



## Whither weathering? The variable significance of age in Black-White low birth weight disparities

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### ABSTRACT

This paper uses birth certificate data to provide novel estimates of the age-specific risk of a low birth weight birth (LBW, an infant born weighing <2500 g) for U.S.-born non-Hispanic Black and White mothers, and finds that patterns vary markedly over space and time. Notably, risk of an LBW birth for Black mothers increased much more steeply with age in 1991–94 than in 2014–17. This decline in LBW risks among older Black mothers led to a decline in the Black-White LBW gap of more than half a percentage point. Both patterns and changes were regional; while age gradients on the Black-White LBW gap were lowest in the South in 1991–94, by 2014–17 they had increased in the South and declined in the rest of the country. These descriptive data allow a new examination of hypotheses regarding the causes of age-specific racial LBW gaps. Research has found that racial disparities in a number of health outcomes, including LBW, increase with age, leading some to speculate that this increase is due to the cumulative effects of exposure to disadvantage. The large degree of variability in Black-White LBW disparities suggests that age-specific causes may also play a role. A series of counterfactual trend analyses explore the roles of two specific mechanisms, smoking and hypertension, and compares these to a more fundamental indicator of socioeconomic status: education.

### Introduction

Black-White inequality is an enduring characteristic of the American health landscape (Williams & Jackson, 2005; Adler & Rehkopf, 2008). Many dimensions of this inequality increase with age (Forde et al., 2019). In the 1990's, speculation about diverging age trends in birth outcomes led to a bio-social life-course theory of health disparities known as the weathering hypothesis, which posits that prolonged exposure to disadvantage has *cumulative* effects on population health (Geronimus, 1992). Health outcomes where gaps follow similar patterns include birth weight (Geronimus, 1996), allostatic load (Geronimus et al., 2006), infant mortality (Cohen, 2016; Powers, 2013b,a), preterm birth (Hibbs et al., 2016), and conditions like diabetes, cardiovascular disease, and hypertension (Thorpe et al., 2016, see Forde et al. (2019) for a systematic review of this literature).

However, the evidence that the mechanisms causing health disparities to increase with age is not definitive enough to necessarily rule out other alternatives. The same age gradient on health disparities could also occur if a causal mechanism is associated with disadvantage and (a) has larger impacts at later ages, and/or (b) if the association with disadvantage increases with age. Thus an alternative hypothesis would

place emphasis on age-specific health characteristics that follow such patterns. The degree to which age patterns in racial health gaps are sensitive to changes in age-specific, as opposed to cumulative, health risks is of paramount importance for policy design because policies may be able to reduce inequality more effectively when they are targeted to high-impact specific risks.

This paper makes an empirical contribution to the literature on birth weight, and a theoretical contribution to the literature on weathering. The empirical goal of this paper is to document age patterns of low birth weight (LBW, defined as an infant born weighing less than 2500 g at birth) for Black and White women over space and time using birth certificate data on births to U.S.-born women by state from 1991 to 94 and 2014–17. This is novel; previous analyses have focused on single cities/states, cohorts, and/or time periods. LBW is one of the most important indicators of infant health (Almond et al., 2005; Conley et al., 2003; Paneth, 1995; Reichman et al., 2005). And like other health outcomes its patterns are characterized by deep inequality; the risk of an LBW birth is more than twice as high for Black mothers than for White mothers (Martin et al., 2017). It is thus important to track how these patterns vary over space and time.

The theoretical contribution of this paper is to evaluate the evidence

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for the cumulative and age-specific hypotheses for LBW. The racial disparity in LBW increases with age (Buescher & Mittal, 2006; Dennis & Mollborn, 2013; Fishman, 2020; Geronimus, 1996; Love et al., 2010; Reichman & Pagnini, 1997; Rich-Edwards et al., 2003). The cumulative and age-specific hypotheses lead to two very different predictions about the sources of these patterns. The cumulative hypothesis predicts fairly stable patterns of Black-White LBW gaps in recent decades because there has been little change in broad measures of disadvantage like income and exposure to racism (Bloome, 2014; Sears and Henry, 2005). By contrast, the age-specific hypothesis predicts a larger degree of variation because specific mechanisms are more variable. For example, smoking and hypertension, two factors that directly impact the health of the fetus, have undergone substantial changes in the past thirty years: smoking has declined while hypertension has become more common (CDC, 2017; Yoon et al., 2015). This alternative hypothesis would thus predict that changes in Black-White LBW gaps at older ages would trend with changes in these specific health risks.

### *LBW disparities and the weathering hypothesis*

Early work on the risk of LBW found that it was associated with disadvantaged social and economic positions as well as adverse health conditions (Eisner et al., 1979). These associations, with few exceptions, have proven remarkably robust over decades of research (Conley et al., 2003; Cramer, 1995; Paneth, 1995). In 2018, 14% of babies born to Black mothers were LBW, compared to 7% for White mothers (Martin et al., 2019). Furthermore, this Black-White LBW gap was found to increase with age (Buescher & Mittal, 2006; Dennis & Mollborn, 2013; Fishman, 2020; Geronimus 1992, 1996; Love et al., 2010; Reichman & Pagnini, 1997; Rich-Edwards et al., 2003). For White mothers, LBW risks decline from the teen years and do not increase until the early 30's. By contrast, Black mothers' LBW risks increase with age.

Arline Geronimus developed the weathering hypothesis in part to explain these age patterns in LBW (Geronimus, 1992, 1996). The weathering hypothesis places emphasis on the potentially cumulative effects that sustained exposure to the stressors of racism and poverty have on members of racial minorities' health, causing accelerated aging processes among racial minorities and leading to minority-White health gaps that widen with age. The hypothesis was groundbreaking, and it inspired a wide-ranging body of research arguing that fundamental causes of health, like exposure to racism and poverty, could explain health gaps that widen with age (Forde et al., 2019; Link & Phelan, 1995; Phelan & Link, 2015).

Six studies specifically examine the age gradient of LBW gaps. Two of them use nationally representative data. Dennis and Mollborn (2013) find evidence for weathering in the cohort of babies born in 2001. Likewise, Fishman (2020) documents LBW gaps by maternal age for a number of racial/ethnic groups using U.S. birth certificate data from 2014–17. The author finds that for U.S.-born Black women the gap in LBW risks relative to US whites increases with age, but for other groups (such as foreign-born Black women) the gap with White women remains constant. Four other studies used localized spatial data and found that racial LBW gaps were highest, and increased fastest with age, in more disadvantaged areas within Michigan (Geronimus, 1996), Chicago (Rich-Edwards et al., 2003), and New York City (Love et al., 2010; Rauh et al., 2001). In each case, both neighborhood and individual health characteristics were strong predictors of disparities at older ages. Yet despite the strong evidence that weathering patterns are prevalent in different places and time periods, the degree to which the patterns vary across states and over time has yet to be examined.

If variation across states and over time conforms to theory, we would expect weathering patterns in LBW to correspond to patterns of racism or racial economic inequality, which are relatively stable. (Bloome, 2014; Sears and Henry, 2005). If instead variation is large, weathering patterns in LBW may be caused by more variable specific causes.

### *Causes of age-specific LBW disparities*

For any characteristic, cumulative or not, to influence age-specific LBW disparities, it must affect the mother's risk of LBW, and either its prevalence or impacts must vary by race and age. Few factors meet these criteria. For example, recent declines in birth weight as a result of changes in obstetric practices appear to have been similar for Black and White women, and are thus not a candidate (Tilstra & Masters, 2020). But some characteristics do qualify. One potential candidate, stress, has been mentioned as a plausible mechanisms in a number of studies on weathering (Forde et al., 2019). A second, smoking, is less clearly related to fundamental causes of health like socioeconomic status and racism. The third, hypertension, falls somewhere in between.<sup>1</sup>

*Stress induced by socioeconomic disadvantage and racism.* We have a limited understanding of the specific mechanisms by which social and economic disadvantage translate into lower birth weight (Kallan, 1993), and we are even more limited in our understanding of how the effects of those mechanisms vary with age. One potential mechanism is stress, which has been found to negatively influence pregnancy outcomes (Brown, 2020; Duncan et al., 2017; Torche, 2011). If the effects of stress are cumulative, racial differences in socioeconomic status or exposure to discrimination could lead to disparities between Black and White mothers that increase with age. At the individual level, higher levels of exposure to socioeconomic inequality and racism are associated with measures of stress on the body such as allostatic load and telomere length (Geronimus et al. 2006, 2015), as well as a higher risk of adverse birth outcomes like LBW (Bell et al., 2006; Collins et al., 2004; Dominguez et al., 2008; Earnshaw et al., 2013; Pickett & Wilkinson, 2015; Wilkinson & Pickett, 2006). At the ecological level, racial LBW gaps are also strongly associated with proxies for exposure to racism, including measures of racial prejudice (such as average levels of implicit bias or the prevalence of internet searches for racist terms) and segregation (Austin et al., 2016; Chae et al., 2018; Mehra et al., 2017; Orchard & Price, 2017). Stress may also be a key link between these fundamental causes of health and more proximate causes, such as smoking and hypertension.

*Smoking.* Links between maternal smoking and birth weight were documented more than 60 years ago, and causal relationships are now well established (Control, 2014; Simpson, 1957). Smoking during pregnancy is fairly common; in 2016 7.2% of women who gave birth in the U.S. reported smoking cigarettes during pregnancy (Drake et al., 2018).

Whether smoking patterns are evidence of the cumulative effects of disadvantage is a matter of some debate (Moon-Howard, 2003). On the one hand, the causes of smoking may not have their roots in the same fundamental causes as disparities in other health outcomes. Indeed, on average, Black women are less likely to smoke when pregnant than White women (Azagba, Manzione, et al., 2020; Li et al., 2018). Smoking patterns are also highly amenable to social policy, such as higher cigarette taxes and other anti-smoking laws (Azagba, Shan, & Latham, 2020; Evans & Ringel, 1999; Friedson & Rees, 2020; Levy & Meara, 2006; Lien & Evans, 2005), suggesting that the root causes of smoking patterns may be variable rather than fundamental. Thus from one perspective, smoking could pose a potential omitted variables problem for estimates of racial LBW gaps if it is not accounted for.

But from the alternative perspective adopted by much of the literature on weathering, smoking could be considered downstream from the fundamental causes of health disparities because cumulative stress

<sup>1</sup> A further potential contributor to age-specific racial LBW disparities is differential selection. Using Finnish register data, Goisis et al. (2017) find that differential selection accounts for all of the association between age and birth weight. While the extent of differential selection in the US context remains unknown, the evidence to date suggests that there is an age gradient on the Black-White LBW disparity that is not purely due to selection (Fishman, 2020).

caused by exposure to racism or poverty could lead to higher rates of smoking at older ages. Black women are more likely to begin smoking at later ages, and are less likely to quit once they begin (Geronimus & Korenman, 1993; King et al., 1998; Moon-Howard, 2003; Thompson et al., 2011). From this perspective, adjusting for smoking would bias estimates of the effects of these fundamental causes downward. This paper cannot adjudicate between these perspectives, but they may lead to different interpretations of the results.

