

Low-Dose Aspirin Use for Preeclampsia Prevention in Moderate- and High-Risk Pregnancies



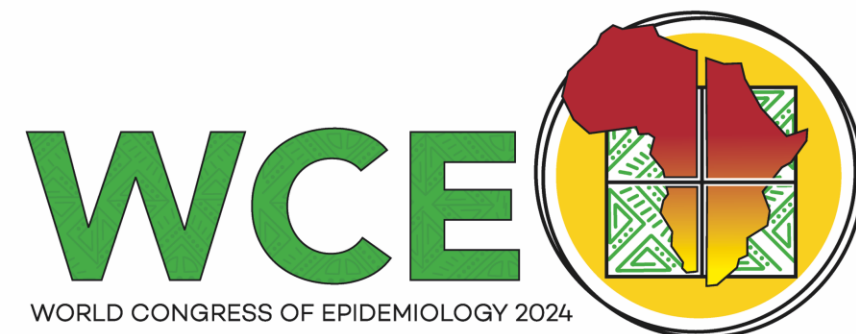
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September 25, 2024



Study Team



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Background

- Preeclampsia (PE) is a pregnancy-related disorder affecting **5% to 8%** of all pregnant individuals
- The U.S. Preventive Services Task Force (USPSTF) recommends low-Dose Aspirin (LDA) prophylaxis to be initiated between 12- to 16-weeks of gestation for those who meet the criteria:

USPSTF: 2021 Updated Recommendation



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Background

Table 1. Clinical Risk Assessment for Preeclampsia^a

Risk level	Risk factors	Recommendation
High ^b	<ul style="list-style-type: none"> • History of preeclampsia, especially when accompanied by an adverse outcome • Multifetal gestation • Chronic hypertension • Pregestational type 1 or 2 diabetes • Kidney disease • Autoimmune disease (ie, systemic lupus erythematosus, antiphospholipid syndrome) • Combinations of multiple moderate-risk factors 	Recommend low-dose aspirin if the patient has ≥ 1 of these high-risk factors
Moderate ^c	<ul style="list-style-type: none"> • Nulliparity • Obesity (ie, body mass index > 30) • Family history of preeclampsia (ie, mother or sister) • Black persons (due to social, rather than biological, factors)^d • Lower income^d • Age 35 years or older • Personal history factors (eg, low birth weight or small for gestational age, previous adverse pregnancy outcome, > 10-year pregnancy interval) • In vitro conception 	<p>Recommend low-dose aspirin if the patient has ≥ 2 moderate-risk factors</p> <p>Consider low-dose aspirin if the patient has 1 of these moderate-risk factors</p>
Low	Prior uncomplicated term delivery and absence of risk factors	Do not recommend low-dose aspirin

^a Includes only risk factors that can be obtained from the patient medical history.

^b Includes single risk factors that are consistently associated with the greatest risk for preeclampsia. Preeclampsia incidence would likely be at least 8% in a population of pregnant individuals having 1 of these risk factors.

^c These factors are independently associated with moderate risk for preeclampsia,

some more consistently than others. A combination of multiple moderate-risk factors may place a pregnant person at higher risk for preeclampsia.

^d These factors are associated with increased risk due to environmental, social, and historical inequities shaping health exposures, access to health care, and the unequal distribution of resources, not biological propensities.

Background

- According to a recent meta-analysis, LDA initiated before 16-weeks of gestation reduces risk of PE by **15%**.

Pooled Relative Risk = 0.85 (0.75 – 0.95)

- However, the utilization of LDA prophylaxis is as low as **29.4%** (risk-based care) vs **1.5%** (care as usual)
- These rates are even worse for women in underserved communities

