

# Deductible Double Jeopardy: Patients May Pay More Out of Pocket When Pregnancy Crosses 2 Years

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**H**igh-deductible health plans (HDHPs) have grown in prominence, even as US households report financial burden from out-of-pocket medical spending (cost sharing).<sup>1,2</sup> Many Americans lack the liquid assets necessary to cover potential out-of-pocket costs, as fewer than half of nonelderly 1-person households could cover a \$2000 bill.<sup>3</sup> A reported 23% of American adults are underinsured: Their insurance does not provide them adequate access to health care.<sup>4</sup>

Commercial health plans with an annual high-deductible design expose patients to greater out-of-pocket obligations early in the plan year. This cost-sharing design can yield higher out-of-pocket costs when an episode of care occurs across 2 plan years, rather than within 1, because patients face out-of-pocket limits for both plan years. Maternity care is a prime example of this, as patients utilize care in the months leading up to inpatient delivery and childbirth is the most common reason for an inpatient stay among the commercially insured.<sup>5</sup> This spending difference washes out over time only if enrollees reach their out-of-pocket limit in consecutive plan years, which is uncommon.<sup>6</sup>

In 2013, *New York Times* journalist Elisabeth Rosenthal wrote about women she spoke with regarding this “deductible double jeopardy”—paying their full out-of-pocket limit 2 years in a row due to maternity care.<sup>7</sup> Consumer website Investopedia, in its guide “Insurance and Giving Birth: What You Need to Know,” claims that December is the “ideal month to get pregnant” so that all care will count toward 1 out-of-pocket maximum.<sup>8</sup> Some online suggestions, from health reimbursement arrangement company Take Command and commenters on Reddit, include asking one’s care provider to schedule an induction to ensure that the birth and all related care are finished and billed before the new year.<sup>9,10</sup>

This study describes out-of-pocket costs incurred for delivering mothers by their delivery month, exploring the concern that the annual high-deductible plan design may produce arbitrary inequities in out-of-pocket costs among enrollees receiving similar services.

## ABSTRACT

**OBJECTIVES:** This study explores the concern that annual high-deductible commercial insurance plan design may yield higher out-of-pocket costs when an episode of maternity care spans 2 years, exposing patients to their cost-sharing limits twice during their episode of care.

**STUDY DESIGN:** Cross-sectional study of Health Care Cost Institute commercial claims.

**METHODS:** The study sample comprises 1,379,300 deliveries among high-deductible health plan enrollees in years 2012 through 2021. Patients’ mean cost sharing is calculated across all service types for 3 time periods: (1) delivery hospitalization, (2) maternity episode from 40 weeks prior to delivery hospitalization through 12 weeks after discharge, and (3) extended period spanning 3 years from January of the year before delivery through December of the year after delivery.

**RESULTS:** For each of the 3 episode measurements, mean out-of-pocket spending is highest among those who deliver in January and declines in each subsequent month until August and September (the delivery months with most pregnancy and postpartum periods within the same year), then flattens for the remainder of the year. Mean cost sharing for the maternity episode was \$6308 in January and \$4998 in December, a difference of \$1310. Patients delivering in January also had mean out-of-pocket costs \$1491 greater for delivery hospitalization and \$1005 greater over the 3-year period than patients delivering in December.

**CONCLUSIONS:** Higher out-of-pocket spending is observed when patients face their cost-sharing limits twice within an episode of maternity care, and this difference persists even when evaluating 3 calendar years of patients’ out-of-pocket spending.

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### TAKEAWAY POINTS

This study explores the concern that annual high-deductible commercial insurance plan design may yield higher out-of-pocket costs when an episode of maternity care spans 2 years.

- ▶ Out-of-pocket spending for the 40 weeks of pregnancy and 12 weeks postpartum was \$1310 greater for mothers delivering in January (presumably having pregnancy span 2 plan years) than in December.
- ▶ Over the 3 years from January of the year before delivery through December the year after delivery, those with pregnancy spanning 2 years have over \$1000 more in out-of-pocket spending, suggesting that differences in out-of-pocket spending by delivery month may not fully wash out over time.

## METHODS

### Data

The study sample comprises HDHP enrollees with delivery hospitalizations identified among Health Care Cost Institute commercial claims from Aetna, Humana, and Blue Health Intelligence over 10 years from 2012 through 2021 ([eAppendix](#) [available at [ajmc.com](#)]). These data include commercial plans in the self-funded and fully insured markets and exclude Affordable Care Act marketplace plans. The claims include information about the type of service rendered, service date, and the plan payment, deductible, coinsurance, and co-payment components of the allowed amount. Patients' spending is summed across professional, outpatient, and inpatient claims, inclusive of all service types, for 3 time periods: (1) delivery hospitalization, (2) maternity episode from 40 weeks prior to delivery hospitalization through 12 weeks after discharge, and (3) extended period spanning 3 years from January of the year before delivery through December of the year after delivery.

