December 2024

Assessing the Economic Impact of Postpartum Depression in Mississippi

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NATIONAL STRATEGIC PLANNING
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Overview

Background

Postpartum Depression (PPD) is a pervasive mental health condition affecting new mothers. Nationally, approximately 13% of women who give birth experience symptoms of PPD (Bauman et al., 2020). In Mississippi, however, the prevalence is notably higher; national Pregnancy Risk Assessment Monitoring System (PRAMS) data trends consistently indicate that Mississippi has one of the highest state PDD rates in the nation, with recent data showing the Mississippi PPD rate is approximately 21% (Centers for Disease Control, 2024; Office of Health Data and Research Mississippi State Department of Health, 2023a and 2023b).

The existing foundation of research demonstrates that PPD's consequences extend beyond personal health. Women experiencing PPD face higher rates of unemployment and, when employed, often struggle with absenteeism (frequent absence from work) and presenteeism (reduced productivity while at work). Employers face substantial burdens from the lost productivity caused by absenteeism and presenteeism (Maven Clinic, 2019), while higher rates of unemployment among individuals suffering from PPD impose broader economic challenges on the community. Over time, these issues create a compounding effect, amplifying economic losses for businesses and communities alike. Rapid treatment of PPD can interrupt this cycle, mitigate the impacts of PPD on productivity and employment, and reduce the growing economic hardship for employers and the community.

A 2019 national study estimated that the workforce effects of PPD resulted in $4.7 billion in productivity losses for businesses across the United States (Luca et al., 2019). While this prior research provides a useful national benchmark, the creation of data-driven policies in Mississippi requires an understanding of the state-specific impacts. This report, commissioned by the Mississippians for Maternal Care, assesses the economic impact of PPD in Mississippi.

Research Approach

This analysis examines the economic impact of PPD in Mississippi through three components:

Estimating PPD Prevalence in Mississippi

National PPD prevalence rates are applied to Mississippi-specific birth data to calculate the number of women affected annually. This calculation establishes a baseline for understanding the scope of the issue within the state.

Assessing Costs to Mississippi Employers

Existing research into the effects of PPD on workforce performance is integrated

with Mississippi-specific workforce data to calculate the direct costs borne by Mississippi employers. These costs include productivity losses and workforce disengagement caused by absenteeism and presenteeism among employees affected by PPD.

Modeling Broader Economic Impacts

The direct employer costs will induce impacts throughout the broader economy. Reduced employee productivity can disrupt supply chains, decrease business revenues, and lower employee earnings. This analysis models Mississippi's baseline economy using input/output software, and simulates the potential economic gains that could be realized if a policy intervention were to mitigate the direct employer costs of PPD.

KEY FINDINGS

Prevalence of PPD in Mississippi's Workforce

7,283 births to Mississippi mothers (21 percent of all births) are estimated to have resulted in PPD in 2022. Among these, an estimated 5,185 have found employment with Mississippi businesses, while 166 are estimated to be unemployed specifically due to their PPD. The remaining women either did not enter the labor force or were unemployed for reasons unrelated to PPD.

Direct Employer Costs

The individual impact associated with PPD-related absenteeism are estimated at $621 per year, and impacts associated with PPD-related presenteeism are estimated at $7,216 per year. Applying these individual costs across the 5,185 employed women with PPD indicates cost to Mississippi businesses totaling $40.6 million per year.

Broader Economic Impacts

Modeling and simulations of Mississippi's economy suggests that mitigating the workforce effects of PPD could improve productivity and stimulate the local economy. This economic stimulation could support 518 jobs across the state and generate $24.5 million in personal income, equivalent to roughly $47,000 per job. This enhanced economic activity would translate to an additional $2.6 million in tax revenues, including $1.8 million for the state government and $800,000 for the local government.

These results account for the impacts associated with employed women who have PPD due to births in 2022. The results do not reflect the potential additional losses that could accumulate if the productivity impacts of PPD persist over multiple years. As such, these figures represent a conservative lower-bound estimate of the annual economic impact of PPD in Mississippi. Regardless, rapid treatment of PPD can interrupt the cycle of absenteeism, presenteeism, and unemployment, thereby mitigating economic losses and reducing the growing hardship for both employers and the community.