**Hypertension** Other specific health factors also have direct effects on birth weight, including hyper-tension, diabetes and eclampsia. The most common of these conditions, hypertension, is linked to birth weight because it increases the risk of preeclampsia, preterm birth, and intra-uterine growth restriction (Bateman et al., 2012; Sibai et al., 1998). Racial hypertension gaps that increase with age are large and long-standing (Geronimus and Bound, 1990; Thorpe et al., 2016). The causes of hypertension are also cumulative (Cutler et al., 2007) and age patterns are closely associated with disadvantage (Thorpe et al., 2016). Hypertension is thus a primary mechanism by which the cumulative effects of disadvantage could theoretically impact birth outcomes. But it is also an age-specific mechanism in that its prevalence and treatment are variable and affected by policy (Cutler et al., 2007; Hertz et al., 2005).

## Data

This analysis uses restricted birth certificate data from the National Center for Health Statistics. Observations include all singleton births<sup>2</sup> to U.S.-born non-Hispanic Black or White women aged 15 and older who were residents of the U.S. in 1991–1994 or 2014–2017.<sup>3</sup> Key variables in my analyses are age of the mother at the time of birth, her race (Black or White), and the time period (1991–94 or 2014–2017).

To examine the role health factors play in changing LBW patterns, the analysis includes indicators of tobacco use during pregnancy, diabetes, hypertension (either pregnancy-induced or chronic), eclampsia, and inadequate prenatal care (coded using the Kotelchuck index). Tobacco use is coded as 1 if the mother reported using any tobacco products at any time during the pregnancy and 0 otherwise. Indicators for whether the birth is a first, second, third, or higher order birth are also included. Birth certificates were revised in 2003 to harmonize the information collected across all states. This revision substantially altered the available maternal health information, but these health measures remained consistent for both time periods.

Socioeconomic status was recorded using a necessarily noisy proxy: four indicators for the mother's level of education (less than high school, high school, some college, college degree or more).

The state-level analyses are limited because some states lacked sufficient data or because there were too few births to Black mothers. States were excluded if there were fewer than 50 births without missing health or education data to Black mothers in any of the following age groups: 15–19, 20–24, 25–29, 30–34, 35–39, 40+. After this exclusion criterion was applied, 31 states remained in the sample. All observations without missing health data remain included in national estimates.<sup>4</sup>

<sup>2</sup> Multiple births are much more likely to be LBW, and are therefore excluded.

<sup>3</sup> Earlier studies of weathering used only first births, but more recent work has either used or suggested an emphasis on all births (Dennis, 2019; Dennis & Mollborn, 2013; Fishman, 2020; Powers, 2013b).

<sup>4</sup> Notably, this excludes the vast majority of births in the early period in California, which did not report data on prenatal smoking until 2003. A comparison of LBW patterns for Black and White mothers by age and period for the analytic sample and the population as a whole can be found in Appendix Fig. A1. The exclusion of births that did not report health and education data made little difference to overall patterns.

## Methods

This paper has two empirical aims: (1) to describe trends in age-specific Black-White LBW gaps for the U.S. as a whole and by state, (2) to explore potential explanations for those trends.

To accomplish (1), predicted percentages of births that are LBW for Black and White mothers are estimated at each age in 1991–94 and 2014–17 using a logistic regression model in which the outcome, whether a birth to an individual woman was LBW, is regressed on (a) the main, two-way, and three-way interactions between age, race, and the time period, (b) the same set of interactions with quadratic and cubic terms for age, and (c) all the main, two-way, and three-way interactions between age, race, and the individual-level indicators for the health and education characteristics.<sup>5</sup> The difference between the predicted percentages for Black and White mothers (the Black-White LBW gap) are also reported in each time period. This model provides a very close approximation of the observed percentages, making it similar to a non-parametric estimate of the underlying relationships in the data. This model is estimated for the U.S. as a whole and individually by state. This allows the relationship between age, race, and the health and education factors to vary by state, consistent with a reality in which the quality of health care and the returns to education vary across states.

Then, the same model is used to explore potential explanations for trends. Predicted Black-White LBW gaps are compared in three counterfactual scenarios where one characteristic constant while letting the others trend. These three scenarios are: (1) with smoking held at its 1991–94 average for the state-race-age corresponding to the individual mother's state, race, and age, (2) with hypertension held at its 1991–94 state-race-age average, and (3) with the education indicators held at their 1991–94 state-race-age averages. To estimate the contribution of trends in each of the selected covariates to trends in the Black-White LBW gap, the estimated changes in the Black-White LBW gap from 1991 to 94 to 2014–17 under each of the three counterfactual scenarios are compared to the estimated change when all factors are allowed to trend. The difference between the predicted and counterfactual change is an estimate of each variable's contribution to the observed change in Black-White LBW disparities. These differences are calculated by age. It is important to note that these counterfactual models do not provide causal estimates as to the role that each factor plays in Black-White LBW gaps. They do nevertheless provide hints as to the relative magnitude of changes in individual variables and their relationships with LBW.

This paper also has a theoretical aim: to evaluate the extent to which birth weight patterns are consistent with the weathering hypothesis' theory of the causes of age-specific Black-White LBW gaps: that age effects are larger for Black compared to White mothers. Causal age effects are difficult to identify because they are confounded with cohort and period effects. However, the theory specifically attributes those age effects to fundamental causes, like exposure to racism or racial differences in average socioeconomic status, that have remained fairly stable in recent years (Bloome, 2014; Sears and Henry, 2005), implying that they are not determined by period or cohort effects. Under the assumption that period and cohort effects are negligible, a comparison of non-overlapping cross sections permits an evaluation of age effects over time (Yang & Land, 2013). The cross sections examined are relatively short and at least 20 years apart (or in different states), making it unlikely that women gave birth in both periods (or multiple states in the same period). Thus if these cross sections display similar patterns, that would suggest support for the weathering hypothesis' key tenets. If

<sup>5</sup> See the Appendix for a formal description of the model. Note that this specification allows the association between the health or education characteristics to vary arbitrarily by both age and race, but constrains those relationships to be constant across time periods. Results including further interactions between the health characteristics and the time period are nearly identical.

instead they vary widely, that would suggest that some factor other than the cumulative effects of fundamental causes influences age-specific LBW disparities.<sup>6</sup>

## Results

Fig. 1 displays predicted rates of LBW for singleton births by race and age for the U.S. as a whole, and the Black-White LBW gap by age.<sup>7</sup> The left panel of Fig. 1 illustrates LBW rates for Whites and Blacks in both periods, and the right panel shows the Black-White LBW gaps. In 1991–94 there were 7,338,564 births to U.S.-born resident White women who reported health and education data, of which 4.8% weighed fewer than 2500 g, and 1,870,663 births to Black women, of which 12.2% weighed fewer than 2500 g. In 2014–17 there were 7,209,568 births to White mothers, and the LBW rate increased to 5.2%.

There were also 1,733,897 births to Black mothers, for whom the LBW rate decreased to 12.1%.

LBW rates for White mothers follow a similar pattern in both periods, with declines from near 8% at age 15 to minimums at age 30 of 3.9% in 1994–94 and 4.5% in 2014–17. White LBW rates increase by a few tenths of a percentage point per year year of age thereafter. Relative to 1991–94, LBW rates for White mothers in 2014–2017 are about one percentage point higher throughout the 20's, with smaller differences at earlier and later ages. These increases in LBW are consistent with the small declines in birth weight observed for the U.S. as a whole (Donahue et al., 2010; Tilstra & Masters, 2020).

LBW rates for Black mothers were, and remain, much higher than those for White mothers at all ages. In 1991–94, they also followed a very different age pattern. Black LBW rates for the country as a whole in 1991–94 did not increase monotonically, but followed a U-shaped pattern, with rates declining from 13.8% at age 15 to 10.8% at age 22 before increasing to a maximum of 16.0% at ages 40+. The minimum comes at a much earlier age than for Whites, and the subsequent increases are much larger, leading to growing birth weight disparities by older ages. After age 21–22, Black mothers' outcomes worsened with age while White mothers' did not. As can be seen in Panel 2 of Fig. 1, the Black-White LBW gap increased rapidly with age, doubling from about 5 percentage points at age 15 to 10 percentage points by age 33.

In the twenty years between 1991–94 and 2014–17, Black mothers' age-LBW patterns changed tremendously. In line with published reports from the National Center for Health Statistics, the prevalence of LBW births in the U.S. has declined among Black mothers relative to White mothers (Martin et al., 2017). Importantly, changes were not constant with age: declines in the Black-White LBW gap were much larger among older compared to younger age groups. Where once patterns for Black mothers diverged from those for White mothers after age 21–22, they are now more parallel throughout the age distribution. Where once the minimum LBW rate for Black mothers was at 21–22, now it is much later, between ages 27 and 28, again more similar to White mothers. Interestingly, there was little change in patterns at ages 40+.

These changes are remarkable. They represent a dramatic reorganization of the age-LBW relationship for Black mothers, and imply substantial declines in the Black-White LBW disparity at later ages. There were very slight increases of at most .5 percentage points in the Black-White gap at younger ages. These were accompanied by large decreases of up to 2.2 percentage points at later ages. For some of the oldest age groups, the Black-White LBW gap narrowed by more than a

<sup>6</sup> Note that a longitudinal data source that contains detailed information on these fundamental causes by age at the individual level, or allows a researcher to adjust for them using sibling fixed-effects models as in Goisis et al. (2017) would be superior. Such data, while commonly available for Northern European countries, unfortunately does not exist for the US.

<sup>7</sup> Appendix Table A1 shows the estimates underlying Fig. 1. 95% CIs excluded for parsimony, but are available on request and are shown on the figures.

fifth.

By disaggregating the data by state, we can observe that these patterns were not uniform across the country. Fig. 2 plots the Black-White LBW gap in 1991–94 (solid red lines) and 2014–17 (dashed blue lines) by state.<sup>8</sup> Age is on the x-axis and the racial LBW disparity is on the y-axis, so states where lines slope upward have Black-White LBW gaps that increase with age.

There are two main takeaways from the 1991–94 lines in Fig. 2. First, the upward-sloping weathering patterns were common in the majority of states. Michigan, the context of Geronimus (1996)'s original work on weathering and racial LBW gaps, has an upward slope that is steeper than average, but is not an outlier. Northern and Western states with large Black populations, including Michigan, Ohio, Illinois, Connecticut, Pennsylvania, New Jersey, Wisconsin, and New York, had racial LBW gaps that were at least twice as large for women in their late 30's than for women in their teens.

Second, there was considerable variation in weathering patterns between states in the early 1990's, and the magnitude of weathering was by no means universal. In particular, the age gradient of the LBW gap is much lower in Southern states than in other regions of the country. In some states it was almost flat. In Alabama, Arkansas, and Mississippi, for example, racial LBW gaps remained between five and seven percentage points throughout the age distribution.

The 2014–17 lines are dramatically different from the 1991–94 lines. For the majority of states out-side of the South, the 2014–17 line is considerably below the 1991–94 line for older age groups, indicating a decline in the Black-White LBW gap at later ages. In a number of states that had steeply upward-sloping age gradients in 1991–94, such as Maryland, Arizona, Colorado, New York, and Pennsylvania, racial LBW gaps are now only slightly larger for women in their late 30's than for women under 20.