The plan year start date, HDHP status, and an enrollee's coverage as a single person or part of a family are not provided in our data. We assumed that insurance plans in our sample align with the calendar year, running January through December. We based our analysis on individual enrollee spending, consistent with plan design for single coverage or family coverage with individual deductibles (rather than aggregate family deductible). HDHP enrollment status was assigned based on deductible cost-sharing patterns in the calendar year of delivery and the Internal Revenue Service (IRS) definition of an HDHP that is used to determine eligibility for making tax-exempt health savings account (HSA) contributions (as summarized in the [eAppendix](#)). All medical deductible spending was summed for each patient in the calendar year of delivery, and a patient was determined to be enrolled in an HDHP if the IRS minimum deductible threshold for a single person was met or exceeded for the calendar year. This categorization was conducted using nominal dollars.

### Analysis

Mean (SE) cost sharing and proportion of the allowed amount representing cost sharing are measured by delivery month for each of the 3 time periods. This primary analysis used the available sample sizes for each of the 3 maternity episode definitions, with

the initial sample of hospitalizations decreasing to include only those with continuous enrollment for the maternity episode and the 3-year extended period. Analyses were conducted using Stata 17 (StataCorp LLC), and nominal dollars were adjusted to 2021 US\$ using the Consumer Price Index for All Urban Consumers for these analyses.

Three sensitivity analyses were conducted. First, the primary analysis was repeated for enrollees in all health plans, not restricted to those identified as being in HDHPs. This was

to see whether the trend holds across plan types, given potential classification error in our method of identifying HDHP enrollees. Second, the primary analysis was repeated for the 3 maternity episode definitions using a consistent sample of patients qualifying for the most restrictive episode definition, the 3-year extended period. This assessed potential biases introduced by using inconsistent samples for each episode definition in the primary analysis. Third, because enrollees giving birth and newborns may share a family insurance plan, we assessed whether there were cost-sharing patterns for newborns that could offset the cost-sharing patterns we observed for delivering enrollees. We measured mean cost sharing for newborns' medical care by month of delivery for the first 6 and 12 months of life. This analysis was limited to an aggregated sample by inability to match newborns to enrollees giving birth and reliably categorize newborns into HDHP or non-HDHP plans.

## RESULTS

The study sample includes 1,379,300 deliveries among HDHP enrollees. Sixty percent were in self-funded plans, and product types included preferred provider organization (64%), point of service (29%), health maintenance organization (5%), and exclusive provider organization (2%) plans. Deliveries were predominantly vaginal (55%) and uncomplicated cesarean (22%) modalities. The maternity episode and 3-year period were observed for 773,328 and 261,463 of these deliveries, respectively.

Mean (SE) allowed amounts were \$14,973 (\$9) for deliveries, \$22,387 (\$20) for maternity episodes, and \$29,105 (\$55) for 3-year periods. Maternity episode mean (SE) cost sharing was greater for January (\$6308 [\$11]) than for December (\$4998 [\$9]) deliveries, a difference of \$1310 ([Figure 1](#)). Patients delivering in January also had mean out-of-pocket costs \$1491 greater for delivery hospitalization and \$1005 greater over the 3-year period than patients delivering in December. [Figure 1](#) illustrates that mean out-of-pocket spending is highest among deliveries in January and declines in each subsequent month until August and September, then flattens for the remainder of the year for each of the 3 episode measurements.

Correspondingly, the mean (SE) share of the maternity episode allowed amounts attributable to cost sharing was higher for deliveries

in January (33% [0%]) than in December (26% [0%]) (Figure 2). Cost sharing made up 34% and 21% of delivery hospitalization allowed amounts in January and December, respectively, and a gap of 5 percentage points persisted over the 3-year period.

The main findings held when the 3-year sample was used to measure spending for each episode definition. The same seasonal pattern was also observed among all plans, albeit with a muted magnitude of effect. Individuals with January births experienced greater mean out-of-pocket costs than those with December births for the delivery (+\$660), maternity episode (+\$700), and 3-year period (+\$386) among all plans. The primary exhibits are replicated for these alternative sample definitions in the eAppendix. There is no evidence of a seasonal trend in cost sharing for newborns by delivery month that offsets the seasonal trend for delivering mother across all plan types (eAppendix).

