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Background

Existing knowledge

- Gestational diabetes mellitus (GDM) is diabetes diagnosed after 15 weeks gestation; it is one of the most common conditions in pregnancy.
- GDM is associated with increased hypertensive disorders, delivery complications and large for gestational age infants.
- Regular screening is recommended, yet adherence to screening and impacts on maternal and child outcomes are not well documented.

Objective

- To assess real-world GDM treatment use and associations with maternal weight change and large-for-gestational-age (LGA) infants

Methods

Data

- A subset of Truveta Data was used; Truveta Data is comprised of **real-world US electronic health record (EHR)** data, which is aggregated, normalized, and de-identified from US health care systems comprising clinics and hospitals
- **Mother – child dyads** were deterministically linked and longitudinal journeys from both were available to study

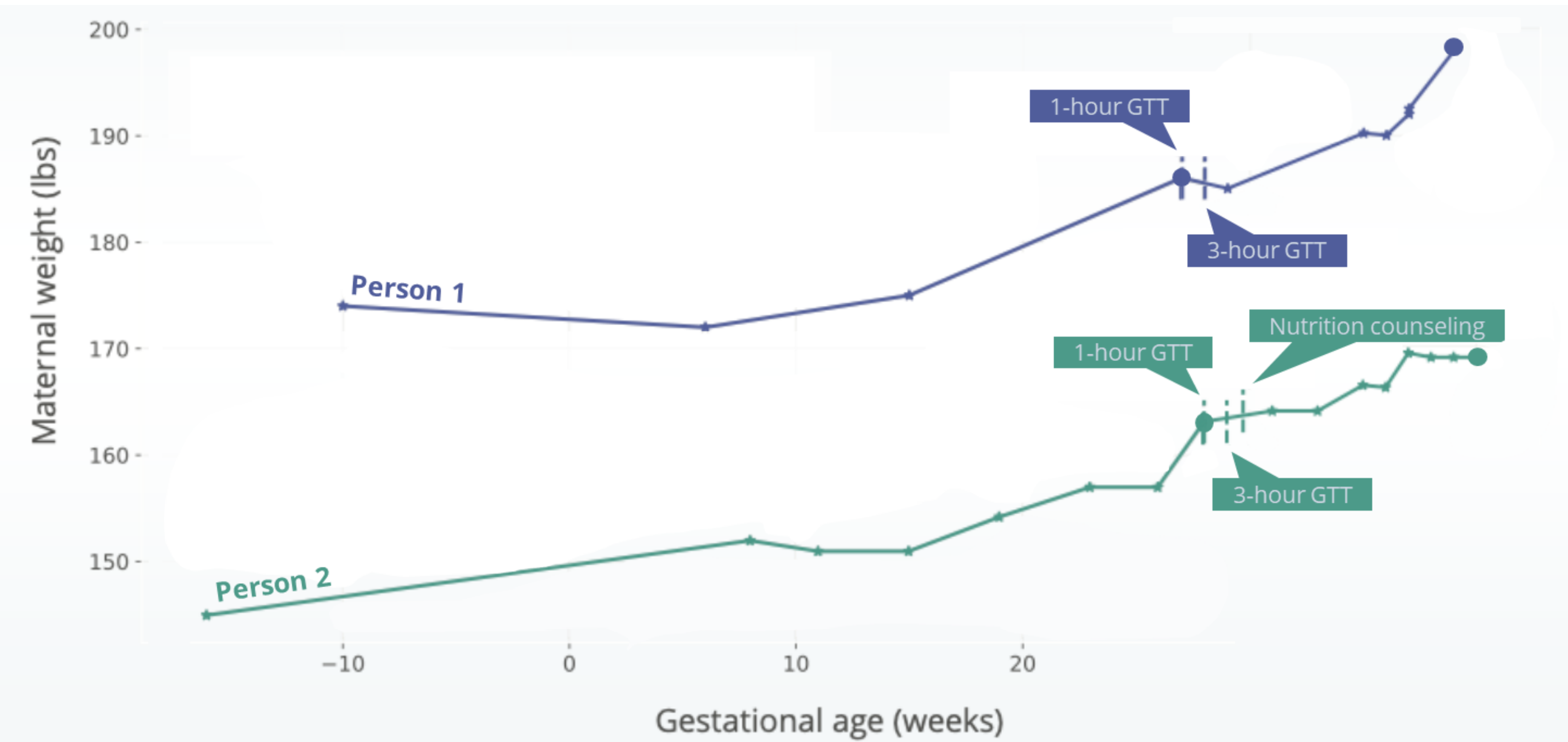
Population

- Women aged 16-50 who underwent 1-hour glucose tolerance test (GTT) between January 2018 – March 2026 during their first pregnancy.
- Used diagnostic codes for gestational age (Z23 codes) to infer gestational age
- Required continuous linked closed medical claims from 24 – 42 weeks gestation.
- Excluded those with prior type 1 or type 2 diabetes
- **GDM:** 2 elevated values on the 3-hour GTT or GDM diagnosis code

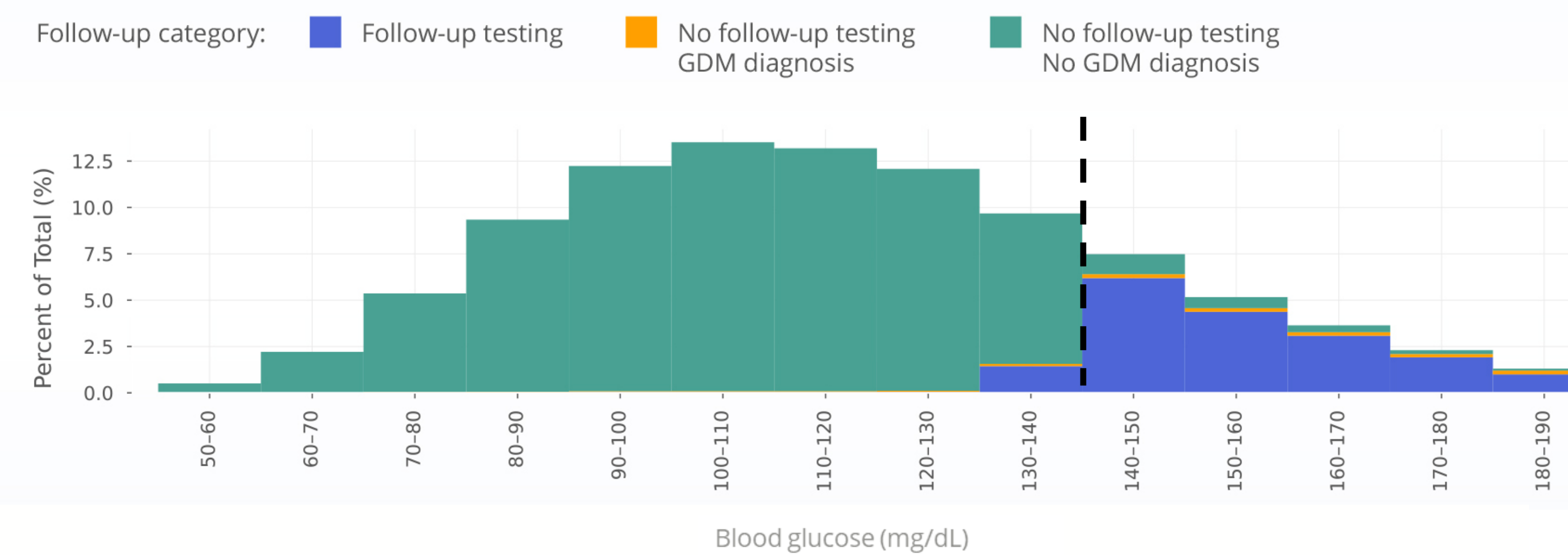
Analysis

- **Maternal weight change:** difference between weight closest to the 1-hour GTT and maximum pre-birth weight measurement
- For a subset of the population with linked infants, we assessed the likelihood of **large for gestational age infant:** birthweight >4000g within one day of delivery
- Ran multivariable logistic regression

Sample weight trajectories for two patients with 1- and 3-hour glucose tolerance tests and GDM



