** (practitioner ID [references Midwife], number of pregnancies [references Parent(s)], mother Quebec health ID [references Parent(s)])

**Session hosting** (practitioner ID [references Midwife], session key [references Information session])

**Parents attending session** (session key [references Information session], mother Quebec health ID [references Parent(s)], number of pregnancies [references Parent(s)])

**Pregnancy test** (result [references Pregnancy information], test key [references Medical test sample])

**Baby information** (id [references Baby], result [references Pregnancy information], gender, parents, blood type, date of birth)

**Parents characteristics** (result [references Pregnancy information], mother Quebec health ID [references Parent(s)], number of pregnancies [references Parent(s)], ultrasound information, parents blood type)

## **Restrictions**

- Some of the participation constraints cannot be represented in a relational model.
- Not all the possible results from the medical test samples can be represented/sorted into a schema.
- There are 2 addresses for birthing center since a birthing center is not only a facility for midwives, but also a birthplace for babies. However, these 2 addresses should be the same.
- ASSUMPTION: the test key in the medical test sample should be able to determine the individual tested, the type of test and the date prescribed (Example: BL\_DZ\_20220118 could be “blood test for Daniel Zhang on January 18<sup>th</sup>, 2022”).
- Parents can be only 1 mother or mother and father. The father can be paired as a parent with multiple mothers. The mother can have multiple children with different fathers. Each “pair” of parents must have 1 mother and at most 1 father.
- Parents are identified by the mother, not the father, but has the possibility to refer to the father
- Info sessions must have at least 1 parent attending
- Appointments are set up with the parent AND the midwife (ternary relationship)
- Medical test samples can only be created during appointments