## DISCUSSION

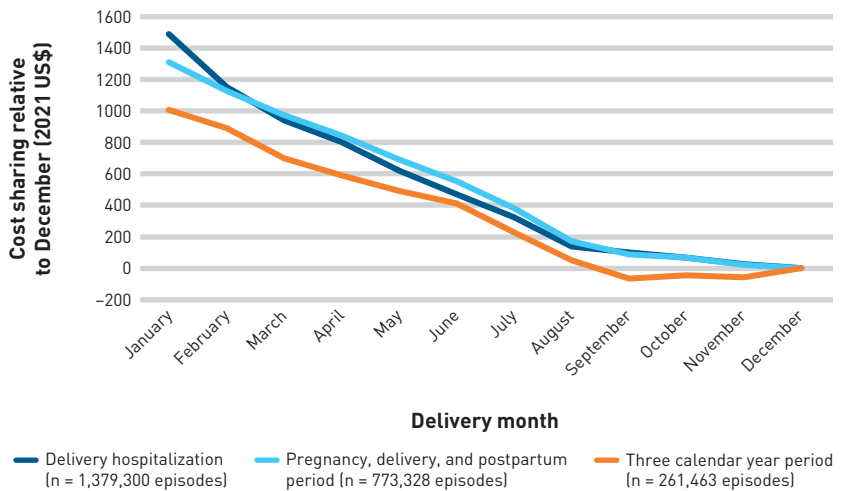
Findings from this claims-based observational study demonstrate that annual cost-sharing cycles may yield arbitrary differences in out-of-pocket burden across enrollees receiving maternity care and persist for the delivering patient even over a 3-year period. The pattern illustrated in Figure 1 is consistent with the concept that out-of-pocket spending is lowest when the maternity care episode occurs within 1 calendar year, which we assume serves as a proxy for plan year. These inequities in out-of-pocket spending are an intuitive result when enrollees have a high-cost medical episode and do not otherwise consistently reach their out-of-pocket maximum every year. The mean allowed amounts that we observe indicate that the maternity episode, roughly 12 months of pregnancy though postpartum period (\$22,387), accounts for three-fourths of the enrollee's mean 3-year medical spending (\$29,105), demonstrating that the high utilization during the maternity episode is an anomaly for this subset of enrollees and they may not individually reach out-of-pocket limits in years outside the maternity episode.

Higher out-of-pocket obligations, including those incurred when a maternity episode spans 2 plan years, can also pose collections challenges for hospitals and physicians. Findings of studies on hospital and physician collections suggest that there are substantial shortfalls in collections on out-of-pocket payments

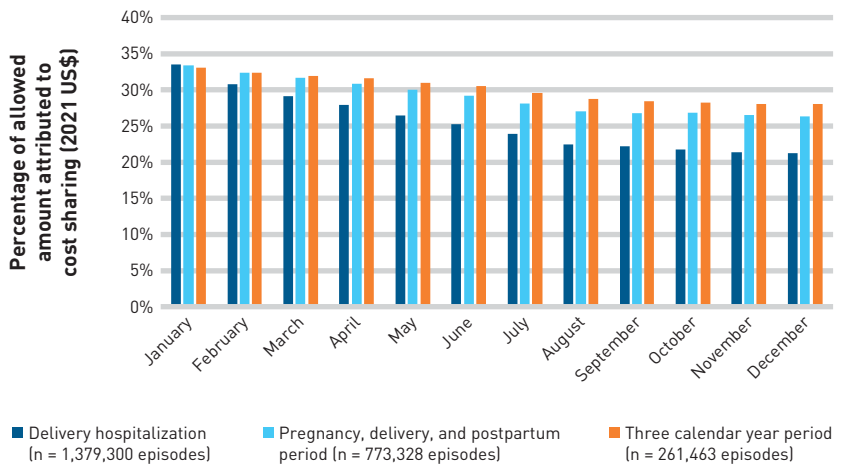
from insured patients and that the bigger the bill, the lower the realized payment rates.<sup>11,12</sup>

To address these concerns, policy experts have proposed setting cost-sharing limits at shorter intervals than annually, such as monthly or rolling limits.<sup>13,14</sup> Researchers in 2022, through a cross-sectional study of national commercial health insurance claims data, suggested that a monthly out-of-pocket cap of \$500 would affect 24.1% of the commercially insured.<sup>15</sup> Of this group, the median annual in-network out-of-pocket cost would decrease from \$2024.66 to \$1102.61 under the proposed monthly limit.<sup>15</sup> HDHP

**FIGURE 1.** Excess Cost Sharing by Delivery Month Relative to December Baseline for High-Deductible Health Plan Enrollees Over 3 Maternity Episode Definitions



**FIGURE 2.** Mean Percentage of Maternity Episode Allowed Amount Attributed to Cost Sharing for High-Deductible Plan Enrollees Over 3 Maternity Episode Definitions



## TRENDS FROM THE FIELD

enrollees seeking maternity care over 2 plan years would likely see a reduction in their out-of-pocket expenses under such a plan design change. This plan design change would transfer a greater share of spending to plans and, in turn, likely raise premiums.

### Limitations

Limitations include not directly observing plan year, HDHP status, family groups, and HSA benefits. These limitations may introduce measurement error, although we have tried to address them and consider the potential biases, and we note caveats to the interpretation of our findings accordingly.

Our assumption that all plans in our sample have a plan year that aligns with the calendar year may not be accurate for all enrollees, although it likely applies to the majority of our sample. For employer-sponsored plans in 2021, KFF reports that plan years began in January for 73% of covered workers.<sup>16</sup> Further, our method of identifying HDHP enrollees is structured to align with a January plan start, so we may be identifying HDHP enrollees in plans with a January start well in our primary analytic sample and misclassifying enrollees in HDHP plans with other start months as non-HDHP and excluding them from our primary analysis.

