

# Changes in the Prevalence Pregnancy Complications During the COVID-19 Pandemic: Is Increased Prevalence the New Normal?

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## Study Summary

**Study Question:** How has the prevalence of pregnancy complications changed following the COVID-19 pandemic?

**Study Population:** Pregnancies with a live or still birth outcome between January 1, 2018 and December 31, 2023 in the MarketScan Commercial or Multi-State Medicaid Database.

### Study Results



**Conclusion:** The prevalence of pregnancy complications increased during the COVID-19 pandemic in both Commercially-insured and Medicaid-insured pregnancies and remain elevated in 2023.

## Background

- The emergence of COVID-19 in the United States caused disruptions to perinatal care which may have impacted screening for pregnancy complications [1].
- Pregnancy has been shown to increase the risk for severe illness from COVID-19 infection [2,3]. COVID-19 infection during pregnancy is associated with an increased risk of preeclampsia, preterm birth, spontaneous abortion, and still birth[3,4].
- Recent research has also shown that COVID-19 infection during pregnancy may affect development of the placenta [5,6], which may result in increased risk of other pregnancy complications.

## Objective

- To characterize changes in the prevalence of pregnancy complications during the COVID-19 pandemic in the United States.

## Methods

- This study included pregnancies with a live or still birth outcome between 1/1/2018 and 12/31/2023 in the MarketScan Commercial and Multi-State Medicaid Databases. Patients were required to be female sex and aged 15-50 on the date of the pregnancy outcome to be included in the study.
- Continuous enrollment for 20 weeks prior to the pregnancy outcome was required; patients were followed for up to 42 days after the pregnancy outcome or until the end of the study period, whichever was earliest.
- Pregnancy complications were identified using diagnosis codes on medical claims. Preeclampsia/eclampsia, gestational diabetes, and placental complications were measured in the 20 weeks prior to the pregnancy outcome. Hemorrhage was measured on the date of the pregnancy outcome and in the 42 days following the pregnancy outcome. Preterm birth was identified in patients with a diagnosis code indicating <37 weeks gestational age on the date of the pregnancy outcome.

Figure 2. Prevalence of pregnancy complications 2018-2023 (A) Commercial (B) Medicaid