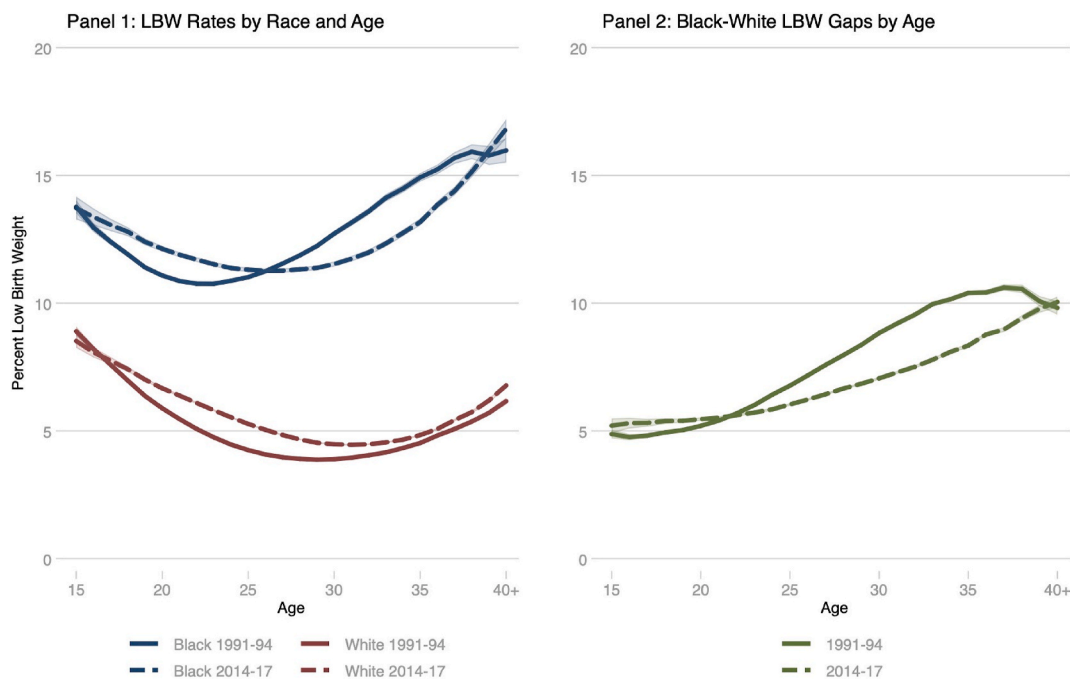
The declines in the age-specific racial LBW disparity did not occur in many Southern states. Five Southern states (Alabama, Arkansas, Mississippi, Oklahoma, and South Carolina) actually experienced significant increases in the racial LBW disparity among the oldest age groups. The Black-White gap narrowed in the older three age groups in only a few Southern states (Maryland, Tennessee, Texas, Virginia, Kentucky, and North Carolina), but with the exception of Maryland these declines were small. Smaller declines in Southern states might be expected given that the age gradient of the LBW gap in these states was lower in 1991–94. But the general lack of decline, and reversals in some states, is surprising in that it goes against the national trend.

Appendix Fig. A4 shows the average levels of hypertension, smoking, and college attainment by age, race, and time period for the country as a whole. Major changes occurred in patterns of smoking and hypertension: declines in smoking and increases in hypertension were largest among older Black mothers. For White mothers, smoking shifted downward at a relatively constant rate for all age groups. For Black mothers, smoking also declined, but changes were much larger among older mothers. Where once older Black mothers were more likely to have smoked during pregnancy than White mothers, they are now less likely than White mothers to smoke during pregnancy at any age. By contrast, changes in hypertension followed almost the opposite pattern. In 1991–94, rates of hypertension were similar for White and Black mothers. By 2014–17, hypertension rates had increased for both White and Black mothers, but increases have been largest for older Black mothers, leading to a Black-White gap that increases with age. Gaps in college attainment increased at later ages.

To estimate the degree to which these changes account for the trends in LBW disparities, the analysis then models counterfactual trends in which smoking and hypertension are held at their 1991–94 levels. These results are then compared to a counterfactual in which a measure of a more fundamental cause of inequality, individual socioeconomic status

<sup>8</sup> Appendix Figs. A2 and A3 show the levels for Black and White mothers.





**Fig. 1.** Predicted Percentages of Births that are LBW by Age and Race, and Black-White LBW Gaps by Age, 1991–94 and 2014–17  
 Note: Data from public birth certificate files include all singleton births to resident U.S.-born women aged 15+ with reported health data. 95% CIs. LBW Gaps in percentage points.

(as proxied by education) is held at its 1991-94 level. Estimates from the counterfactual trend analyses for the U.S. as a whole are shown in the first panel of Fig. 3, with the estimated gaps as observed shown for comparison. It is important to stress that these counterfactuals are not estimates of the causal effects, but rough guides to the magnitude of changes in selected factors and their relationship with LBW. Until about age 18 racial LBW gaps in all three of the counterfactual scenarios are relatively similar to the predicted 2014–17 gaps. After this point they begin to diverge. LBW gaps increase the most rapidly with age in the counterfactual scenario in which smoking is set at its 1991–94 levels while all other covariates are allowed to trend. This is consistent with the observed changes in smoking rates, which declined markedly at older ages for Black mothers. Likewise, the scenario in which hypertension is set at its 1991–94 level is significantly lower than the predicted 2014–17 level, corresponding to the increases in Black-White hypertension gaps. In the counterfactual scenario in which education is set at its 1991–94 level and the other covariates are allowed to trend, the LBW gap is not meaningfully different than its predicted value until the late 30's, suggesting only a minor role of changes in education except at the top of the age distribution. Changes in education have been associated with declines in the LBW gap at later ages.

Panel 2 of Fig. 3 displays the estimated contribution of smoking, income, and hypertension to the changes in the Black-White LBW disparity from 1991 to 94 to 2014–17. Points below zero indicate that, all else equal, the change in the factor from 1991 to 94 to 2014–17 narrowed the LBW gap. Points above zero correspond to increases.

The estimates displayed in Panel 2 suggest that trends in smoking contributed to a narrowing of the LBW gap at later ages, but that trends in hypertension offset those changes. Trends in smoking appear to account for a substantial portion of the change in the LBW gap. At ages 30+, trends in smoking alone accounted for between 0.5 and 1.7 percentage points of the decline in the LBW gap. Given that the total change at these ages was between 1.3 and 2.2 percentage points, the fraction accounted for by smoking is large. Trends in hypertension were in the opposing direction. Under the counterfactual in which hypertension did not trend from 1991 to 94 to 2014–17, the Black-White LBW gap was larger than the predicted LBW gap. At ages 30+, the estimates suggest

that increases in hypertension among older Black women widened Black-White LBW disparities by between 0.6 and 1.3 percentage points. Trends in education were predicted to have narrowed the LBW gap, but only negligibly until the late 30's and 40's.

Figs. 4–6 display the estimated contribution of changes in smoking, hypertension, and education to changes in the LBW gap by age and state.<sup>9</sup> As at the population level, the estimates suggest that changes in hypertension widened the Black-White LBW gap, and that changes in smoking narrowed it.

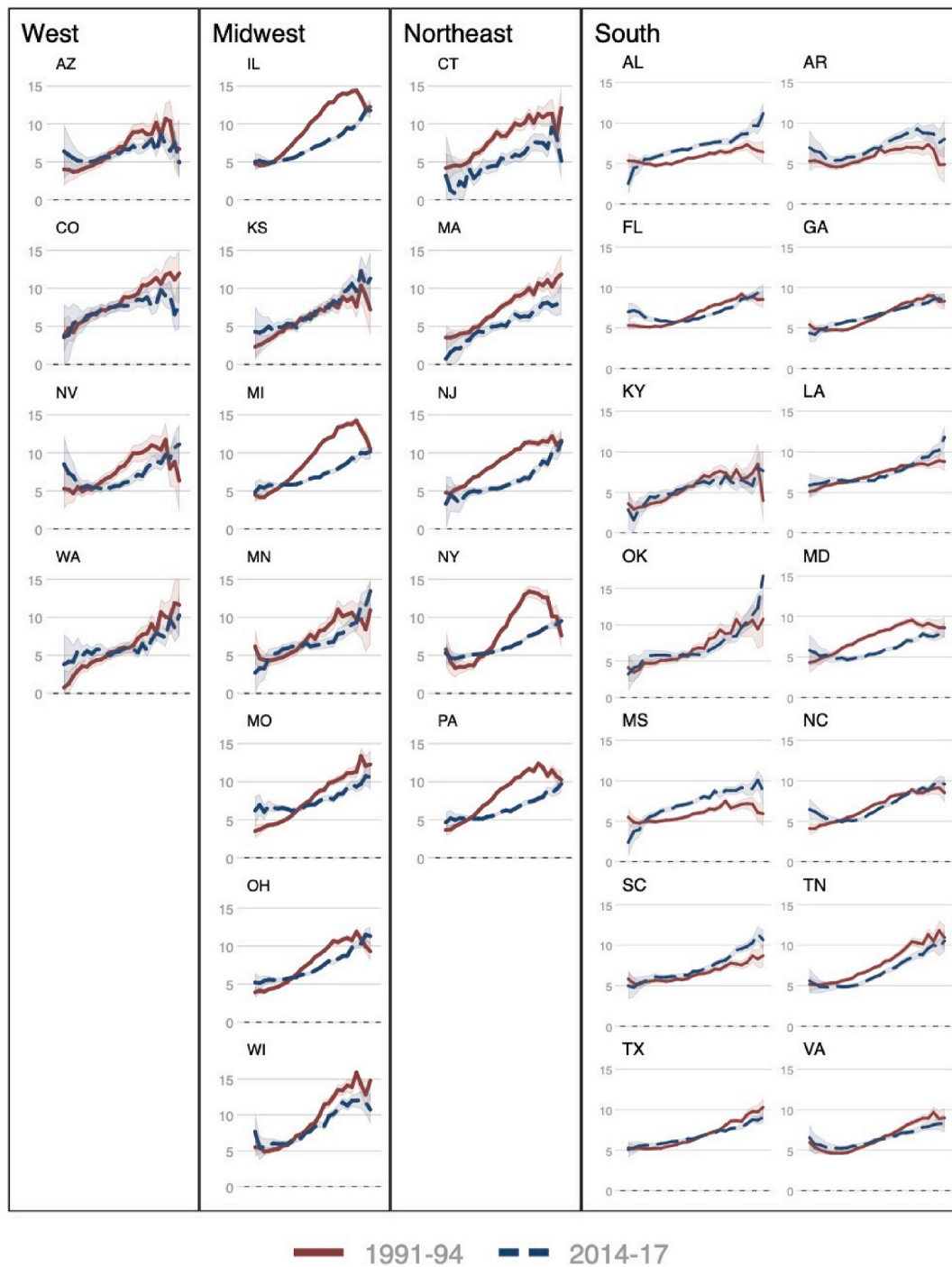
However, the magnitude of the difference varies across states and regions, with larger declines in smoking gaps in the North, Midwest, and West, and smaller changes or increases in the South. Changes in hypertension gaps were particularly large in Wisconsin, Ohio, Missouri, Illinois, and Louisiana. In Louisiana, Mississippi, Alabama, and South Carolina, changes in hypertension gaps more than offset the changes in smoking. These results suggest that changes in hypertension attenuated the declines in LBW gaps that would have occurred due to declines in smoking in most states, and are partially responsible for increases in Black-White LBW gaps observed in other states, particularly the South.

As at the population level, the change in the LBW gap under the counterfactual in which education does not trend is almost always close to the change when all covariates trend as observed, suggesting that socioeconomic status played only a minor role in changes over time. Importantly, trends were in the same direction in every region, with changes in education corresponding to increases in LBW gaps at later ages.