METHODOLOGY

DATA

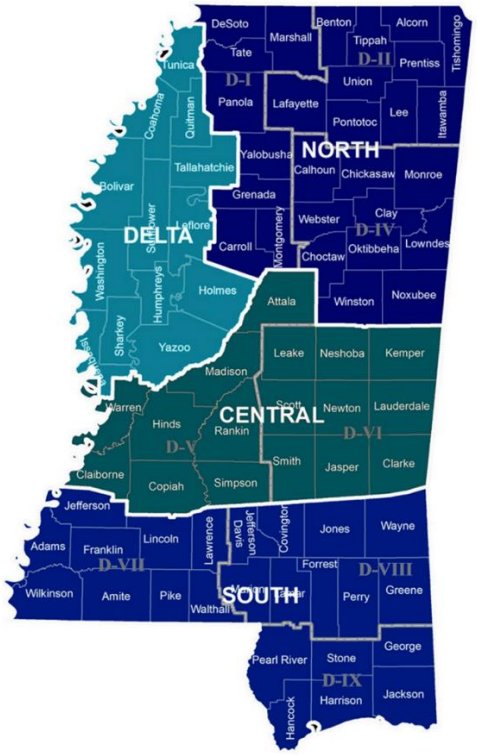
The data for this research were compiled from the following sources.

Mississippi State Department of Health (MSDH) – The MSDH provides summary statistics related to Mississippi's population and the prevalence of various medical conditions throughout the state. Information is provided by MSDH for the state as a whole, and for each of the state's nine health districts. Figure 1, below, illustrates the location of these districts. Information from the MSDH was used to measure the number of live births in the state and in each health district, as well as the rates of women reporting PPD symptoms.

U.S. Census Bureau – The Census Bureau provides data on the social, economic, housing, and demographic characteristics of Mississippi's population. Data from the *2023 ACS 1-Year Estimates* were used to calculate the number and the percent of Mississippi women who have children and participate in the state's workforce.

U.S. Bureau of Labor Statistics (BLS) – The BLS provides data on the employment and earnings of Mississippi's workforce. Data from the Local Area Unemployment Statistics were used to determine the unemployment rate of Mississippi, and data from the Current Population Survey (CPS) were used to determine the average income of employed Mississippi women.

FIGURE 1: MISSISSIPPI HEALTH DISTRICTS



Source: Mississippi State Department of Health, 2024

INDICATORS

To estimate the prevalence of PPD in Mississippi, the following indicators were constructed:

Number of Births – The number of live births in Mississippi in 2022, tabulated using data from the MSDH. Results are provided in total, and for each of Mississippi's nine health districts.

Occurrences of PPD – The estimated number of Mississippi women with PPD as a result of births in 2022, calculated by multiplying the number of live births by the PPD symptom occurrence rate reported by the MSDH (21%) in the recently available year of data, 2020.

To estimate the costs of PPD for Mississippi employers, the following indicators were constructed:

Number of Women with PPD in the Labor Force – The estimated number of women with PPD who are either employed, or who are unemployed and actively seeking work. This indicator is calculated by multiplying the estimated number of Mississippi women with PPD by the state-specific *Labor Force Participation Rate* for women with children under 18, reported as 75.9% in 2023 by the U.S. Census Bureau.

Number of Women Unemployed Due to PPD – The estimated number of women who are unemployed specifically as a result of their PPD, reported by the literature to be 3% of women in the labor force who have PPD symptoms (McGovern et al., 2022).

Number of Women Employed with PPD Symptoms – The estimated number of women who are actively employed while also experiencing PPD symptoms. This indicator is calculated using the *Number of Women with PPD in the Labor Force* as the base number (the minuend). The number of unemployed women are subtracted, including both the *Number of Women Unemployed Due to PPD* as well as the number of women unemployed for unrelated reasons (calculated using the state unemployment rate).

Cost of Absenteeism due to PPD – The value of lost productivity due to PPD-related absenteeism. This indicator is calculated by multiplying the number of employed women with PPD by the per capita cost of PPD-related absenteeism, reported by the literature to be $621 annually (Ammerman et al., 2016).