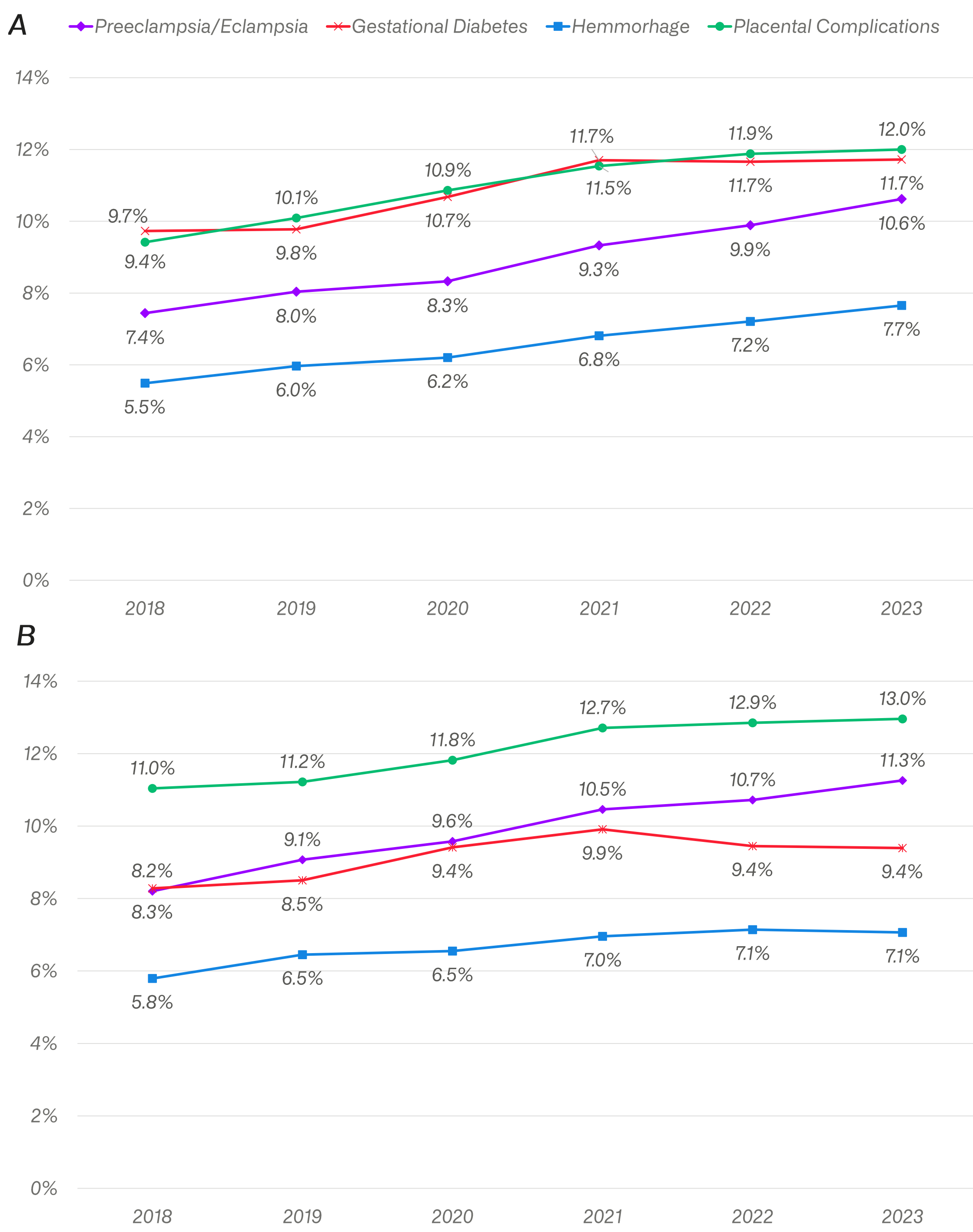
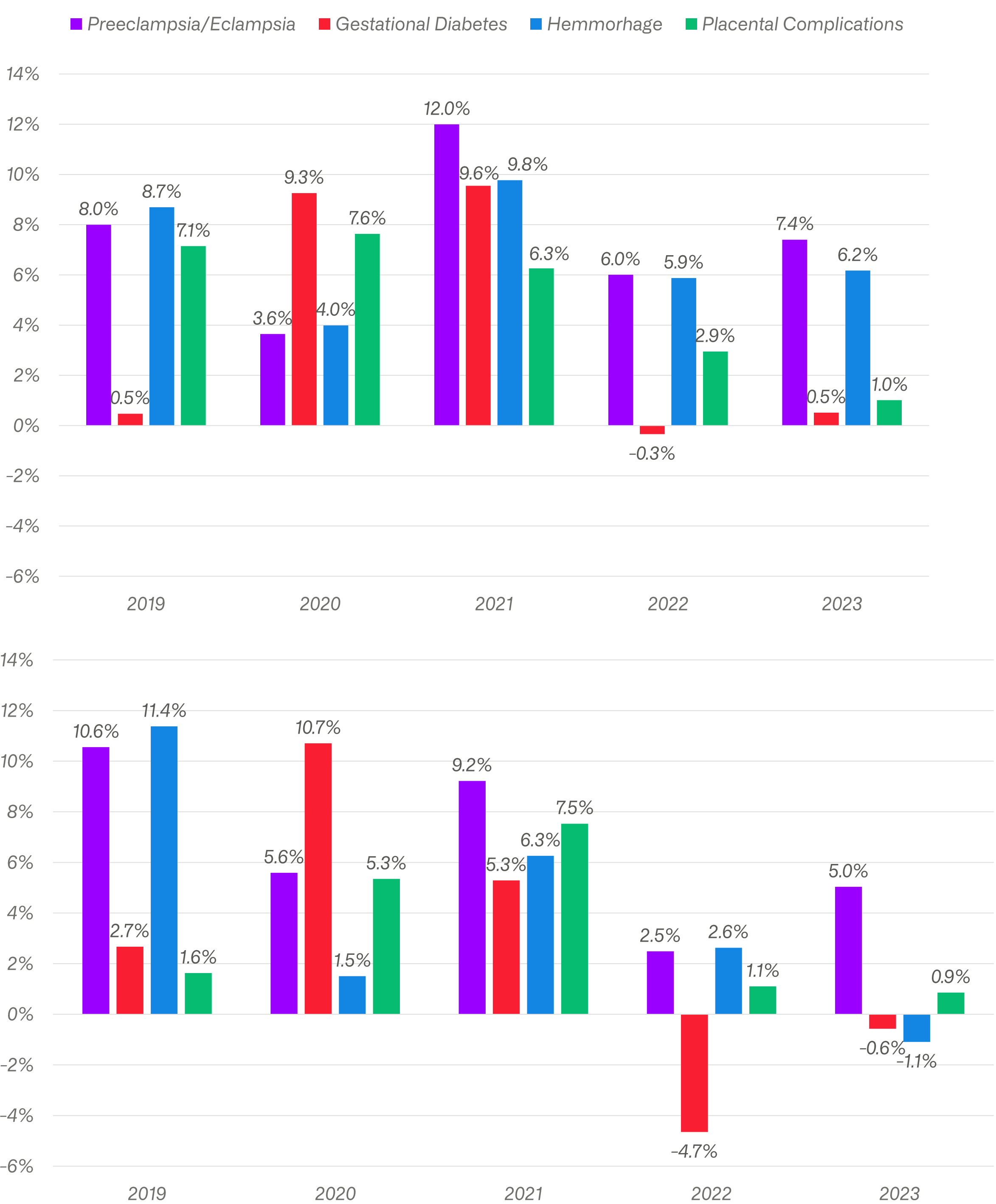