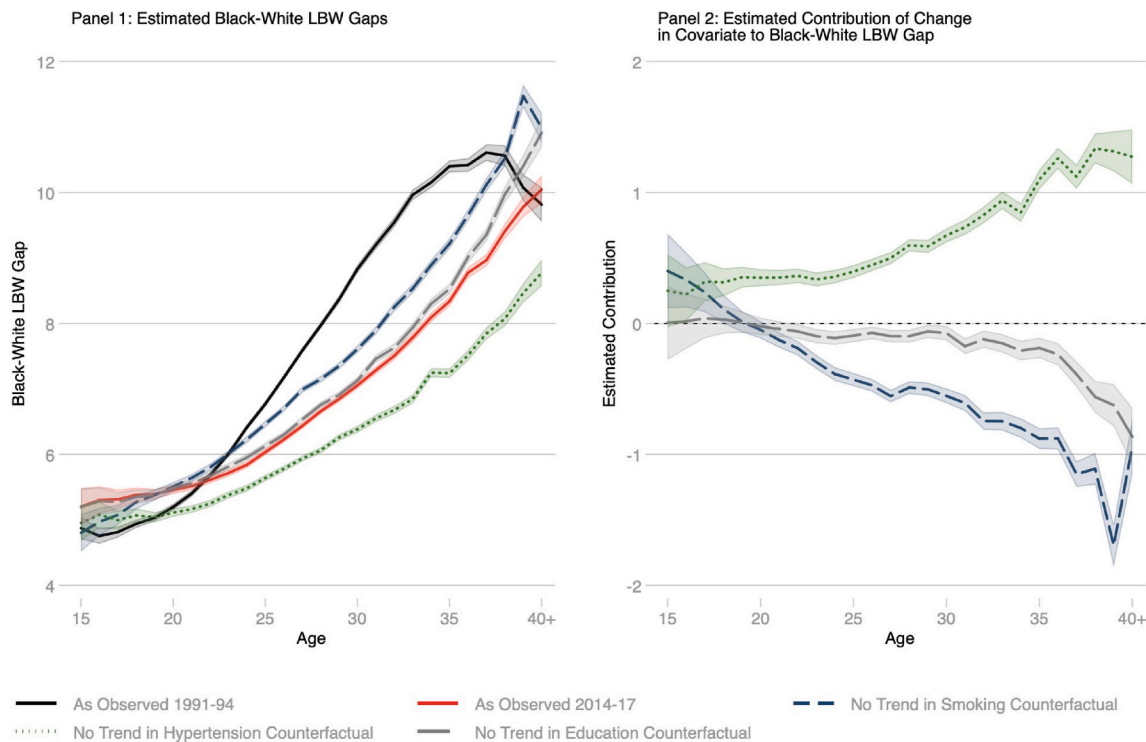
**Discussion**

This paper provided the first description of the age-specific Black-White LBW gap over space and time. Using US natality data, it compares Black-White LBW gaps nationally and by state in both 1991–94 and in 2014–17. Consistent with the weathering hypothesis, the Black-White LBW gap widened with age in both 1991–94 and 2014–17 for the U.S.

<sup>9</sup> These values are reported to one decimal place in Tables A2-A32.



**Fig. 2.** Predicted Black-White LBW Gaps by Age in 1991–94 and 2014–17, in Percentage Points, Selected States  
 Note: Age on X-axis ranging from 15 to 40+. Black-White LBW gaps in percentage-points on Y axis. Data from restricted birth certificate files include all singleton births to resident U.S.-born women aged 15+. 95% CIs shown between 0 and 15.



**Fig. 3.** Observed and Counterfactual Black-White LBW Disparities and Estimated Contribution of Smoking, Hypertension, and Education to Changes from 1991–94 to 2014–17, in Percentage Points  
 Note: Counterfactuals estimated by setting the parameter (i.e. smoking, hypertension, or education) of Model 1 to its state/race/age-specific average in 1991–94. Red line in Panel 1 estimated by setting all parameters in Model 1 to their values as observed in 2014–17. Data from restricted birth certificate files include all singleton births to resident U.S.-born women aged 15+. 95% CIs.

as a whole. This pattern was also evident in most states across the country in both periods.

However, there was also a remarkable level of variability, both over time and across states. From 1991–94 to 2014–17, the Black-White LBW disparity at older ages declined considerably for the US as a whole. This decline was large, and it occurred in a significant fraction of states. Nationwide, the racial LBW disparity shrank by almost one fifth at some of the older ages, and at the state level a number of age-specific gaps declined by more than half. These changes seem to herald a diminished significance of age in Black-White LBW disparities.

Southern states were the exception, both to earlier patterns and to the changes over time. In 1991–94, the age gradients of Black-White LBW gaps were smallest in a number of Southern states, including Mississippi and Alabama, indicating that Black-White LBW disparities barely increased with age. But by 2014–17, the age gradients of Black-White LBW gaps in these same states had become much steeper, and LBW inequality was much larger at older than at younger ages. These divergent trends may be further evidence that the growing economic disparities between the South and other regions extend into health outcomes (Fenelon & Preston, 2012).

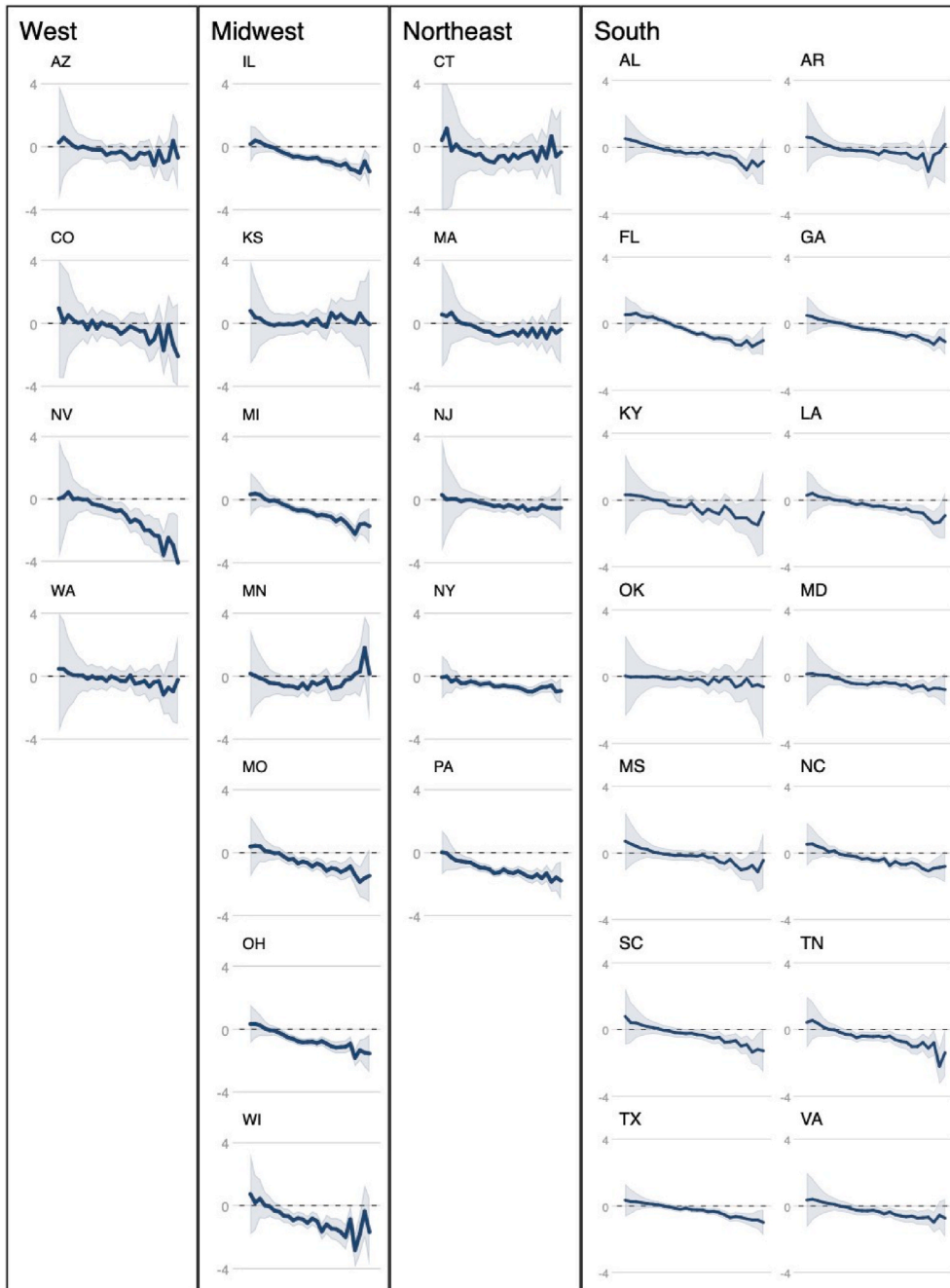
On the one hand, this degree of geographic and temporal variation in the age gradient of Black-White LBW gaps is problematic for the weathering hypothesis. The origins of cumulative disadvantage are fairly constant, and are thus incompatible with the dramatic temporal shifts in age patterns of Black-White LBW disparities observed both nationally and in states as diverse as Nevada, Michigan, New York, and Mississippi. The weathering hypothesis also lacks a sufficient explanation for why in the 1990’s the age slope of the racial LBW gap was almost flat in Alabama, Mississippi, and Arkansas, and increased by less than 5 percentage points in a number of other Southern states. The differences between the South and other regions deserves much more attention in

the literature.

The counterfactual analyses suggest that the large degree of variation over time, and the generally diminished significance of age in Black-White LBW disparities in more recent years, may be in part due to changes in specific causes of LBW at older ages. Declines in smoking alone accounted for up to one half of the decline in the Black-White LBW gap at some later ages. If smoking is considered independent of the fundamental causes of weathering, then these results suggest that estimates of age-specific health gaps that do not adjust for smoking are severely biased.