Cost of Presenteeism due to PPD – The value of lost productivity due to PPD-related presenteeism. This indicator is calculated by multiplying the number of employed women with PPD by the per capita cost of PPD-related presenteeism, reported by the literature to be $7,216 annually (Evans-Lacko and Knapp, 2016).

To measure the broader economic impacts of PPD in Mississippi, and the gains that could be realized by mitigating PPD-related employer costs and PPD-related unemployment, this analysis utilizes a well-established econometric model; Regional Economic Modeling

Inc.'s (REMI) PI+. This model utilizes data on historical employment, earnings, and demographic trends from sources such as the U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, and County Business Patterns, to estimate the impacts of targeted changes or interventions within a state or local area.

The following inputs were utilized to calibrate the REMI PI+ input/output model: the cost of absenteeism for employers, the cost of presenteeism for employers, and the amount of unemployed directly caused by PPD – not including the typical level of unemployment in the state. Using these inputs, the following outputs were generated:

Direct Jobs – The additional number of Mississippi women who would be employed had they not had PPD; equal to the *Number of Women Unemployed Due to PPD*.

Indirect Jobs – The additional jobs created by the economic stimulus associated with mitigating PPD-related employer costs and PPD-related unemployment, as estimated using the REMI model.

Personal Income – The estimated income generated by the economic stimulus associated with mitigating PPD-related employer costs and PPD-related unemployment, as estimated using the REMI model.

Tax Revenue – The estimated state and local income tax generated by the economic stimulus associated with mitigating PPD-related employer costs and PPD-related unemployment, as estimated using the REMI model.

RESULTS

PREVALENCE OF PPD IN MISSISSIPPI'S WORKFORCE

Table 1 presents the number of births in Mississippi in 2022, and the estimated occurrences of PPD across the state's nine health districts. A total of 34,678 births to Mississippi mothers were recorded in 2022, and, 7,283 of these (21 percent) are estimated to have resulted in symptoms of PPD.

The West Central district recorded the highest number of births (7,298) and correspondingly has the highest estimated levels of PPD occurrences (1,533). This region contains Mississippi's major population centers, including Hinds, Rankin, and Madison counties.

The Coastal Plains and Northeast districts also reported substantial numbers of births (5,640 and 4,264, respectively), with each district estimated to have roughly 1,000 occurrences of PPD. These districts include population centers in Jackson and Harrison County on the coast, and DeSoto County in the Memphis-metro area.

DIRECT EMPLOYER COSTS

Table 2 presents the labor force status of women experiencing PPD symptoms in Mississippi.

Statewide, 5,529 women with PPD are estimated to be in the labor force. Among them, 5,184 are employed, while 345 are unemployed. Of those unemployed, 166 are estimated to be directly impacted by PPD, while 176 are unemployed for reasons unrelated to the condition.

Since these results are derived from the birth data in Table 1, the geographic trends align closely. The West Central district, home to significant population centers, records the highest levels, followed by the Coastal Plains and Northeast districts.

Table 3 provides a breakdown of the economic costs incurred by employers due to PPD-related absenteeism and presenteeism among employed women in Mississippi.

Statewide, the total employer cost is estimated at $40.6 million, with $3.2 million attributed to absenteeism and $37.4 million to presenteeism.

The West Central district reports the highest employer cost at $8.6 million, reflecting its large number of affected employees. The Coastal Plains and Northeast districts follow, with total costs of $6.6 million and $5 million, respectively. In contrast, smaller districts such as Southwest and Delta/Hills incur lower total costs of $2.1 million and $2.6 million, respectively. These multimillion-dollar costs to employers within these healthcare districts can be lowered through swift treatment of PPD.