Table 1. Demographic Characteristics of Pregnancies 2018-2023				
Age Group (N, %)	Commercial (N=1,132,080)		Medicaid (N=1,061,212)	
	N	%	N	%
<18	3,106	0.3%	24,370	2.3%
18-34	839,614	74.2%	929,902	87.6%
35-44	285,333	25.2%	106,022	10.0%
45+	4,007	0.4%	918	0.1%
Race (N, %) <sup>†</sup>				
White	-	-	518,517	48.9%
Black	-	-	355,615	33.5%
Hispanic	-	-	79,636	7.5%
Other	-	-	53,007	5.0%
Unknown	-	-	54,437	5.1%
Region (N, %) <sup>†</sup>				
Northeast	172,822	15.3%	-	-
Midwest	238,806	21.1%	-	-
South	504,289	44.5%	-	-
West	196,936	17.4%	-	-
Unknown	19,207	1.7%	-	-
Health Plan Type (N,%)				
Comprehensive/Indemnity	17,210	1.5%	331,254	29.3%
EPO/PPO	525,298	46.4%	0	0.0%
POS/POS with capitation	124,482	11.0%	12,156	1.1%
HMO	144,490	12.8%	734,684	69.2%
CDHP/HDHP	289,936	25.6%	0	0.0%
Other/Unknown	24,802	2.2%	3,131	0.3%

CDHP: Consumer Driven Health Plan; EPO: Exclusive Provider Organization; HDHP: High Deductible Health Plan; HMO: Health Management Organization; MCM: Major Congenital Malformation; POS: Point of Service; PPO: Preferred Provider Organization; SD: Standard Deviation; SMD: Standardized Mean Difference

Figure 2. Annual percent change in prevalence of pregnancy complications 2018-2023 (A) Commercial (B) Medicaid



## Results

- In total, 1,132,060 commercially-insured pregnancies and 1,061,212 Medicaid-insured pregnancies were included in this analysis. In both populations, most pregnancies were in patients aged 18-34 (74.2% Commercial; 87.6% Medicaid) (Table 1).
- The most common pregnancy complications during the study period were placental complications (9.4-12.7%) and gestational diabetes (9.7-11.4%) in the commercially-insured pregnancies and placental complications (11.0%-13.0%) in Medicaid-insured pregnancies (Figure 1).
- The prevalence of each pregnancy complication increased during the study period in both the commercially-insured and Medicaid insured pregnancies. A 42.7% increase in preeclampsia/eclampsia was observed in the Commercial population and a 37.3% increase was observed in the Medicaid population. Hemorrhage increased 39.5% in Commercial and 21.9% in Medicaid, placental complications increased 27.4% in Commercial and 17.4% in Medicaid, and gestational diabetes increased 20.5% in Commercial and 13.5% in Medicaid (Summary Figure).
- The prevalence of most pregnancy complications increased each year of the study period. In commercially-insured pregnancies, the largest annual percent change was observed in 2021 vs. 2020 for all complications except placental complications. In Medicaid-insured pregnancies, the largest annual percent change in was observed in 2019 vs. 2018 for preeclampsia/eclampsia and hemorrhage, 2020 vs. 2019 for gestational diabetes, and 2021 vs. 2020 for placental complications (Figure 3).

## Limitations

- This study was based on pregnancies with commercial or Medicaid health coverage; results may not be generalizable to pregnancies with other types of insurance or without health insurance coverage.
- Analyses were descriptive in nature. No statistical adjustment was performed and no statistical comparisons were made to determine if trends in rates of pregnancy complications differed before and after the COVID-19 pandemic.

## Conclusions

- The prevalence of preeclampsia/eclampsia, gestational diabetes, hemorrhage, and placental complications have increased during the COVID-19 pandemic in both Commercially-insured and Medicaid-insured pregnancies.
- In 2023, the prevalence of pregnancy complications remained elevated relative to the period prior to the COVID-19 pandemic in the United States. Future research is necessary to determine if the increased prevalence of pregnancy complications during the pandemic continues in the post-pandemic period.

### References

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### Disclosure

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