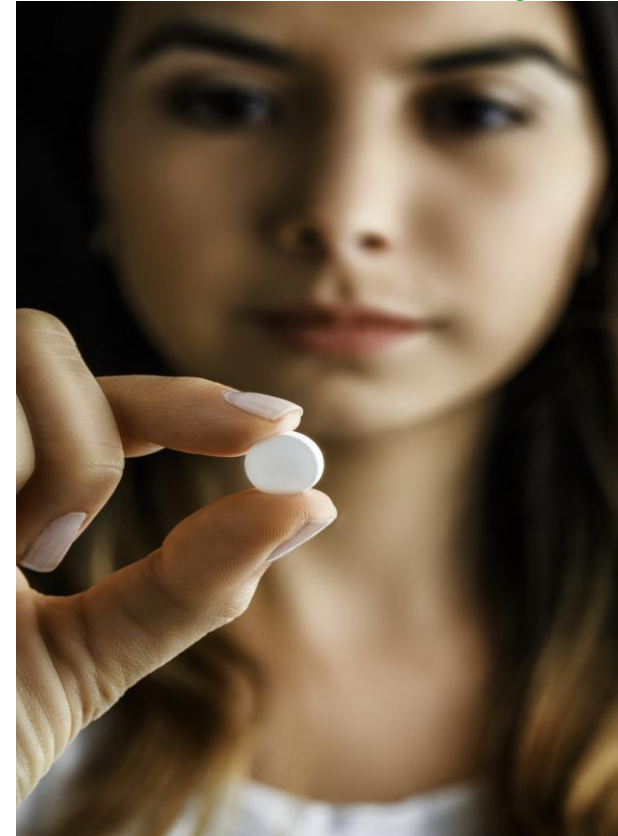
Henderson et al. 2021; Montfort et al. 2020



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Objectives of Current Study

- 1** To determine the overall national prevalence of high- and moderate- PE risk factors in birthing people and investigate associated racial differences
- 2** Investigate racial differences in trends of LDA use in women with moderate- or high-risk of PE
- 3** Evaluate the association of LDA-use with PE and preterm birth risk across racial groups.



Method



- **Data Source:**

- Nationwide Inpatient Sample (NIS: 2016-2021) from the U.S. Healthcare and Cost Utilization Project

- **Analysis:**

- Descriptive statistics was used to calculate the prevalence of moderate- and high risk factors for PE among pregnancy-associated hospitalizations
- Joinpoint regression was used to describe the Annual Average Percent Change (APC) in the rate of LDA-use by PE-risk group and racial categories
- Survey logistic regression was used to measure the association of LDA use with PE and selected secondary outcomes

Results

- Of 23,551,491 pregnancy-associated hospitalizations, 13.2% and 8.2% met the USPSTF criteria for moderate and high risk for preeclampsia respectively