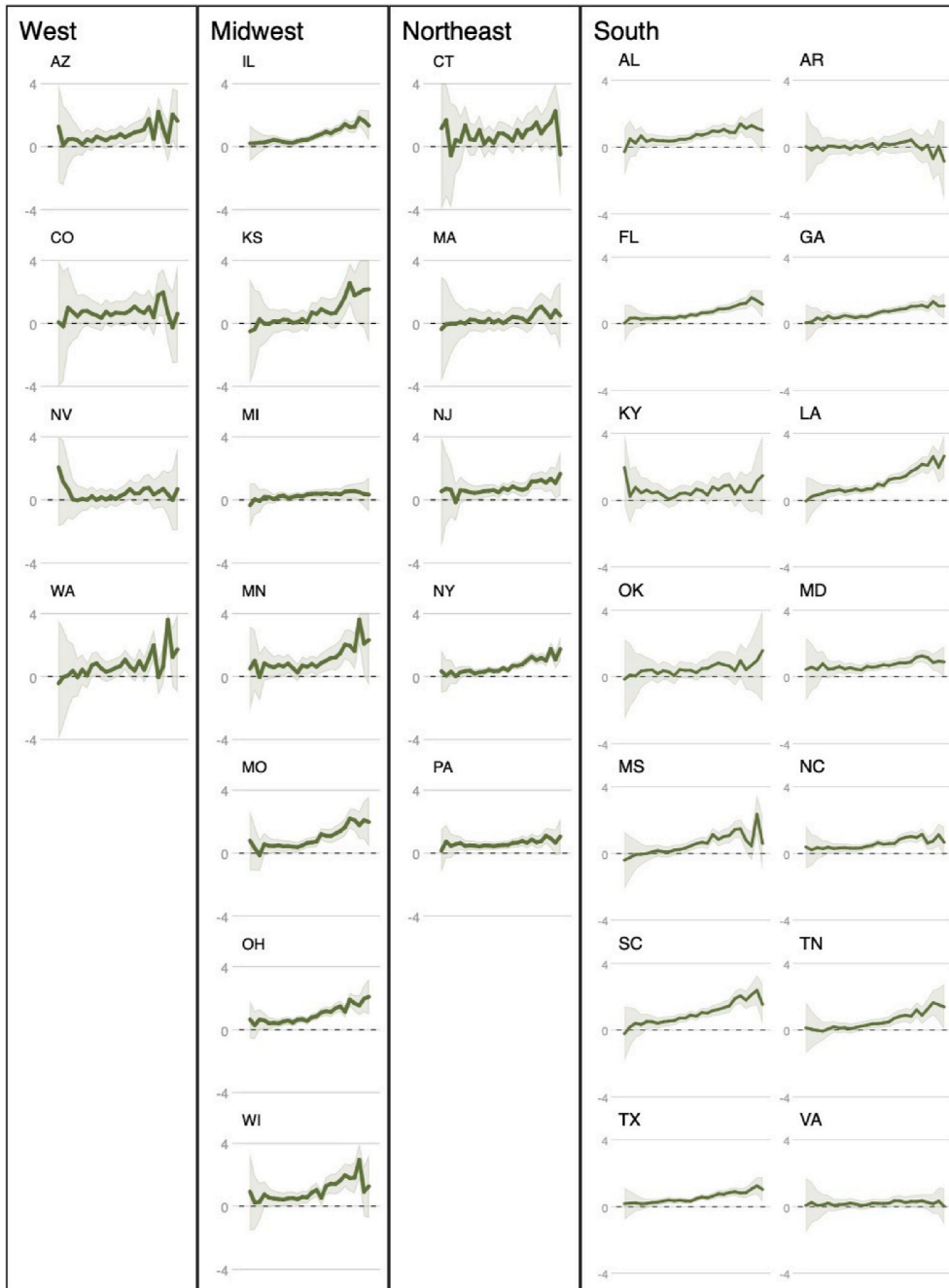
On the other hand, only the most naïve observer would conclude that variability in age-specific LBW gaps disproves the weathering hypothesis entirely, even with respect to LBW. For one, the age gradient on Black-White LBW gaps remains positive, both in the country as a whole and for most states. Second, patterns of specific risks could theoretically be considered a result of weathering. The counterfactual estimates showing an increasing role for hypertension could be interpreted as evidence for the theory of cumulative health effects, and smoking could also be considered a cumulative condition (Moon-Howard, 2003). Geronimus et al. (2019) refer to the phenomenon of new mechanisms widening health disparities even as other disparities are reduced as “whack-a-mole”. Like in the popular carnival game, when one mechanism fades another emerges to take its place as a determinant of age-specific disparities, implying that “it is important we do not focus our attention on a single “mole” while the others go unattended,” (p. 235).

The results presented here suggest that understanding and eliminating the sources of the age gradient on racial inequality requires addressing a balance of cumulative and age-specific factors. A research and policy agenda focused on understanding that balance would not neglect either type of health risk. One goal would be identifying and

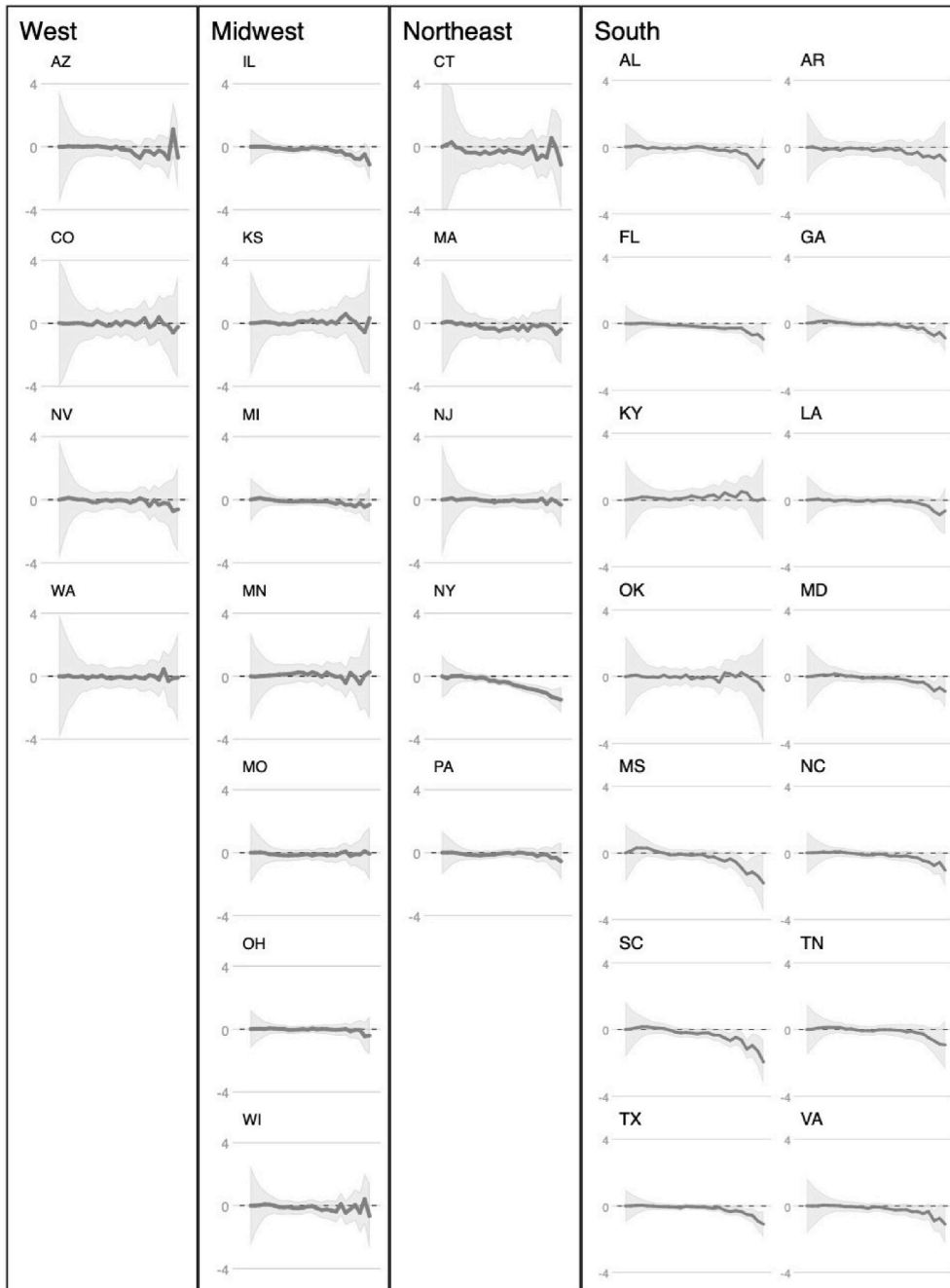


**Fig. 4.** Estimated Contribution of Change in Smoking to Change in the LBW Gaps by State and Age, in Percentage Points  
 Note: Age on X-axis ranging from 15 to 40+. Contribution of smoking to change in LBW gap in percentage points on Y-axis. Contributions are the difference between predicted percentage-point change in the Black-White LBW gap between 1991–94 and 2014–17 and counterfactual change in the LBW gap. Counterfactuals are estimated by setting the smoking in Model 1 to the state/race/age-specific average in 1991–94. Data on births and health characteristics from restricted birth certificate files include all singleton births to resident U.S.-born women aged 15+. States in alphabetical order by Census region. 95% confidence intervals shown up to 4 and -4.





**Fig. 5.** Estimated Contribution of Change in Hypertension to Change in the LBW Gaps by State and Age, in Percentage Points  
 Note: Age on X-axis ranging from 15 to 40+. Contribution of hypertension to change in LBW gap in percentage points on Y-axis. Contributions are the difference between predicted change in the Black-White LBW gap between 1991–94 and 2014–17 and counterfactual change in the LBW gap. Counterfactuals are estimated by setting hypertension in Model 1 to the state/race/age-specific average in 1991–94. Data on births and health characteristics from restricted birth certificate files include all singleton births to resident U.S.-born women aged 15+. States in alphabetical order by Census region. 95% confidence intervals shown up to 4 and -4.



**Fig. 6.** Estimated Contribution of Change in Education to Change in the LBW Gaps by State and Age, in Percentage Points  
 Note: Age on X-axis ranging from 15 to 40+. Contribution of education to change in LBW gap in percentage points on Y-axis. Contributions are the difference between predicted change in the Black-White LBW gap between 1991–94 and 2014–17 and counterfactual change in the LBW gap. Counterfactuals are estimated by setting the education variables in Model 1 to the state/race/age-specific average in 1991–94. Data on births and health characteristics from restricted birth certificate files include all singleton births to resident U.S.-born women aged 15+. States in alphabetical order by Census region. 95% confidence intervals shown up to 4 and -4.

addressing the specific causes of health gaps at various ages. Both of the major health mechanisms affecting LBW identified in this paper are preventable; people routinely to successfully quit smoking, anti-smoking legislation has demonstrated positive impacts on birth weight (Azagba, Shan, & Latham, 2020; Evans & Ringel, 1999; Friedson & Rees, 2020; Levy & Meara, 2006; Lien & Evans, 2005), and modern treatments for hypertension are highly effective (Cutler et al., 2007). The problematic emergence of hypertension gaps may have come about in part because health innovation reaches the most advantaged groups first (Glied & Lleras-Muney, 2008; Phelan & Link, 2005). Indeed, the benefits of recent advances in hypertension treatment are unevenly distributed by race/ethnicity (Hertz et al., 2005). Research and policy designed to understand and address these, and future, changes in health disparities could do much to reduce inequality.

But an agenda that purely focused on age-specific causes and neglected fundamental, cumulative, causes of disadvantage would be

incomplete. The large and outstanding racial LBW gaps at all ages are not caused by differences in specific risks. So while specific health risks are clearly important and should be part of the policy equation, a holistic, balanced, agenda would also focus on understanding and addressing the deeper structural inequalities that systematically result in Black-White health disparities.

**Ethics**

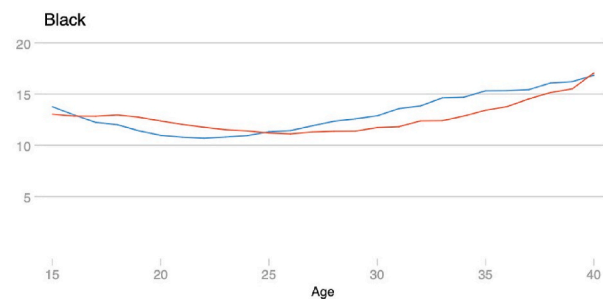
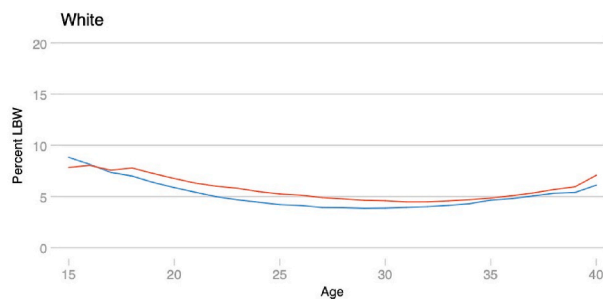
I confirm that this article conforms to the ethical guidelines of Social Science and Medicine - Population Health. The author received no funding from outside sources, and reports no conflicts of interest.