We do not observe families (only individuals) in our data. Our measurement is accurate for those with individual coverage and for those with family coverage where deductibles and out-of-pocket limits are set for each individual. However, some family coverage has cost-sharing limits set for the family rather than individual, and this study does not capture that. KFF reports that of those in family plans through employer-sponsored coverage, 55% had a combined deductible and 32% had a separate deductible for each individual of all plans in 2021.<sup>16</sup> For enrollees in family HDHPs, 73% had a combined deductible and 27% had a separate deductible.<sup>16</sup> Although some of the higher costs for maternity episodes spanning 2 years may wash out through spending by other members of a family plan with an aggregate deductible, those in individual plans or in family plans with individual deductibles would not experience this washout. Notably, aggregate family out-of-pocket limits are higher, and this washout could occur only if another family member experiences very costly care, which is uncommon for the typical demographics of a young family.<sup>16,17</sup>

As we do not observe enrollment and employer contributions to HSAs, we do not know the net out-of-pocket burden patients face. It is also plausible that individuals anticipating a pregnancy may optimally choose their plans based on premiums and expected out-of-pocket costs, accounting for their HSA employer benefits in a way that mitigates the concerns about spending differences by pregnancy timing. This caveat applies where individuals have a strong understanding of benefit design, have a wide range of insurance options, and experience a planned pregnancy.

Bundled payment arrangements are not explicitly observed, although the 1% of delivery episodes excluded due to zero allowed amounts may represent bundled payment arrangements.

## CONCLUSIONS

This cross-sectional analysis of commercially insured delivering mothers suggests that higher out-of-pocket spending is incurred when pregnancy spans 2 insurance plan years. These spending differences persist unless enrollees' out-of-pocket limits are met in each year. Changing cost-sharing limits to shorter intervals, such as months, may reduce potential arbitrary differences in cost sharing that occur due to pregnancy timing. ■

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## eAppendix

### Identifying Labor and Delivery Services

Patients with labor and delivery hospitalization were identified as those with an inpatient claim with a DRG indicating a live birth event: 766, 775, 767, 765, 774, 768, 783, 784, 785, 786, 787, 788, 796, 797, 798, 805, 806, 807.

### Attrition Table

Sample Selection Steps	N Births Remaining	% Births Remaining
Inpatient hospital admissions with DRG indicating a live birth event	4,677,676	100%
Exclude enrollees in plan types on birth event other than HMO, EPO, PPO, POS or with > 1 plan type on birth event	4,573,494	98%
Exclude enrollees over 65 on birth event (data entry error from source)	4,573,466	98%
Exclude birth events with more than one DRG on the birth event date	4,529,711	97%
All medical claims in study timeframe (3 calendar years surrounding the birth event) are primary coverage only (i.e., no secondary payer flag)	4,283,108	92%
Birth event has valid enrollment data during month of birth event and is not too close to prior birth event	4,232,359	90%
Birth event has allowed amount > 0 and non-negative cost-sharing	4,183,563	89%
High-deductible health plan enrollment in the year of delivery	1,379,300	29%

### Labor and Delivery Inpatient Stays

The HCCI claims do not have the actual dates of service accurately captured for each line within a given inpatient stay, only admission and discharge dates for the full length of stay. This prevented us from directly observing delivery date and how cost-sharing is applied by service dates within an inpatient stay. In the absence of detailed services dates, we used inpatient stay admission and discharge dates to approximate a delivery date, calculate the pregnancy and postpartum time periods, and derive the delivery month.

Long inpatient stays for labor and delivery are observed in our sample and we developed an approach to approximating delivery date that accounts for this. The median length of stay is three days and the 95<sup>th</sup> percentile is six days. The length of stay is one week or longer for two percent of the sample. For stays that were one week or shorter (98% of the sample) we use the discharge date as the delivery date proxy, and for longer stays (2% of the sample) we used the seventh inpatient day as the delivery date proxy.

We observe that 0.3% of inpatient stays for labor and delivery have an admission in one year and discharge in the following year. Without information on spending by service date within the

inpatient stay (nor how such spending gets attributed to a particular episode date for billing purposes), we use the method described above to assign a delivery date proxy and inpatient expenditures are allocated to that delivery date proxy's month-year.