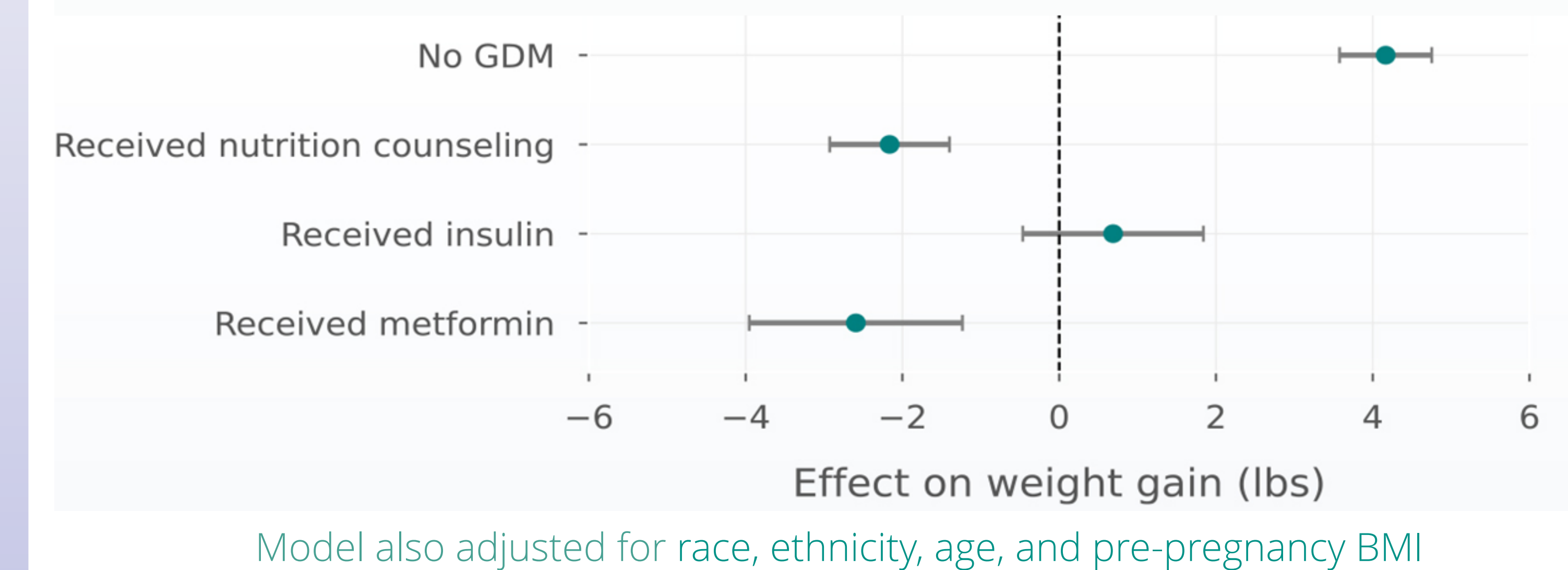
Distribution of 1-hour glucose tolerance testing lab values and follow-up test status



