Optum

Understanding maternal health outcomes

Studying the impact of treatments on pregnancy and infants can help patients, providers, regulatory agencies and pharmaceutical companies make key decisions.

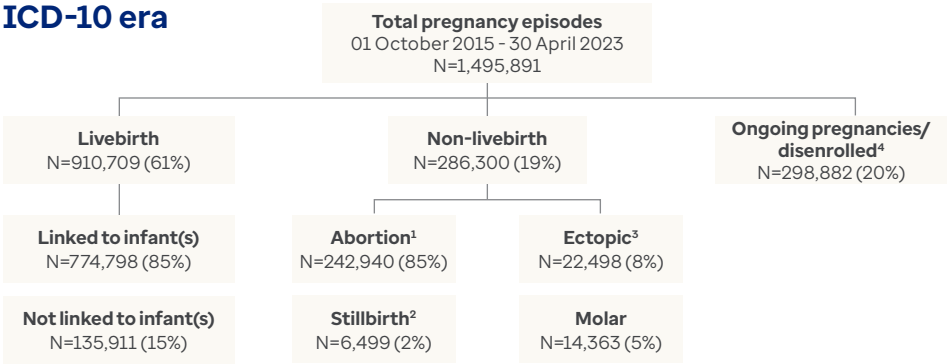
The Optum® Dynamic Assessment of Pregnancies and Infants (DAPI) links pregnant women and their infants, allowing Optum epidemiologists to assess the association between women's exposures and maternal and child health outcomes.

Seminal publications

Bertoia ML, Phiri K, **Clifford CR, Doherty M, Zhou L,** Wang LT, Bertoia NA, **Wang FT, Seeger JD.** Identification of pregnancies and infants within a United States commercial healthcare administrative claims database. *Pharmacoepidemiol Drug Saf.* 2022 Aug;31(8):863-874.

Chomistek AK, Phiri K, **Doherty MC, Calderbank JF,** Chiuve SE, Hinman-McIlroy B, Snabes MC, **Enger C, Seeger JD.** Development and Validation of ICD-10-CM-based Algorithms for Date of Last Menstrual Period, Pregnancy Outcomes, and Infant Outcomes. *Drug Saf.* 2023 Feb;46(2):209-222.

ICD-10 era



Abbreviations: ICD-10, International Classification of Diseases, 10th revision. An additional 735,839 pregnancies from ICD-9 era (01 January 2007 - 30 September 2015) are available.

1. Includes spontaneous, therapeutic and unknown type
2. Includes multi-gestation with a livebirth and stillbirth
3. Includes ectopic and molar
4. A small percentage had unknown outcome

DAPI uses the power of Optum data to satisfy FDA and EMA regulatory PASS requirements.

2M+

observed pregnancies, with approximately 200,000 added per year

10+ pregnancy safety studies contracted

to meet new regulatory agency-driven requirements

2007 to present

16+ years of data

6x per year

data are refreshed frequently

Linked data

- Linked woman-infant data
- Linkage to electronic health records (EHR)
- Linkage to medical records and National Death Index after approvals

Pregnancy attributes

Optum has the potential to link select women identified in claims data to their rich electronic health records (EHR). Variables of interest include the following:

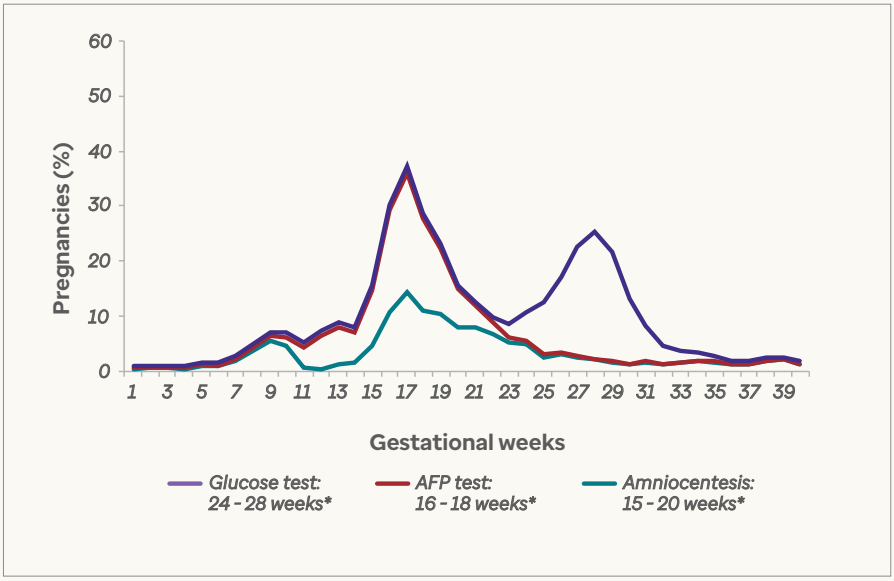
- Demographics
- Maternal comorbidities
- Pregnancy detail: estimated last menstrual period (LMP), pregnancy trimester, routine prenatal tests
- Medication dispensings
- Diagnoses and procedures
- Pregnancy and infant health care utilization: physician visits, prescription dispensing
- Pregnancy outcomes: live birth, abortion, stillbirth, etc.
- Infant outcomes: major congenital malformations, small for gestational age, low birth weight, etc.
- BMI, weight, height*
- Blood pressure and heart rate*
- APGAR scores*
- Medication prescriptions and dispensings
- Glucose/A1c results and dates
- Pregnancy test dates and results
- Smoking, alcohol, substance abuse variables
- Ultrasound measurements and dates
- Obstetric history: gravida/para

* These variables are available in the EHR data only.

Medical records for outcome confirmation

Optum can seek medical records for select women and infants in claims data after necessary approvals. This allows confirmation of pregnancy and infant outcomes that are initially identified from the claims, an essential element for pregnancy post-authorization safety studies (PASS).

Timing of prenatal testing by gestational week as derived by DAPI corresponds with US recommended guidelines[5]



5. Screening for Fetal Chromosomal Abnormalities: ACOG Practice Bulletin Summary, Number 226. *Obstet Gynecol*. Oct 2020;136(4):859-867. doi:10.1097/AOG.0000000000004107.

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