### **High-Deductible Health Plan (HDHP) Enrollment Definition**

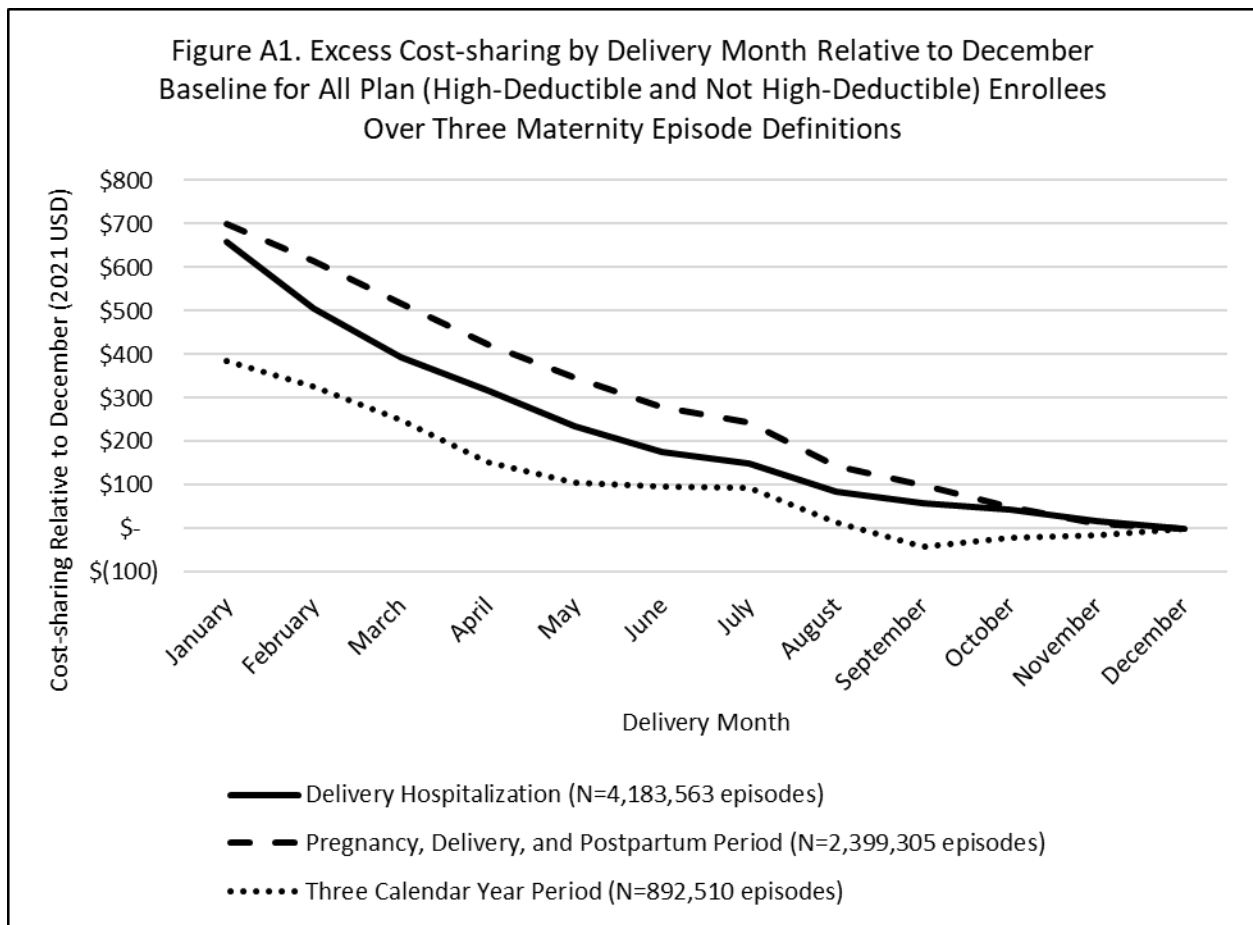
HDHP enrollment status was assigned based on deductible cost-sharing patterns in the year of delivery, and Internal Revenue Service (IRS) definition of a HDHP that is used to determine eligibility for making tax-exempt Health Savings Account (HSA) contributions. The table below lists the IRS minimum deductible threshold to qualify as being enrolled in a HDHP as a single person. All medical deductible spending was summed for each patient in the calendar year of delivery, and a patient was determined to be enrolled in a HDHP if the IRS minimum deductible threshold for a single person was met or exceeded for the calendar year. This categorization was conducted using nominal dollars.

<b>Year</b>	<b>IRS Minimum Deductible Threshold Definition for HSA Eligibility for a Single Person</b>
2012	\$1,200
2013	\$1,250
2014	\$1,250
2015	\$1,300
2016	\$1,300
2017	\$1,300
2018	\$1,350
2019	\$1,350
2020	\$1,400
2021	\$1,400