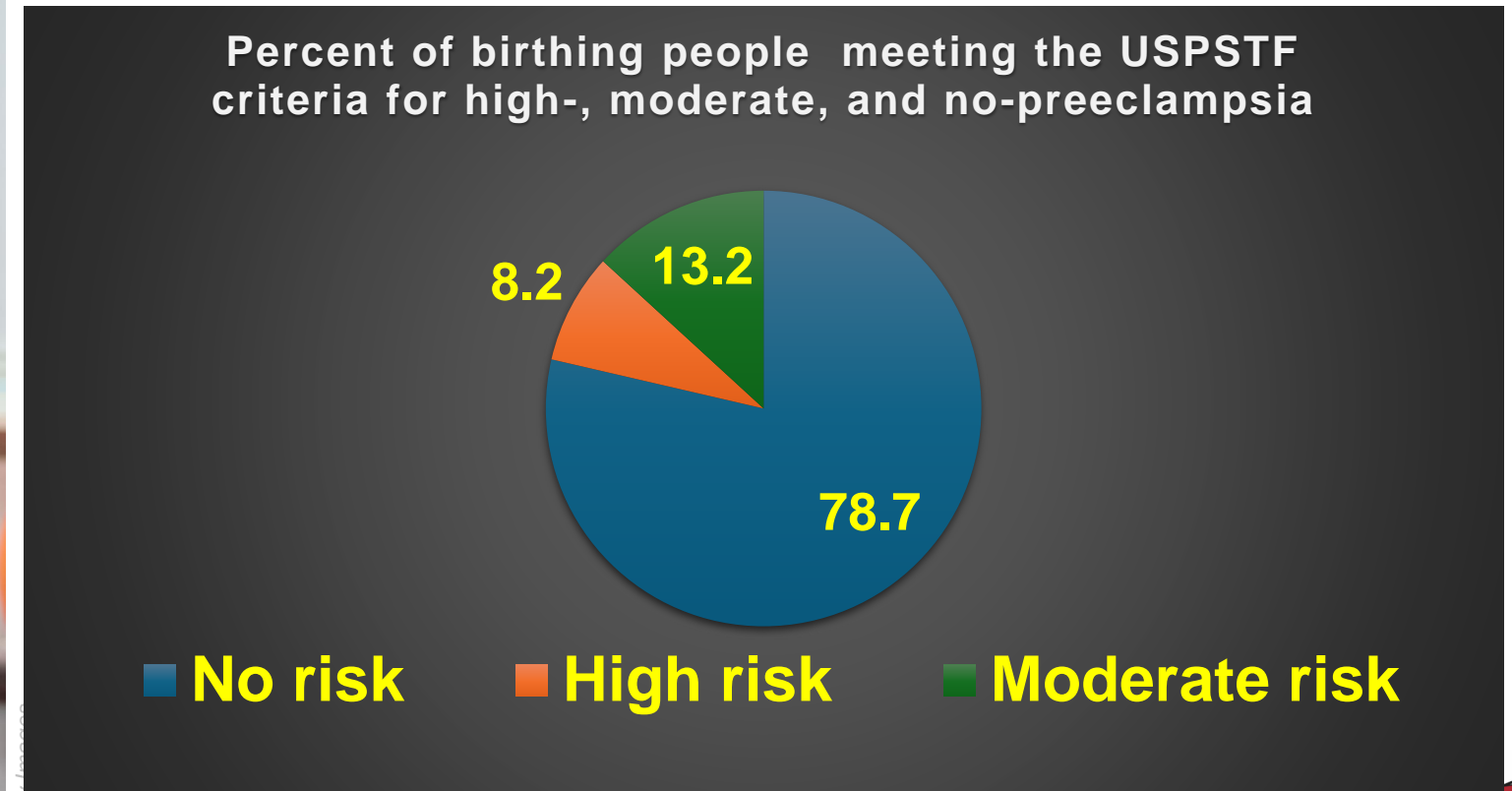


Figure 1: Percent of birthing people who met the criteria for Moderate- and High PE risk factors

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Results...



Black women are more likely to fall into the moderate and high-risk categories for preeclampsia compared to Hispanic and White women

