

Optum Dynamic Assessment of Pregnancies and Infants (DAPI)



Critical to ensuring the health and well-being of both women and babies is an understanding of how various exposures, such as medications, may affect them. Yet evidence to drive informed decisions can be difficult to find, as it requires research in large populations of pregnant women and the ability to link maternal exposures to infant health outcomes.

Optum developed a valuable resource to provide evidence for informed decisions: the Optum Dynamic Assessment of Pregnancies and Infants (DAPI).

Optum DAPI has the powerful capability to link woman and their infant's health data through the Optum claims-based research database, and has identified ~1.2 million pregnancies from 2007 through mid-2020. Women's exposures before and during pregnancy, and the resulting exposures to infants in utero, are tracked. These exposures are examined in relation to pregnancy outcomes and infant health outcomes. The resulting dataset offers unparalleled depth and breadth for answering questions about maternal and infant health.

DAPI is being used to satisfy FDA and EMA regulatory PASS requirements.

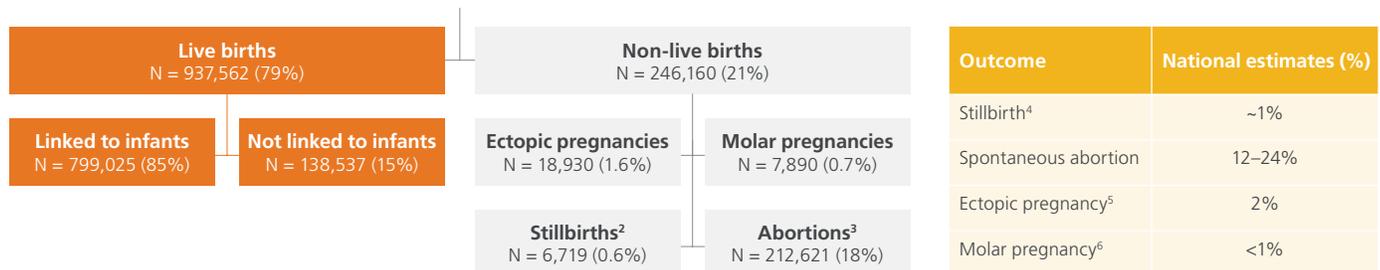
Power of Optum

- Linked woman-baby health data
- Inclusion of non-live birth pregnancy outcomes
- Retrospective and prospective research capabilities
- Potential to link to additional data sources
- Potential for detailed capture of in-hospital labor and delivery care and medication administrations

DAPI Database Overview

Number of pregnancies = 1,183,722¹

January 1, 2007–April 30, 2020



¹Continuously enrolled in health plan from 6 months before the pregnancy start date through the pregnancy outcome date. ²Includes multi-gestation with a livebirth and stillbirth. ³Abortions include spontaneous, therapeutic, and unknown type. ⁴CDC. Facts about Stillbirth. <https://www.cdc.gov/ncbddd/stillbirth/facts.html>. ⁵Ectopic pregnancy--United States, 1990-1992. Centers for Disease Control and Prevention (CDC). MMWR Morb Mortal Wkly Rep. 1995;44:46-8. ⁶<https://www.marchofdimes.org/complications/molar-pregnancy.aspx>

Pregnancy attributes

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

- Demographics: maternal age, year of delivery, infant sex, geographic region
- Maternal comorbidities
- Pregnancy detail: estimated last menstrual period (LMP)/date of conception, pregnancy trimester, doctor visits, fetal testing
- Pregnancy health care utilization: physician visits, prescription dispensings, cost of care
- Pregnancy outcomes: live birth, abortion, stillbirth, etc.
- Infant outcomes: major congenital malformations, small for gestational age, low birthweight
- Infant health care utilization
- BMI/weight/height*
- Blood pressure and heart rate*
- Medication prescriptions/dispensings
- Glucose/A1c results and dates
- Pregnancy test dates/results
- Smoking/alcohol/substance abuse variables
- Ultrasound measurements and dates
- Obstetric history: gravida/para

*these variables are available in the EHR data only

Optum Epidemiology

1-866-306-1321

John D. Seeger, PharmD, DrPH
Chief Scientific Officer, Epidemiology
john.seeger@optum.com

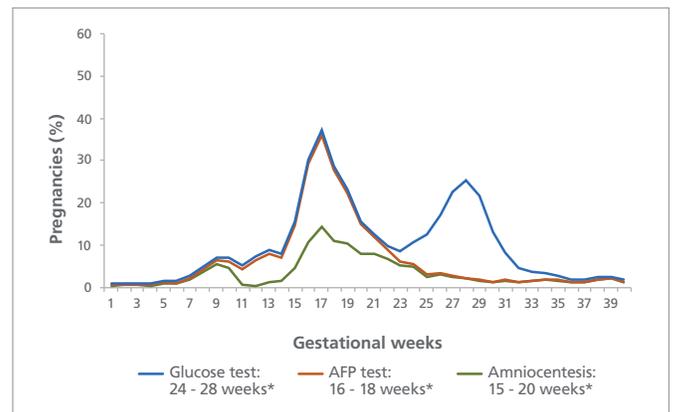
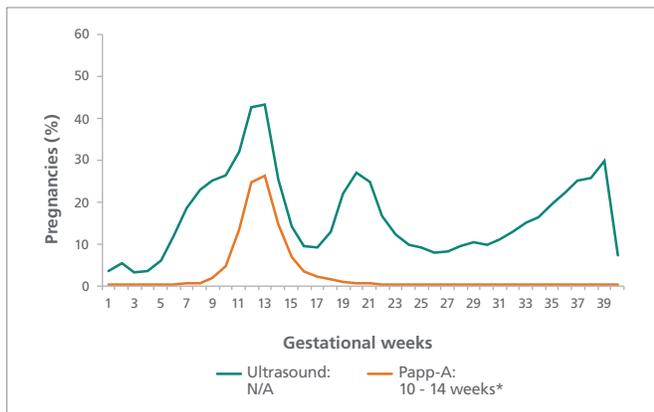
Florence T. Wang, ScD
Vice President, Epidemiology
florence.wang@optum.com

Optum Epidemiology is at the forefront of epidemiologic methodology and practice, designing and conducting research to generate evidence about medical products and population health. Driven by research objectives, Optum scientists use unparalleled data assets to develop real-world understanding of the safety and efficacy of drugs, devices, biologics and health care delivery.

Medical record abstraction

Optum has the potential to seek medical records for select women and infants in claims data. This allows for the 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 week⁷



⁷Expected schedule for prenatal test

Abbreviations: Papp-A, pregnancy associated plasma protein-A; AFP, alpha-fetoprotein.

Note: To create the figure for each prenatal test, only pregnancies with at least one claim for the test were included. For each gestational week, the total number of pregnancies with a claim for the test was divided by the total number of pregnancies observed in that gestational week.

⁷Phiri K, Robin Clifford C, Doherty M, Fan Y, Wang F, Seeger J. Timing Of Routine Prenatal Screening Tests Relative To The Last Menstrual Period Estimated From An ICD-10 Based Algorithm. Poster presented at: 35th International Conference on Pharmacoepidemiology and Therapeutic Risk Management (ICPE); 2019 Aug 24-28; Philadelphia, PA.



11000 Optum Circle, Eden Prairie, MN 55344

Optum® is a registered trademark of Optum, Inc. in the U.S. and other jurisdictions. All other brand or product names are the property of their respective owners. Because we are continuously improving our products and services, Optum reserves the right to change specifications without prior notice. Optum is an equal opportunity employer.

© 2020 Optum, Inc. All rights reserved. WF3355706 09/20