**Author statement**

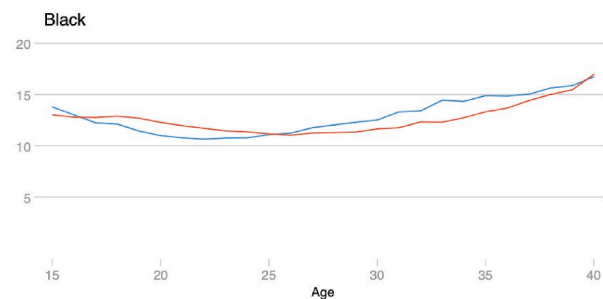
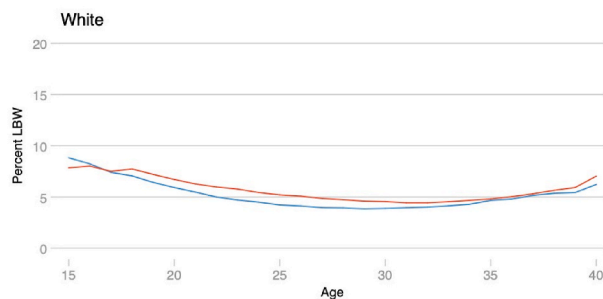
Nicholas Mark designed, conducted, and wrote the analysis.

**Appendix**

**All Births**

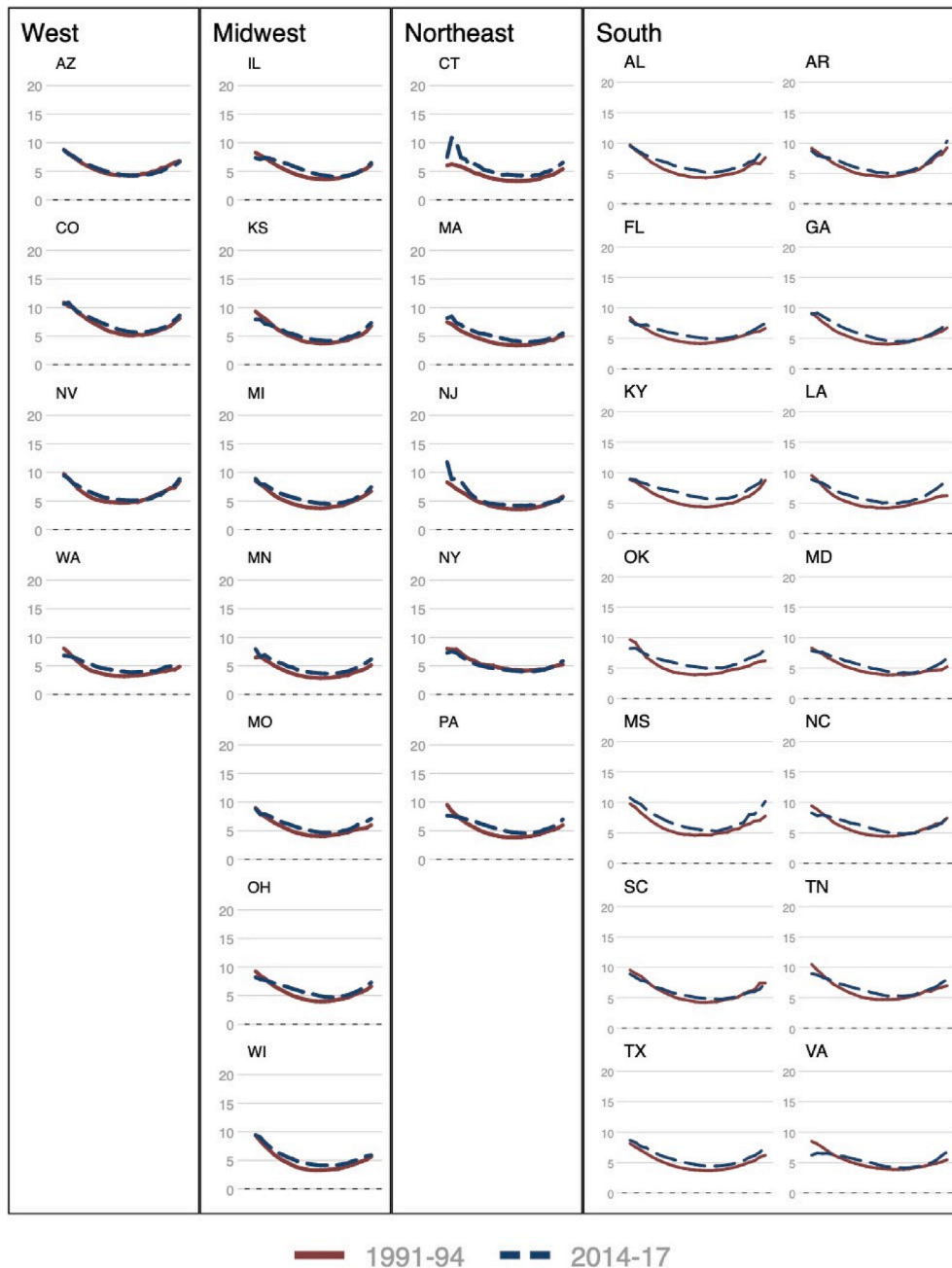


**Analytic Sample**



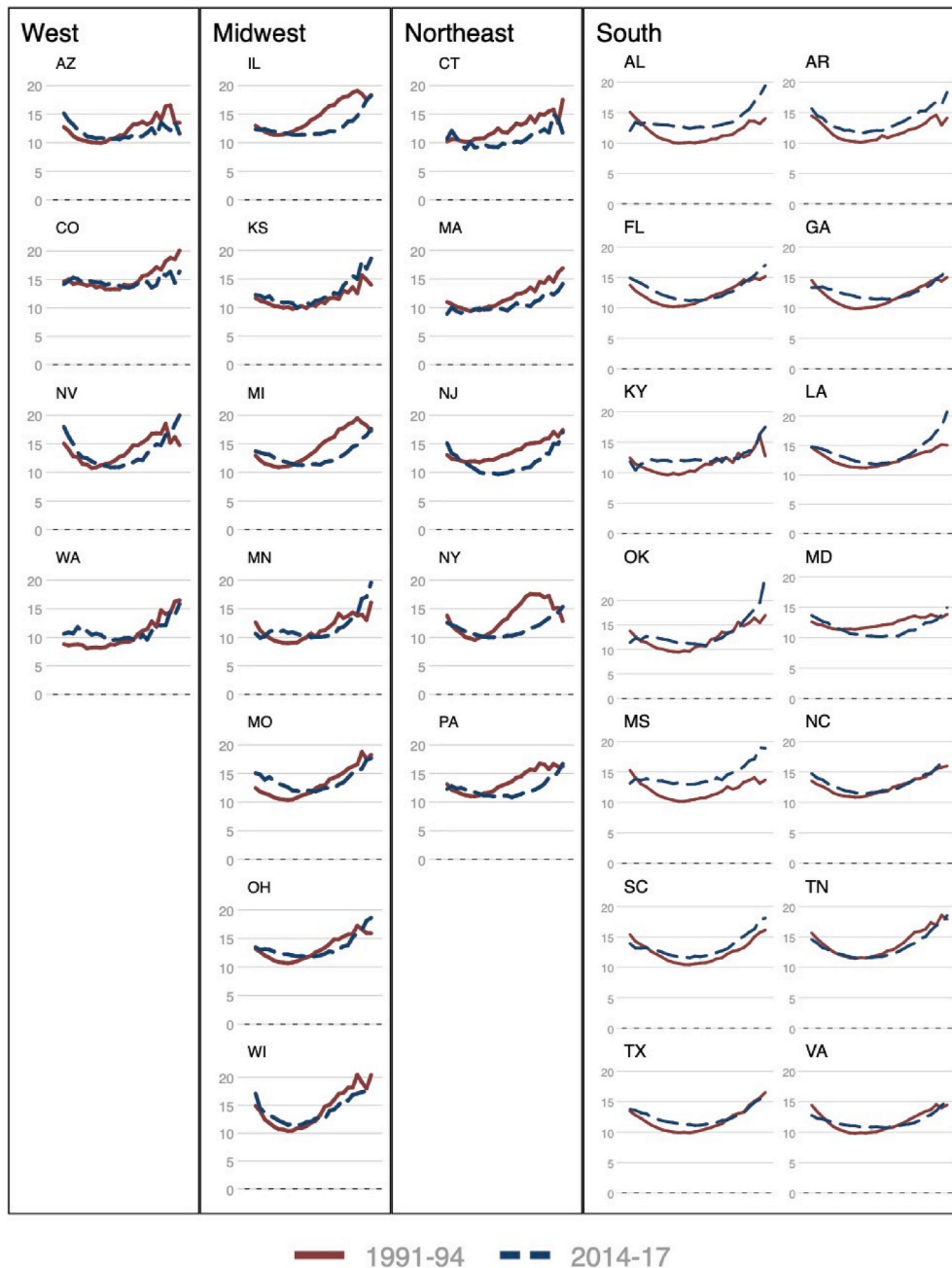
— 1991-94 — 2014-17

**Fig. A1.** Unadjusted Percentages of Births that are Low Birth Weight by Age and Race, 1991–94 and 2014–17, Population and Analytic Sample  
 Note: Data from birth certificate files include all singleton births to resident U.S. women aged 15+. The first panel shows results for all births. The second panel shows results for births in the analytic sample, which excludes births missing data on the health or education characteristics.

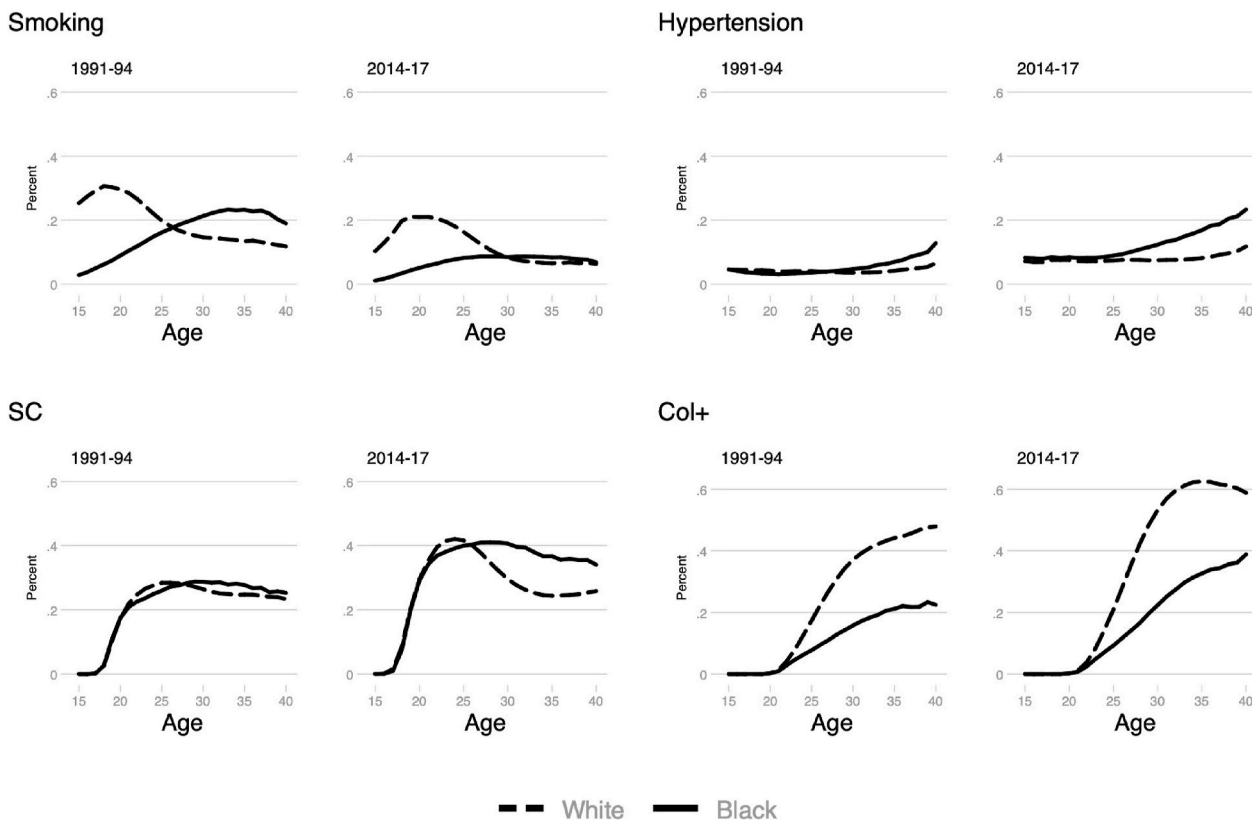


**Fig. A2.** Predicted White LBW Rates by Age in 1991–94 and 2014–17, Selected States  
 Note: Data from restricted birth certificate files include all singleton births to resident U.S. -born women aged 15+.