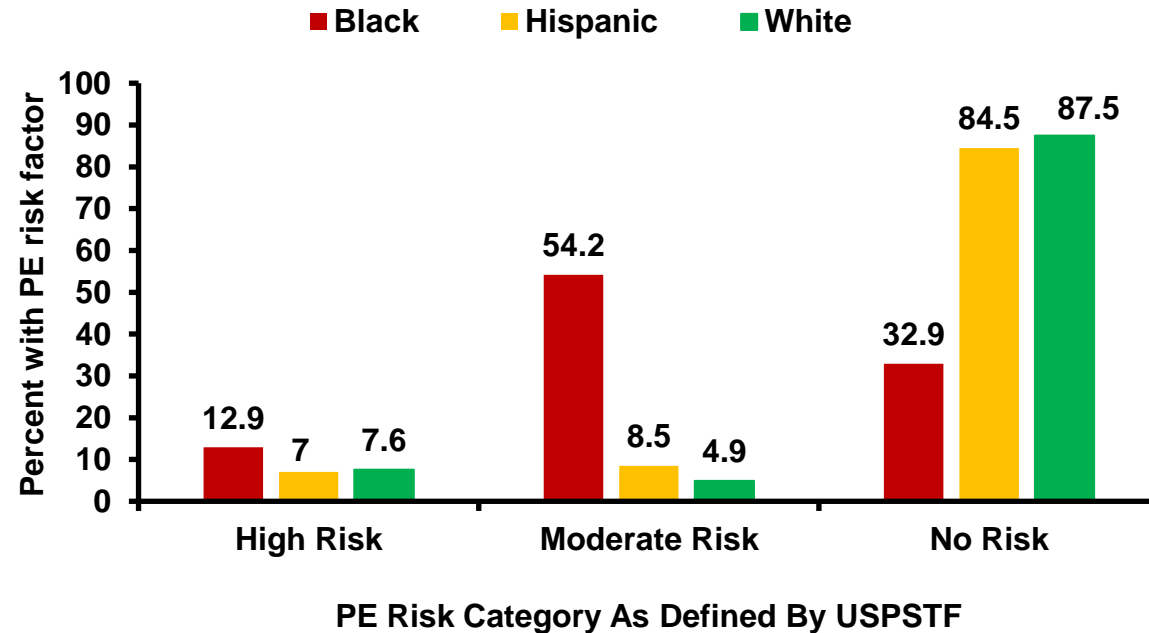


Figure 2: Racial difference in PE risk as defined by the United States Preventative Services Task Force (USPSTF)

Results...



Black women show a disproportionately higher prevalence of having multiple moderate risk factors for preeclampsia, particularly in the two and three risk factor categories

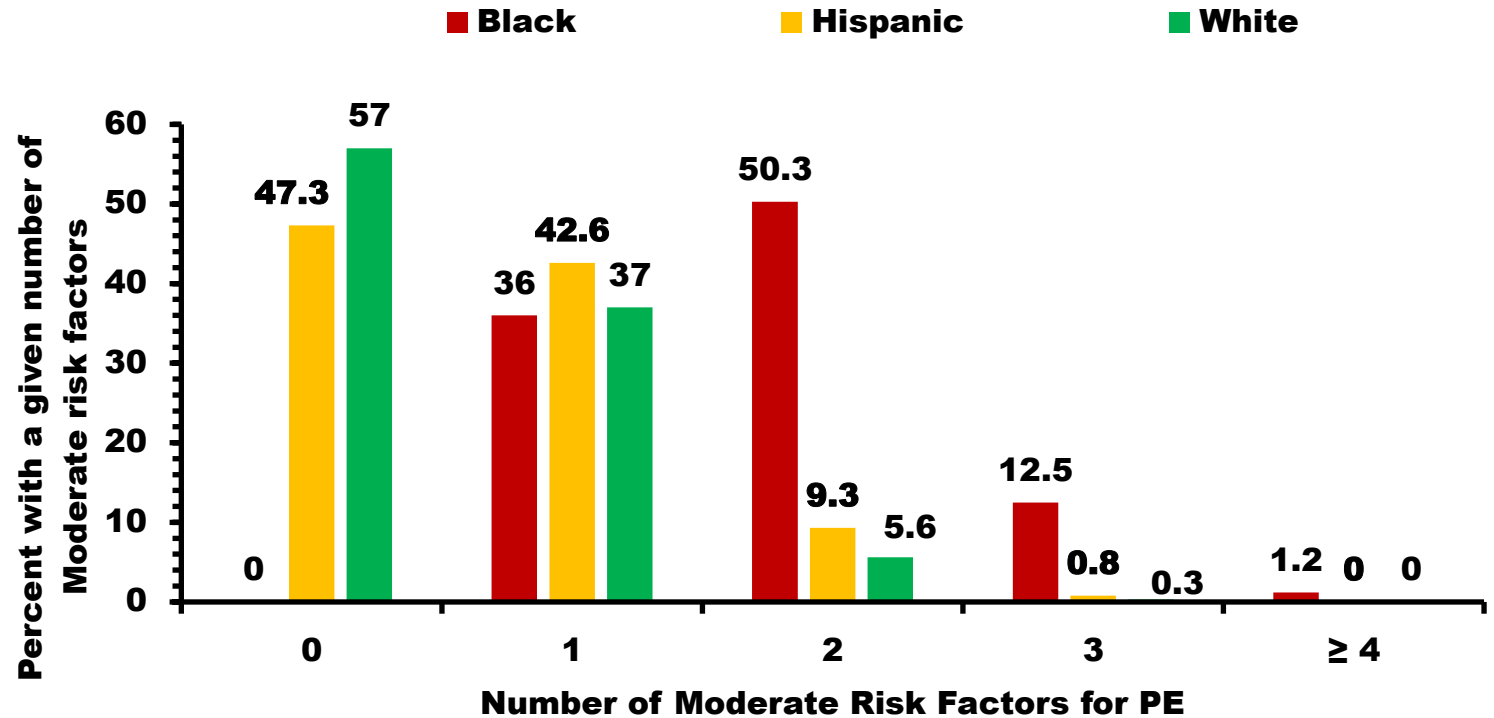


Figure 3: Racial difference in the number of moderate risk factors for Preeclampsia as defined by the United States Preventative Services Task Force (USPSTF)

Results...