Results

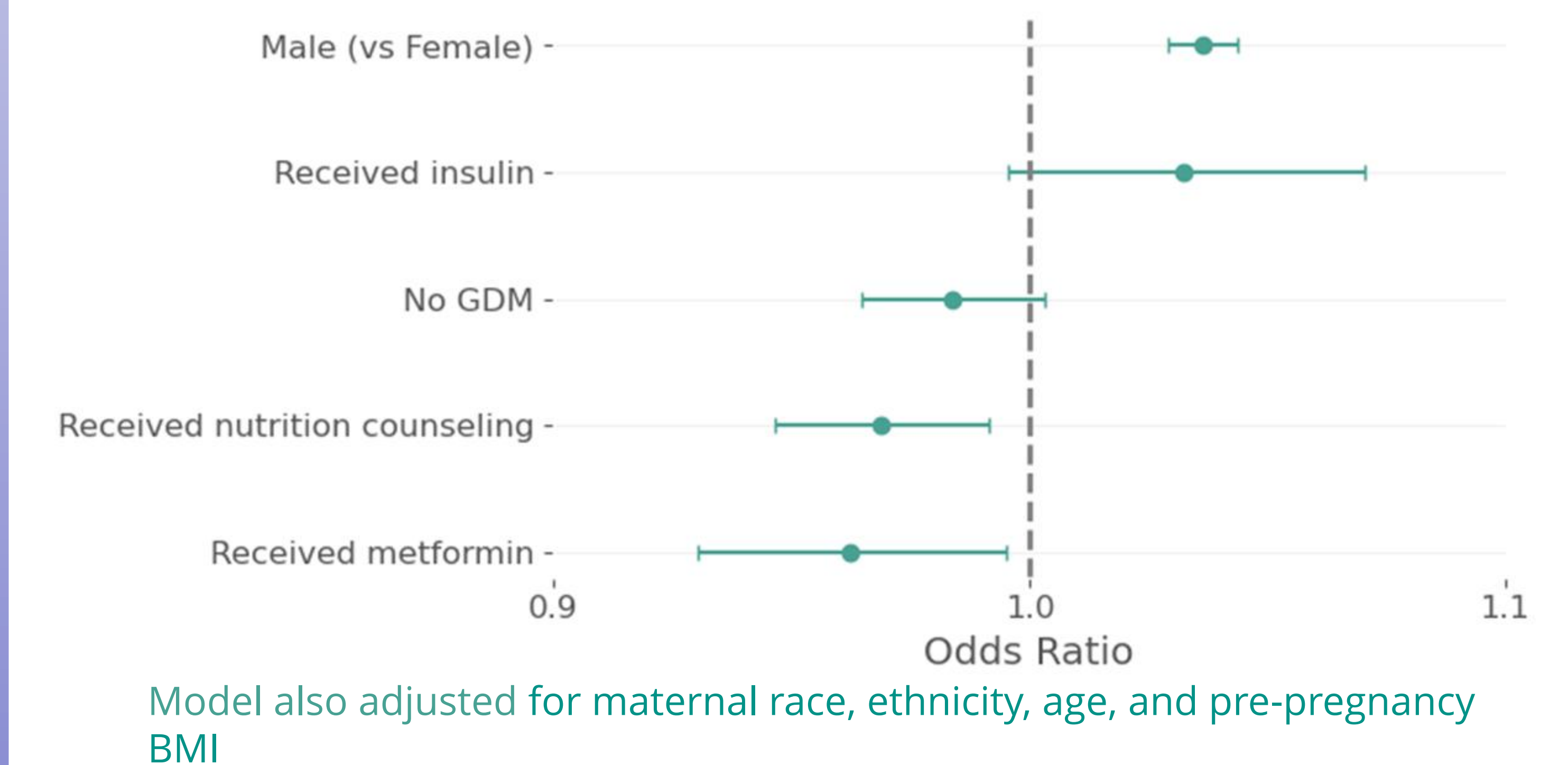
- Maternal population: N = 61,013; Linked infant population: N = 35,870
- 8.7% had GDM; among these mothers, within 45 days:
 - 44.3% received nutrition counseling
 - 15.2% initiated insulin
 - 10.4% initiated metformin
- Nutrition counseling was associated with:
 - Lower maternal weight gain ($\beta = -2.16$; 95% CI: $-2.93, -1.40$; $p < 0.001$)
 - Lower odds of large for gestational age infants (OR: 0.97, CI: 0.95 – 0.99, $p=0.007$)
- Metformin use was associated with:
 - Lower maternal weight gain ($\beta = -2.59$; 95% CI: $-3.95, -1.23$; $p < 0.001$)
 - Lower odds of large for gestational age infants: (OR: 0.97, CI: 0.93 – 0.99, $p=0.02$)

Factors associated with maternal weight gain after the 1-hour glucose tolerance test



Model also adjusted for race, ethnicity, age, and pre-pregnancy BMI

Factors associated with large for gestational age infants



Model also adjusted for maternal race, ethnicity, age, and pre-pregnancy BMI

Conclusions

- In this large real-world pregnancy cohort, nutrition counseling following GDM diagnosis was associated with reduced maternal weight gain and reduced odds of a large for gestational age infant.
- These findings suggest nutrition counseling may benefit both maternal and child outcomes.
- Additional work is needed to further understand how these therapies are being implemented in practice.

Nutrition counseling can be an effective non-drug approach to help limit maternal weight gain and lower the risk of having infants who are large for their gestational age