**Fig. A3.** Predicted Black LBW Rates by Age in 1991–94 and 2014–17, Selected States  
 Note: Data from restricted birth certificate files include all singleton births to resident U.S. -born women aged 15+.



**Fig. A4.** Selected Health and Education Characteristics by Age and Race, 1991–94 and 2014–17  
 Note: Data from restricted birth certificate files include all singleton births to resident U.S. -born women aged 15+.

Model 1:

$$LBW_i = \beta_0 +$$

$$\beta_1 T_i + \beta_2 A_i + \beta_3 R_i +$$

$$\beta_4 T_i * A_i + \beta_5 T_i * R_i + \beta_6 R_i * A_i + \beta_7 T_i * A_i * R_i + \beta_8 T_i * A_i^2 + \beta_9 T_i * R_i + \beta_{10} R_i * A_i^2 + \beta_{11} T_i * A_i^2 * R_i +$$

$$\beta_{12} T_i * A_i^3 + \beta_{13} T_i * R_i + \beta_{14} R_i * A_i^3 + \beta_{15} T_i * A_i^3 * R_i + \beta_{16} H_i + \beta_{17} H_i * A_i + \beta_{18} H_i * R_i + \beta_{19} H_i * A_i * R_i + \beta_{20} E_i + \beta_{21} E_i * A_i + \beta_{22} E_i * R_i + \beta_{23} E_i * A_i * R_i +$$

Where  $LBW_i$  is the predicted probability of an LBW birth for individual birth  $i$ .  $T_i$  is an indicator for whether the birth occurred in the 2014–17 period,  $R_i$  is an indicator for whether the mother was Black, and  $A_i$  is a continuous measure of age, which is interacted with both  $T_i$  and  $R_i$ . To allow for nonlinearity, quadratic  $A^2$  and cubic  $A^3$  age terms are also interacted with  $T_i$  and  $R_i$ .  $H_i$  is a vector of the maternal health variables, including the four-level measure of birth parity, measured at the individual level.  $H_i$  is fully interacted with both  $A_i$  and  $R_i$  to account for the possibility that the relationships between health characteristics and LBW vary by age and/or race/ethnicity.  $E_i$  is a vector of indicators for the mother’s education.  $E_i$  is also fully interacted with both  $A_i$  and  $R_i$  to account for the possibility that the relationships between health characteristics and LBW vary by age and/or race/ethnicity.  $s_i$  is the individual-level and  $\varepsilon_i$  is the error term.

**Table 1**  
 Predicted Rates of LBW and changes in the Black-White LBW gap by maternal age for White and Black mothers, US

Age	Black		White		BW Gap		Change in BW Gap	Smoking Contribution	Hypertension Contribution	Education Contribution
	1991–94	2014–17	1991–94	2014–17	1991–94	2014–17				
15	13.8	13.7	8.9	8.5	4.9	5.2	0.3	0.4	0.2	0.0
16	13.0	13.4	8.2	8.1	4.8	5.3	0.5	0.3	0.2	0.0
17	12.4	13.1	7.6	7.7	4.8	5.3	0.5	0.2	0.3	0.0
18	11.9	12.8	7.0	7.4	4.9	5.4	0.4	0.1	0.3	0.0
19	11.4	12.4	6.4	7.0	5.0	5.4	0.4	0.0	0.4	0.0
20	11.1	12.1	5.9	6.7	5.2	5.5	0.3	-0.0	0.3	-0.0
21	10.9	11.9	5.5	6.4	5.4	5.5	0.1	-0.1	0.3	-0.0
22	10.8	11.7	5.1	6.1	5.7	5.6	-0.1	-0.2	0.4	-0.1
23	10.8	11.5	4.7	5.8	6.0	5.7	-0.3	-0.3	0.3	-0.1
24	10.9	11.4	4.5	5.5	6.4	5.8	-0.6	-0.4	0.4	-0.1
25	11.0	11.3	4.2	5.3	6.8	6.0	-0.7	-0.4	0.4	-0.1
26	11.2	11.3	4.1	5.0	7.2	6.2	-0.9	-0.5	0.4	-0.1
27	11.5	11.3	4.0	4.8	7.6	6.4	-1.1	-0.6	0.5	-0.1
28	11.9	11.3	3.9	4.7	8.0	6.7	-1.3	-0.5	0.6	-0.1
29	12.2	11.4	3.9	4.5	8.4	6.8	-1.5	-0.5	0.6	-0.1
30	12.7	11.5	3.9	4.5	8.8	7.1	-1.8	-0.6	0.7	-0.1
31	13.1	11.7	3.9	4.5	9.2	7.3	-1.9	-0.6	0.7	-0.2
32	13.6	12.0	4.0	4.5	9.5	7.5	-2.0	-0.7	0.8	-0.1
33	14.1	12.3	4.2	4.5	10.0	7.8	-2.2	-0.7	0.9	-0.2
34	14.5	12.7	4.3	4.7	10.2	8.1	-2.1	-0.8	0.8	-0.2
35	14.9	13.2	4.5	4.8	10.4	8.3	-2.1	-0.9	1.1	-0.2
36	15.2	13.8	4.8	5.1	10.4	8.8	-1.6	-0.9	1.3	-0.2
37	15.7	14.4	5.1	5.4	10.6	9.0	-1.6	-1.2	1.1	-0.4
38	15.9	15.1	5.4	5.7	10.6	9.4	-1.2	-1.1	1.3	-0.6
39	15.8	16.0	5.7	6.2	10.1	9.8	-0.3	-1.7	1.3	-0.6
40+	16.0	16.8	6.2	6.8	9.8	10.0	0.2	-0.9	1.3	-0.9
Total	11.2	11.1	4.8	5.4	6.4	5.7	-0.7			
N	1,870,663	1,733,897	7,338,564	7,209,568						

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 2**  
 Predicted Rates of LBW and changes in the Black-White LBW gap by maternal age for White and Black mothers, AL

Age	Black		White		BW Gap		Smoking Contribution	Hypertension Contribution	Education Contribution
	1991–94	2014–17	1991–94	2014–17	1991–94	2014–17			
15	15.1	12.0	9.7	9.5	5.3	2.5	0.5	-0.3	0.0
16	14.1	13.4	8.8	9.0	5.3	4.4	0.4	0.5	0.0
17	13.4	13.0	8.2	8.4	5.2	4.6	0.3	0.2	0.1
18	12.5	13.5	7.5	8.0	5.0	5.5	0.2	0.7	0.0
19	11.7	13.1	6.8	7.6	4.9	5.5	0.1	0.3	-0.1
20	11.1	13.1	6.3	7.2	4.7	5.8	0.0	0.4	-0.0
21	10.7	13.0	5.8	7.0	4.9	6.0	-0.1	0.4	-0.1
22	10.4	13.0	5.4	6.7	5.0	6.2	-0.2	0.4	-0.1
23	10.1	12.8	5.1	6.3	4.9	6.4	-0.2	0.3	-0.0
24	10.0	12.7	4.8	6.1	5.2	6.6	-0.3	0.4	-0.1
25	10.0	12.6	4.7	5.9	5.4	6.7	-0.3	0.5	-0.1
26	10.1	12.4	4.5	5.7	5.7	6.7	-0.4	0.5	-0.1
27	10.0	12.6	4.4	5.6	5.7	7.0	-0.3	0.5	-0.0
28	10.2	12.6	4.4	5.4	5.8	7.3	-0.4	0.8	0.0
29	10.3	12.6	4.3	5.2	6.0	7.4	-0.3	0.7	0.0
30	10.7	12.6	4.4	5.1	6.3	7.5	-0.5	0.8	-0.1
31	10.7	12.8	4.5	5.2	6.2	7.6	-0.3	1.0	-0.1
32	11.2	13.0	4.7	5.3	6.5	7.7	-0.4	0.9	-0.2
33	11.2	13.3	4.9	5.5	6.4	7.7	-0.5	1.1	-0.2
34	11.4	13.5	5.0	5.8	6.5	7.7	-0.6	0.9	-0.3
35	12.1	14.1	5.2	5.9	6.9	8.2	-0.7	0.9	-0.2
36	12.6	14.9	5.6	6.3	7.0	8.6	-1.0	1.4	-0.4
37	13.6	15.5	6.3	6.9	7.3	8.7	-1.4	1.1	-0.4
38	13.6	16.8	6.7	7.1	6.9	9.7	-0.8	1.3	-0.8
39	13.2	17.8	6.6	8.2	6.6	9.6	-1.1	1.1	-1.2
40+	14.0	19.4	7.6	8.3	6.4	11.2	-0.9	1.0	-0.7

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 3**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, AR