There is a positive relationship between the number of moderate risk factors and the likelihood of both PE and HDP

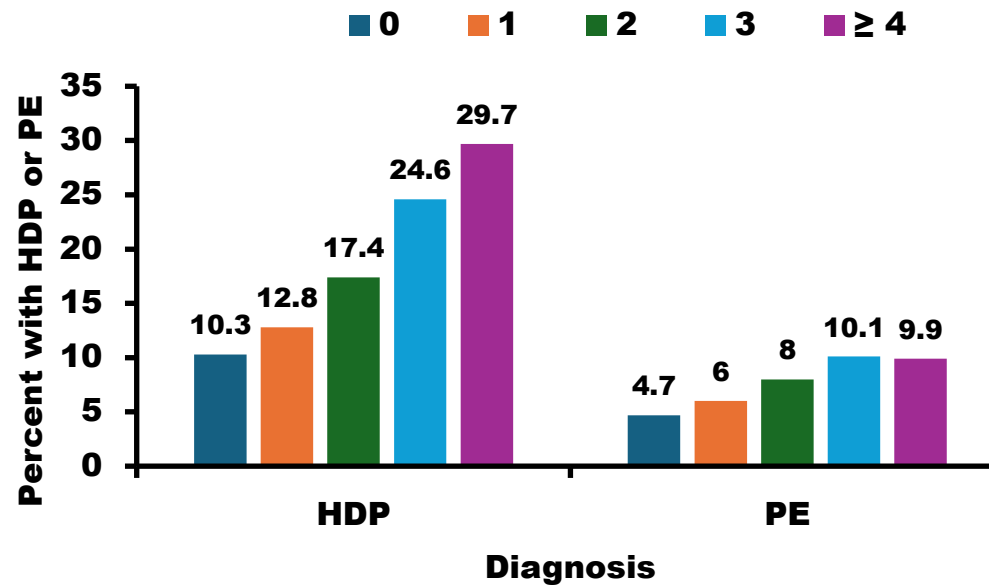


Figure 4: Prevalence of PE and HDP by the number of moderate risk factors for PE as defined by the United States Preventative Services Task Force (USPSTF)

Results...

- The overall LDA use was minimal, with only **8.6%** of birthing people with high PE risk and **1.9%** of birthing people with moderate-risk factors had evidence of LDA use.
- Racial disparities in LDA use were evident in birthing people with moderate and high risk factors for PE:
 - Among those with moderate risk of PE, only **1.6%** Black- and **1.8%** Hispanic birthing people used LDA compared to **3.1%** Whites women.
 - Among those with high risk of PE, only **7.4 %** Hispanic birthing people used LDA compared to **8.9%** of Whites and **9.3%** Blacks

Photo: Getty Images

Results...



During the study period, LDA usage increased annually by 51% (Whites), 65% (Blacks), and 70.9% (Hispanics) among birthing people with moderate risk of PE