TABLE 1: NUMBER OF BIRTHS (2022) AND ESTIMATED OCCURRENCES OF PPD

	Number of Births	Occurrences of PPD
District 1: Northwest	3,938	827
District 2: Northeast	4,264	895
District 3: Delta/Hills	2,213	465
District 4: Tombigbee	2,782	584
District 5: West Central	7,298	1,533
District 6: East Central	3,003	631
District 7: Southwest	1,779	374
District 8: Southeast	3,761	790
District 9: Coastal Plains	5,640	1,184
Statewide	**34,678**	**7,283**

Source: Mississippi Department of Health, 2024

TABLE 2: PPD IN MISSISSIPPI'S LABOR FORCE

	Employed with PPD Symptoms	Unemployed		Total PPD in the Labor Force
		Due to PPD	Unrelated to PPD	
District 1: Northwest	589	19	20	628
District 2: Northeast	637	20	22	679
District 3: Delta/Hills	331	11	11	353
District 4: Tombigbee	416	13	14	443
District 5: West Central	1,091	35	37	1,164
District 6: East Central	449	14	15	479
District 7: Southwest	266	9	9	284
District 8: Southeast	562	18	19	600
District 9: Coastal Plains	843	27	29	899
Statewide	**5,184**	**166**	**176**	**5,529**

Sources: Mississippi Department of Health, 2024; U.S. Census Bureau, 2024; U.S. Bureau of Labor Statistics, 2024

TABLE 3: EMPLOYER COSTS OF PPD-RELATED ABSENTEEISM AND PRESENTEEISM

	Employed with PPD Symptoms	Employer Cost		Total Employer Cost
		Absenteeism	Presenteeism	
District 1: Northwest	589	$365,769	$4,250,224	$4,615,993
District 2: Northeast	637	$395,577	$4,596,592	$4,992,169
District 3: Delta/Hills	331	$205,551	$2,388,496	$2,594,047
District 4: Tombigbee	416	$258,336	$3,001,856	$3,260,192
District 5: West Central	1,091	$677,511	$7,872,656	$8,550,167
District 6: East Central	449	$278,829	$3,239,984	$3,518,813
District 7: Southwest	266	$165,186	$1,919,456	$2,084,642
District 8: Southeast	562	$349,002	$4,055,392	$4,404,394
District 9: Coastal Plains	843	$523,503	$6,083,088	$6,606,591
Statewide	**5,184**	**$3,219,264**	**$37,407,744**	**$40,627,008**

Sources: Ammerman et al., 2016; Evans-Lacko and Knapp, 2016; Mississippi Department of Health, 2024; U.S. Census Bureau, 2024; U.S. Bureau of Labor Statistics, 2024.

Broader Economic Impacts

Table 4 presents the projected economic benefits of reducing PPD-related impacts on the workforce in Mississippi. Mitigating these costs and associated unemployment could result in the creation of 518 total jobs statewide, including offsetting the 166 women unemployed due to their PPD symptoms and an additional 352 indirect jobs supported by increased economic activity in the state.

The total personal income generated through these efforts is estimated at $24.5 million, equivalent to roughly $47,000 per job. Additionally, the economic gains would contribute $2.6 million in tax revenue, including $1.8 million in state tax revenue and about $800,000 in local tax revenue.

Table 4: Potential Economic Gains of Mitigating PPD-Related Employer Costs and Unemployment

	Economic Impact
Total Jobs	**518**
Direct	*166*
Indirect	*352*
Personal Income	**$24,492,219**
Tax Revenue	**$2,533,805**
State Tax Revenue	*$1,767,658*
Local Tax Revenue	*$766,147*

Source: NSPARC, 2024

Conclusion

This report estimated that PPD-related absenteeism, presenteeism, and unemployment cost Mississippi businesses $40.6 million annually, with additional impacts on personal income, job creation, and tax revenue. Addressing these challenges through targeted interventions has the potential to not only improve maternal health outcomes but also break the cycle of absenteeism, presenteeism, and unemployment. By mitigating these compounding economic losses, such interventions could generate substantial economic gains, including the creation of 518 jobs, $24.5 million in personal income, and $2.5 million in tax revenue.

It is important to note that these findings reflect the impacts associated with employed women experiencing PPD due to births in 2022, and do not account for potential additional losses that may accrue if the productivity effects of PPD extend beyond a single year. Consequently, these figures provide a conservative, lower-bound estimate of the annual economic impact of PPD in Mississippi. This underscores the importance of addressing PPD quickly to mitigate its effects on Mississippi's workforce and to alleviate the associated costs for employers across the state.

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