### Sensitivity Analysis A: Plan Type

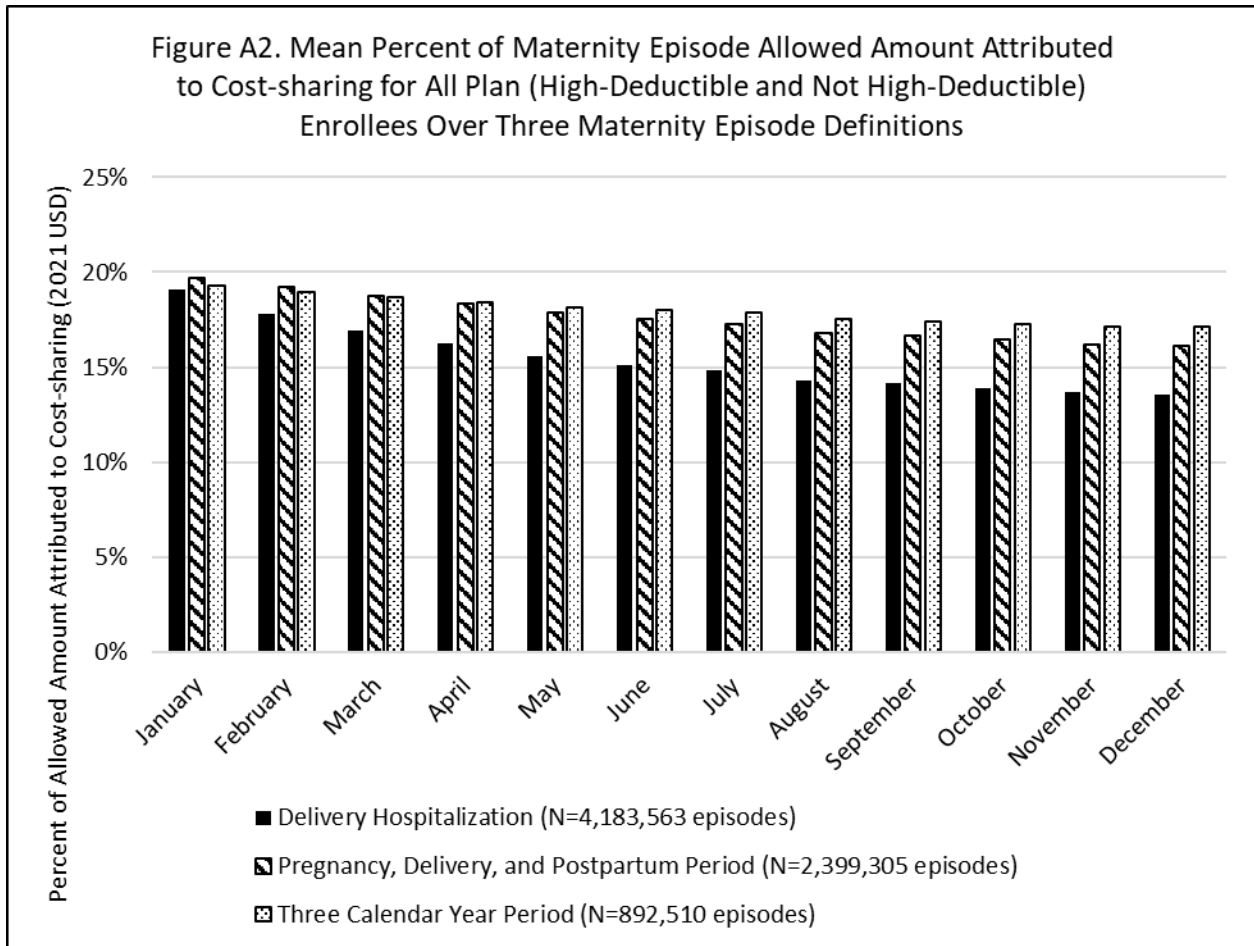
The primary analyses include only episodes for patients identified (using the methods described above) as enrolled in a high-deductible health plan. We conducted sensitivity analyses that includes all plan types: high-deductible and not high-deductible plan enrollees. In Figures A1 and A2, we observe patterns consistent with our primary findings, albeit with a muted magnitude of effect.

In Figure A1, as in the main analysis, spending is highest for January deliveries and declines until August/September deliveries (those with all maternity care in one calendar year) then plateaus for the remainder of the months. We observe that deliveries in January have mean out-of-pocket spending \$660, \$700, and \$386 greater than December deliveries for the delivery, maternity episode, and three-year period, respectively. As expected, these differences are narrower than those observed when evaluating only plans we identify as high-deductible plans.



In Figure A2, we observe that the patients delivering in January, on average, pay a greater share of allowed amounts out-of-pocket than those delivering in December. This is a similar pattern as in the main analysis, but when looking across all plans we see that the cost-sharing level is lower overall. At the mean, 33% of allowed amounts for January deliveries in high-deductible plans

were paid out-of-pocket, while only 19% of a January delivery is paid out-of-pocket when we consider all plans. For December deliveries across all plans, mean cost-sharing accounts for 14% of allowed amounts; a 5-percentage point January-December difference compared to the 13-percentage point difference in the main analysis. Looking at maternity services across all plans, January deliveries pay 20% of allowed amounts as cost-sharing and December deliveries pay 16% of allowed amounts as cost-sharing; a 4-percentage point difference compared to the 7-percentage point difference in the main analysis. Looking over three calendar years, January deliveries pay 19% of allowed amounts as cost-sharing and December deliveries pay 17% of allowed amounts as cost-sharing; a 2-percentage point difference compared to a 5-percentage point difference in the main analysis.





