

Prevalence of Preterm Labor in the United States

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OBJECTIVE

- Preterm birth (PTB) is a leading cause of maternal and neonatal morbidity and mortality; PTB accounts for ~10.5% of all live births in the United States (US).
- Preterm labor (PTL), which is diagnosed based on clinical assessment of regular uterine contractions and cervical dilation and/or effacement, is a predisposing risk factor in ~50% of all PTBs.^{1,2}
- As PTB rates in the US vary year after year,³ the epidemiology of PTL will require continual study to advance scientific knowledge and the management of this condition.
- The goal of this epidemiologic study was to provide nationally representative contemporary estimates of the prevalence of PTL, overall and by weeks' gestational age (wGA), in the US.

STUDY DESIGN & METHODS

- This study used a retrospective cohort study design.
- Hospital deliveries in the Premier Healthcare Database (PHD) at ≥23 wGA between Jan. 1, 2016, and Sept. 30, 2021, among patients 12-55 years old, were included.
 - Exclusions: pregnancies that did not reach 23 wGA, had ≥3 fetuses or were terminated, and hospital deliveries with no or multiple wGA-specific International Classification of Diseases, 10th revision (ICD-10) codes.
- Sample characteristics were examined between all pregnancies with and without a diagnosis of PTL using descriptive statistics.
- The prevalence of PTL was estimated as:*

$$PTL \text{ Prevalence}_{(overall)} = \frac{\# \text{ pregnancies with PTL diagnosis}}{\text{Total \# of pregnancies in sample}} \times 100,000$$

$$PTL \text{ Prevalence}_{(wGA)} = \frac{\# \text{ pregnancies with PTL diagnosis}}{\text{Total \# of pregnancies by wGA}} \times 100,000$$

- The prevalence of PTL with preterm delivery in the same delivery hospitalization was also estimated using epidemiologic methods.
- Prevalence is reported as per 100,000 pregnancies.
- External validity was examined comparing the prevalence of PTB documented in the PHD with estimates reported by the US Centers for Disease Control and Prevention (CDC).³

* Hospital deliveries, diagnoses, and wGA were based on ICD-10 codes. PTL diagnoses for an individual patient documented prior to the hospital delivery were captured as a lookback to 20 wGA. For individuals with repeat pregnancies observed in the data, only the first pregnancy was evaluated.

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RESULTS: PREVALENCE ESTIMATES AND SAMPLE CHARACTERISTICS

7,005 per 100,000

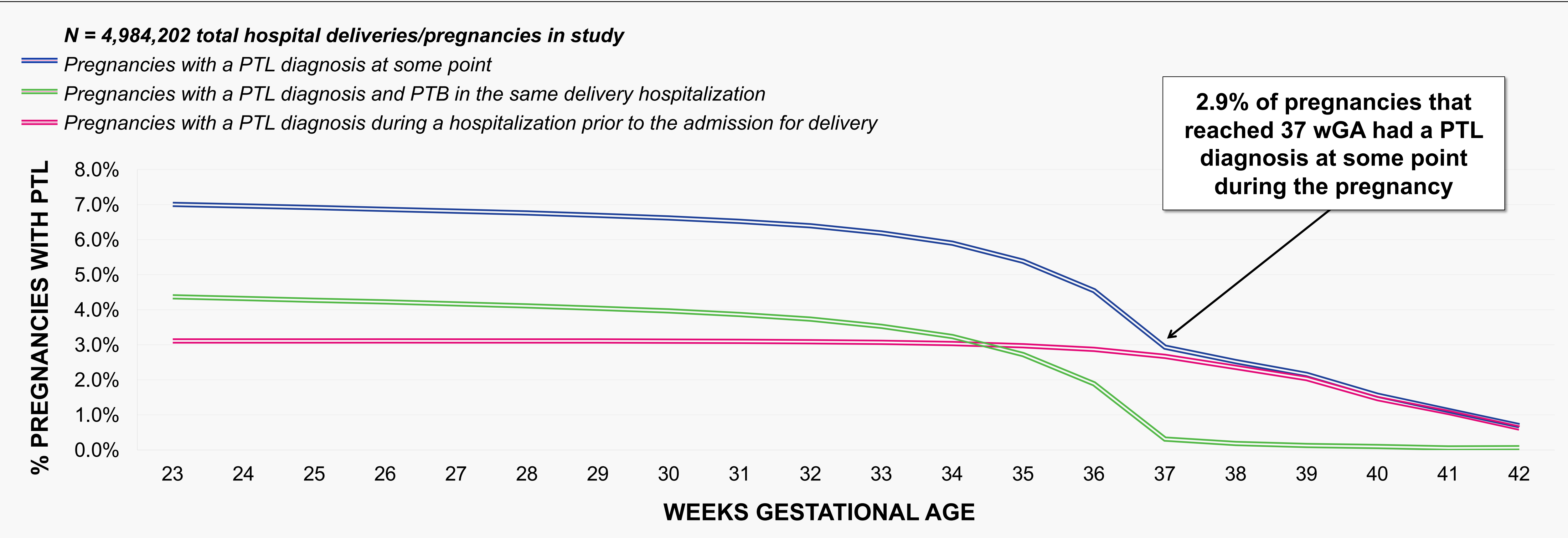
Pregnancies with a PTL diagnosis at some point

4,369 per 100,000

Pregnancies with a PTL diagnosis and PTB in the same delivery hospitalization

3,109 per 100,000

Pregnancies with a PTL diagnosis during a hospital admission prior to the admission for delivery



Note: a small percentage of pregnancies that lasted >36 weeks had a PTL diagnosis on the delivery hospitalization; this could be due to medical coding errors and/or may represent a delivery hospitalization that started at 36 wGA with birth occurring at a later wGA.

Relative to the cohort of pregnancies without any PTL diagnosis, the cohort of pregnancies with a PTL diagnosis had a significantly higher prevalence of the following (all P<0.0001):

- **Hispanics and Non-Hispanic Blacks**
- **Single/unknown marital status**
- **Smokers**
- **Medicaid and Medicare coverage at delivery**
- **Twin pregnancies**
- **Cesarean deliveries**
- **Comorbidities as measured by risk indices for severe maternal morbidity (SMM) and, separately, non-transfusion SMM⁴**

RESULTS: BIRTHS BY GESTATIONAL AGE

	WEEKS GESTATIONAL AGE						
	PRETERM						TERM
Source	Total <37	Total <34	<28	28-31	32-33	34-36	Total 37-41
CDC	10.5%	2.8%	0.6%	1.0%	1.2%	7.7%	89.3%
Current Study	10.0%	2.8%	0.6%	1.0%	1.2%	7.2%	89.8%

PTB estimates in this study were consistent with US birth estimates in 2021, as reported by the US CDC³

Among all PTBs in this study, 217,484 (43.6%) had a PTL diagnosis during pregnancy

Among all term births in this study, 131,641 (2.9%) had a PTL diagnosis during pregnancy

STUDY LIMITATIONS

- The PHD is a population-based health network. The use of this nationally representative sample limits selection bias and has strong external validity, which was confirmed in a comparison with CDC-reported birth estimates.

DISCUSSION & CONCLUSION

- This study is the first to provide nationally representative estimates of the prevalence of PTL in the US.
- Characterization of the epidemiology of PTL provides a significant contribution to our understanding of this maternal condition and can help inform the development of medical innovations for PTL.
- Future research will examine the epidemiologic burden of PTL by maternal age, race/ethnicity, and geographic region.

DISCLOSURE

- All authors provided intellectual contributions and approve this poster.
- Study funded by Organon.

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