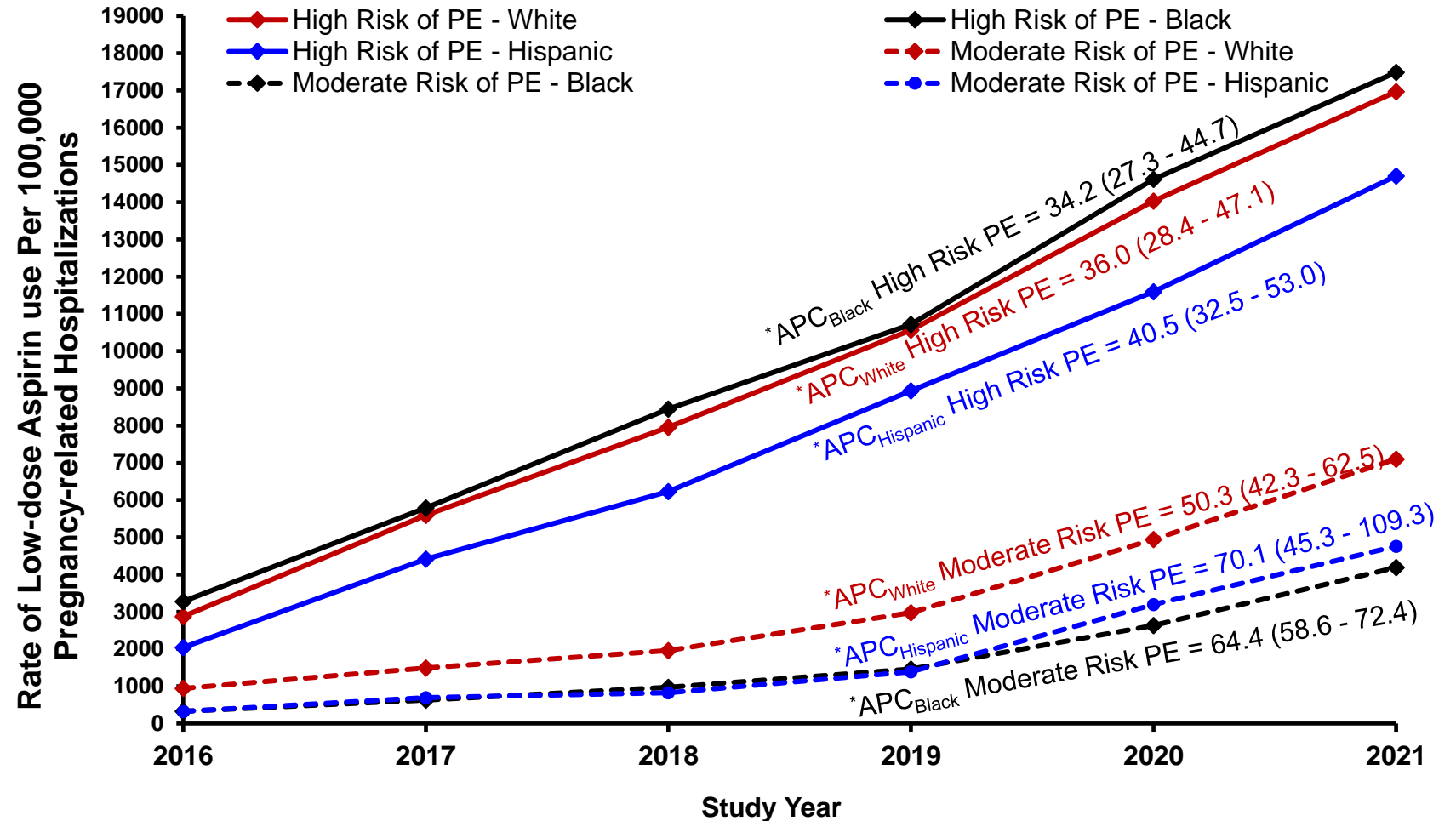


Figure 3: Rate of Low-dose Aspirin use Per 100,000 Pregnancy-related Hospitalizations Stratified By Preeclampsia Risk Category (High vs Moderate) and Maternal Race Group

Results...

- Birthing people at high risk of PE who used LDA are likely to experience lower risk of preterm birth than their counterparts who did not use LDA
- In analysis stratified by race, White, Hispanic, and Black Birthing people had 8%, 14%, and 17% lower risk of preterm birth
- We did not observe statistically significant PE risk reduction among those with documentation of LDA use.

Photo: Getty Images

Conclusion

- Significant racial disparities exist in the prevalence of high and moderate preeclampsia (PE) risk factors, with Black birthing people particularly vulnerable due to the accumulation of multiple moderate risk factors.
- There is a notable gap between knowledge and practice in the use of low-dose aspirin (LDA) for PE prevention.
- Action is needed to promote simple PE risk screening approaches and bridge the gap in implementing evidence-based LDA interventions.

Thank You!
Questions

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