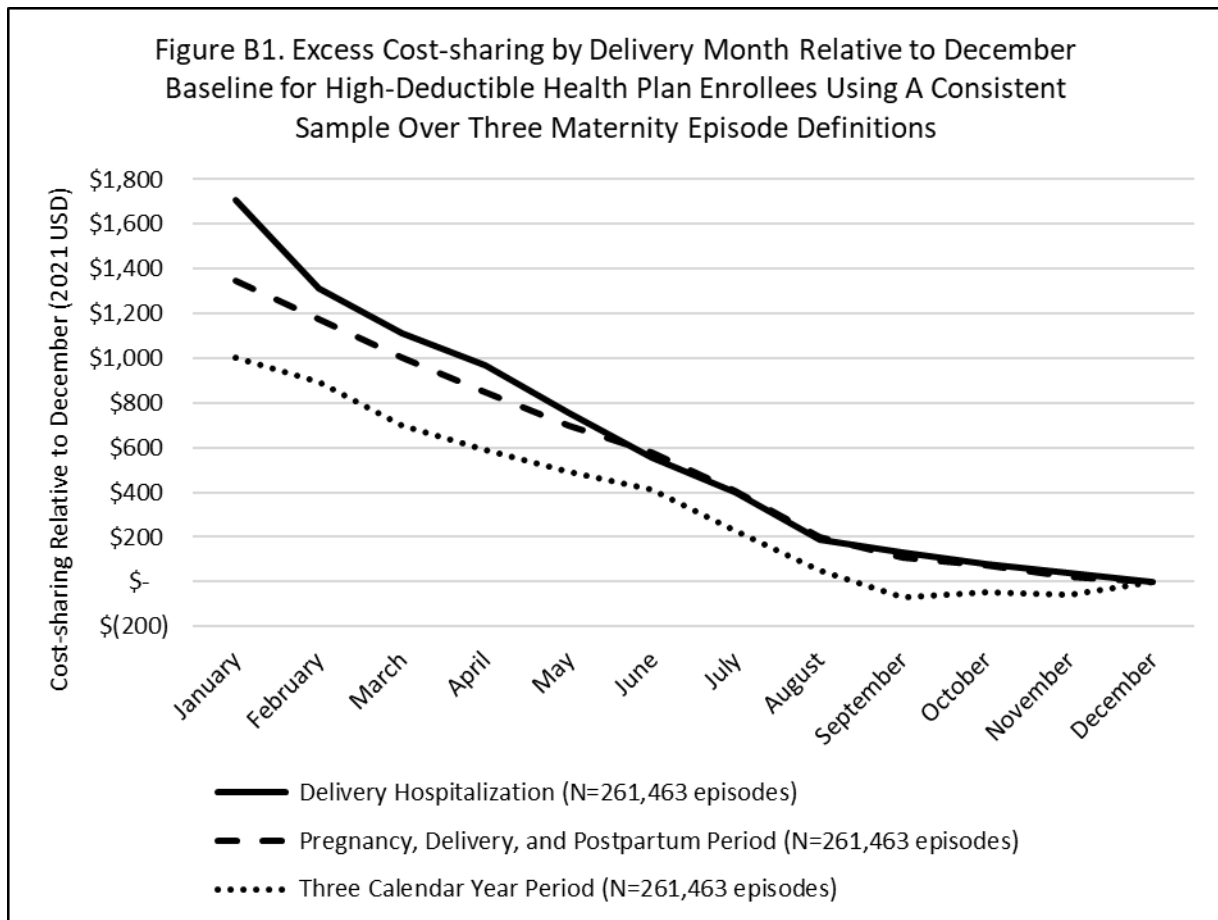
### Sensitivity Analysis B: Consistent Sample

The primary analyses use the available sample sizes for the three maternity episode definitions.

- Delivery Hospitalization (N=1,379,300 episodes)
- Pregnancy, Delivery, and Postpartum Period (N=773,328 episodes)
- Three Calendar Year Period (N=261,463 episodes)

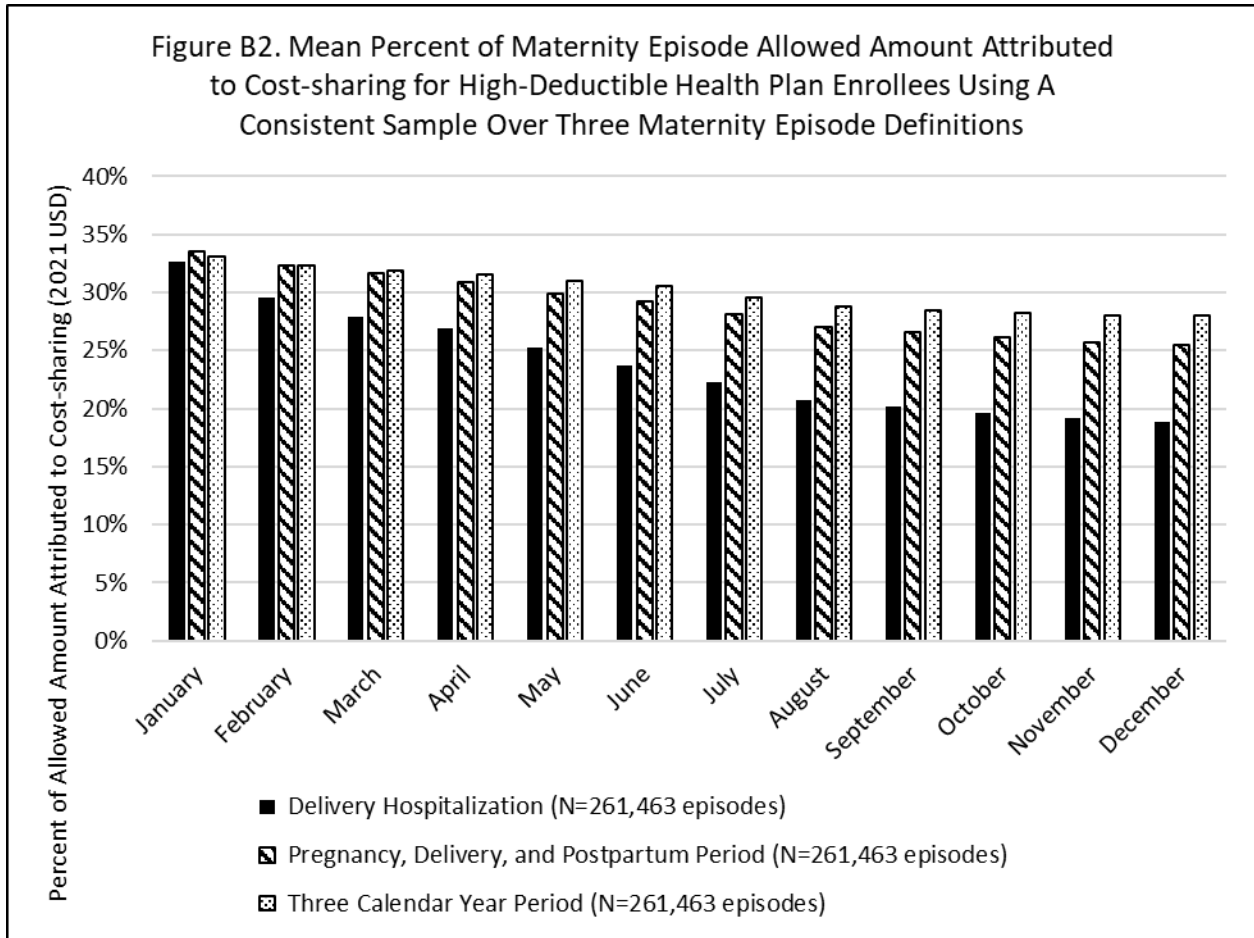
To assess potential biases introduced by using inconsistent samples, we conducted sensitivity analyses measuring our outcomes for the three maternity episode definitions using a consistent sample of patients qualifying for the most restrictive episode definition (N=261,463). Figures B1 and B2 suggest that the main findings hold for this more restrictive sample definition.

In Figure B1, we observe that deliveries in January have mean out-of-pocket spending \$1,707 and \$1,346 greater than December deliveries for the delivery and maternity episode. These values are higher than the main analysis for delivery (\$1,491) and very similar to the main analysis for maternity episode (\$1,310). Results are identical to the main analysis for the three-year period (\$1,005) by design as it is the same sample. Notably, the pattern from the main analyses holds where spending is highest for January deliveries and declines until August/September deliveries (those with all maternity care in one calendar year) then plateaus for the remainder of the months.



In Figure B2, we observe that the patients delivering in January, on average, pay one-third (33%) of the allowed amount for delivery, maternity episode, and three-year period. There is a decline

in the share of allowed amount paid for the remaining delivery months, with the greatest decline in share of delivery and more modest declines when evaluating the longer time periods of maternity episode and three calendar years. This indicates that there is some washout over time, but the gap does not seem to fully close. Patients delivering in December pay a mean of 19% of allowed amount as cost-sharing for delivery, 25% of their allowed amount as cost-sharing for the full maternity episode, and 28% of their allowed amount as cost-sharing for all care over the three-year period.



### Sensitivity Analysis: Newborn Spending

As enrollees giving birth and newborns are typically part of the same household, we assessed whether there were cost-sharing patterns for newborns that could offset the cost-sharing patterns we observe for enrollees giving birth. We identified newborns by the admission type of “Newborn” in inpatient hospital claims, and used the month and year of admission as a proxy for birth date. We measured mean cost-sharing for newborns’ medical care by month of delivery for the first six and twelve months of life. In evaluating these means, there is no evidence of a seasonal trend in cost-sharing for newborns by delivery month. This analysis was limited to an aggregated sample by inability to match newborns to enrollees giving birth and reliably categorize newborns into HDHP or non-HDHP plans.