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	14.5	15.7	9.1	8.7	5.3	7.0	0.6	0.0	-0.0
16	13.9	14.5	8.5	8.0	5.4	6.5	0.5	-0.2	0.0
17	13.0	14.1	7.9	7.8	5.2	6.4	0.4	0.0	-0.1
18	12.2	13.2	7.3	7.6	4.8	5.6	0.2	-0.2	-0.2
19	11.3	12.7	6.7	7.4	4.6	5.3	0.1	0.1	-0.1
20	10.8	12.5	6.2	7.1	4.6	5.4	-0.0	0.0	-0.1
21	10.5	12.1	5.9	6.7	4.6	5.4	-0.1	-0.0	-0.2
22	10.3	12.1	5.5	6.3	4.9	5.8	-0.2	0.0	-0.1
23	10.2	11.8	5.1	6.0	5.1	5.8	-0.2	-0.1	-0.1
24	10.1	11.6	4.9	5.7	5.2	5.8	-0.2	0.1	-0.1
25	10.2	11.8	4.7	5.6	5.5	6.1	-0.2	-0.0	-0.1
26	10.4	12.0	4.7	5.4	5.7	6.5	-0.3	0.1	-0.1
27	10.5	12.1	4.6	5.2	5.9	6.9	-0.3	0.2	-0.2
28	11.2	12.0	4.5	5.1	6.8	6.9	-0.4	-0.1	-0.2
29	10.9	12.6	4.5	5.0	6.4	7.5	-0.2	0.2	-0.1
30	11.2	12.8	4.6	5.0	6.6	7.8	-0.3	0.1	-0.1
31	11.4	13.2	4.7	5.1	6.8	8.1	-0.3	0.2	-0.2
32	11.7	13.6	5.0	5.2	6.8	8.4	-0.4	0.3	-0.1
33	12.2	14.1	5.2	5.4	7.0	8.7	-0.3	0.3	-0.4
34	12.4	14.4	5.4	5.7	7.0	8.7	-0.6	0.4	-0.4
35	12.8	15.2	5.8	6.0	7.0	9.3	-0.7	0.1	-0.3
36	13.3	15.3	6.4	6.5	6.8	8.8	-0.4	-0.2	-0.6
37	14.1	16.1	6.8	7.3	7.3	8.7	-1.5	0.1	-0.5
38	14.6	16.8	7.9	8.1	6.7	8.7	-0.5	-0.7	-0.6
39	12.9	16.3	8.1	8.8	4.9	7.5	-0.3	0.0	-0.5
40+	14.1	18.3	9.2	10.3	4.9	8.0	0.2	-0.9	-0.8

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 4**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, AZ

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	12.7	15.2	8.7	8.8	4.0	6.4	0.3	1.3	0.0
16	12.1	13.9	8.1	8.0	4.0	5.9	0.6	0.1	-0.0
17	11.2	13.2	7.5	7.7	3.7	5.5	0.3	0.5	0.0
18	10.7	12.2	6.9	7.1	3.8	5.2	0.1	0.5	0.0
19	10.4	11.8	6.4	6.7	4.1	5.1	-0.1	0.4	0.0
20	10.3	11.1	6.0	6.2	4.3	4.9	0.0	0.1	-0.0
21	10.1	11.0	5.6	5.9	4.5	5.1	-0.1	0.5	0.0
22	10.0	10.8	5.2	5.6	4.8	5.2	-0.2	0.3	0.0
23	9.9	10.8	4.9	5.3	5.0	5.5	-0.2	0.6	0.0
24	10.2	10.7	4.7	5.0	5.5	5.7	-0.2	0.5	0.0
25	10.7	10.4	4.5	4.9	6.2	5.6	-0.5	0.4	-0.0
26	10.7	10.8	4.4	4.7	6.4	6.1	-0.4	0.6	-0.1
27	11.3	10.6	4.3	4.4	7.0	6.2	-0.4	0.6	0.0
28	11.3	11.0	4.3	4.3	7.0	6.7	-0.3	0.8	-0.2
29	12.3	10.9	4.2	4.3	8.1	6.6	-0.5	0.6	-0.2
30	13.2	11.3	4.3	4.3	8.9	7.1	-0.8	0.8	-0.2
31	13.3	10.9	4.3	4.3	9.0	6.7	-0.8	0.9	-0.5
32	13.7	11.2	4.5	4.4	9.1	6.8	-0.4	1.0	-0.7
33	13.2	11.7	4.6	4.4	8.6	7.3	-0.5	1.1	-0.3
34	13.6	12.5	4.9	4.5	8.7	8.0	-0.4	1.8	-0.3
35	15.2	11.2	5.0	4.8	10.2	6.4	-1.2	0.5	-0.5
36	14.0	13.5	5.6	5.0	8.4	8.6	-0.2	2.2	-0.2
37	16.4	12.8	5.7	5.5	10.7	7.3	-1.0	1.1	-0.4
38	16.5	12.2	6.2	5.7	10.4	6.5	-0.9	0.3	-0.8
39	13.5	13.6	6.5	6.0	7.0	7.5	0.4	2.0	1.1
40+	13.5	11.6	6.8	6.7	6.7	4.9	-0.7	1.6	-0.7

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.



**Table 5**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, CO

Age	Black		White		BW Gap		Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	14.6	14.2	10.9	10.6	3.8	3.6	0.9	0.1	0.0
16	15.0	14.8	10.2	10.9	4.8	3.9	0.0	-0.2	-0.0
17	14.2	15.3	10.0	9.9	4.2	5.4	0.5	1.0	-0.0
18	14.4	15.1	9.1	9.3	5.3	5.8	0.2	0.7	-0.0
19	14.2	14.5	8.6	9.0	5.6	5.6	0.0	0.4	0.0
20	13.9	14.9	8.0	8.5	5.9	6.4	0.1	0.8	-0.0
21	14.1	14.7	7.5	8.1	6.7	6.5	-0.4	0.8	-0.1
22	13.6	14.5	7.0	7.7	6.6	6.8	0.2	0.6	-0.1
23	13.8	14.5	6.6	7.4	7.2	7.1	-0.3	0.5	0.1
24	13.3	14.0	6.2	7.1	7.1	7.0	0.0	0.3	-0.0
25	13.3	14.3	5.8	6.7	7.5	7.5	-0.1	0.7	-0.2
26	13.3	14.0	5.7	6.4	7.6	7.6	-0.2	0.5	-0.1
27	13.3	13.9	5.4	6.1	7.9	7.8	-0.3	0.7	0.1
28	14.1	13.7	5.2	5.9	8.9	7.7	-0.7	0.6	-0.1
29	13.9	13.5	5.1	5.8	8.8	7.7	-0.5	0.6	0.1
30	14.1	13.8	5.1	5.7	9.0	8.1	-0.2	0.8	0.0
31	14.6	14.3	5.3	5.7	9.3	8.6	-0.3	1.1	-0.1
32	15.6	14.1	5.2	5.7	10.4	8.4	-0.5	0.8	0.1
33	15.7	14.6	5.3	5.8	10.4	8.8	-0.5	0.7	0.3
34	16.4	13.6	5.5	6.0	10.8	7.6	-1.3	1.0	-0.3
35	17.2	14.0	5.8	6.1	11.4	8.0	-1.0	0.4	-0.1
36	16.7	16.2	6.1	6.4	10.6	9.8	-0.2	1.8	0.4
37	18.2	15.7	6.4	6.7	11.8	9.0	-1.7	2.0	-0.0
38	18.8	16.4	6.8	7.2	12.0	9.1	-0.1	0.6	-0.2
39	18.6	14.4	7.5	7.8	11.1	6.6	-1.3	-0.3	-0.6
40+	20.1	16.4	8.1	8.6	12.0	7.8	-2.1	0.6	-0.2

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 6**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, CT

Age	Black		White		BW Gap		Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	10.2	10.7	6.0	7.5	4.2	3.2	0.4	1.2	0.0
16	10.6	12.1	6.2	10.9	4.4	1.2	1.2	1.7	0.1
17	10.6	10.9	6.0	10.1	4.6	0.8	-0.2	-0.6	0.3
18	10.3	9.8	5.8	7.4	4.5	2.4	0.2	0.4	-0.1
19	10.2	8.9	5.5	7.1	4.7	1.8	-0.2	0.3	-0.1
20	10.2	10.1	5.1	5.9	5.1	4.1	-0.3	1.4	-0.4
21	10.7	9.1	4.7	6.3	6.0	2.9	-0.4	0.5	-0.4
22	10.7	9.3	4.5	5.8	6.2	3.4	-0.5	0.4	-0.4
23	10.8	9.7	4.1	5.2	6.6	4.5	-0.4	1.1	-0.5
24	11.4	9.3	3.9	5.1	7.5	4.3	-0.8	0.2	-0.3
25	11.7	9.3	3.7	4.8	8.0	4.4	-0.9	0.5	-0.4
26	12.5	9.2	3.6	4.7	8.9	4.5	-1.0	0.2	-0.4
27	11.8	9.9	3.5	4.4	8.4	5.5	-0.6	0.8	-0.2
28	11.8	9.7	3.3	4.4	8.4	5.2	-0.6	0.8	-0.4
29	12.5	9.9	3.3	4.4	9.2	5.6	-0.9	0.6	-0.2
30	13.4	10.2	3.3	4.3	10.1	5.9	-0.5	0.4	-0.3
31	13.1	10.1	3.3	4.3	9.8	5.8	-0.7	1.1	-0.4
32	13.5	10.5	3.3	4.3	10.1	6.2	-0.5	0.6	-0.4
33	14.6	11.2	3.4	4.1	11.1	7.1	-0.4	1.1	-0.2
34	13.6	11.9	3.5	4.3	10.1	7.6	-0.3	1.2	0.0
35	15.0	11.9	3.7	4.4	11.3	7.5	-0.9	1.5	-0.8
36	14.9	12.3	4.0	4.8	10.9	7.5	-0.0	0.8	-0.5
37	15.5	11.8	4.2	5.0	11.3	6.8	-0.7	1.3	-0.7
38	15.8	15.0	4.5	5.4	11.3	9.5	0.7	1.5	0.6
39	13.5	14.2	4.9	5.9	8.5	8.3	-0.6	2.3	-0.1
40+	17.5	11.6	5.4	6.5	12.1	5.1	-0.3	-0.5	-1.1

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 7**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, FL

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.8	14.9	8.4	7.9	5.3	7.0	0.5	0.0	-0.0
16	12.8	14.5	7.5	7.3	5.3	7.2	0.5	0.3	-0.0
17	12.2	14.1	7.0	7.1	5.2	6.9	0.6	0.3	-0.0
18	11.7	13.6	6.5	7.2	5.1	6.3	0.4	0.3	0.0
19	11.1	13.0	6.0	6.9	5.1	6.1	0.4	0.3	0.0
20	10.8	12.5	5.6	6.5	5.2	6.0	0.4	0.3	-0.0
21	10.4	12.1	5.3	6.3	5.2	5.9	0.3	0.3	-0.0
22	10.3	11.9	4.9	6.0	5.3	5.9	0.2	0.4	-0.0
23	10.2	11.6	4.7	5.9	5.5	5.7	0.0	0.3	-0.1
24	10.3	11.4	4.5	5.7	5.8	5.7	-0.2	0.3	-0.1
25	10.3	11.3	4.4	5.5	5.9	5.8	-0.2	0.4	-0.1
26	10.5	11.2	4.2	5.3	6.3	5.8	-0.4	0.4	-0.1
27	10.7	11.3	4.2	5.2	6.5	6.1	-0.5	0.5	-0.2
28	11.2	11.2	4.2	5.1	7.0	6.1	-0.6	0.5	-0.2
29	11.4	11.4	4.2	5.0	7.2	6.4	-0.6	0.7	-0.2
30	11.9	11.5	4.3	4.9	7.6	6.6	-0.8	0.7	-0.2
31	12.2	11.7	4.4	4.9	7.9	6.8	-0.9	0.7	-0.2
32	12.5	11.9	4.6	4.9	7.9	7.0	-0.9	0.9	-0.3
33	13.0	12.5	4.7	5.1	8.2	7.4	-0.9	0.9	-0.3
34	13.3	12.7	4.9	5.2	8.4	7.5	-1.0	0.9	-0.3
35	13.9	13.3	5.2	5.5	8.7	7.8	-1.3	1.1	-0.3
36	14.6	14.2	5.5	5.6	9.2	8.6	-1.3	1.2	-0.3
37	14.4	14.7	5.8	6.0	8.7	8.7	-1.0	1.2	-0.5
38	14.9	15.3	6.0	6.4	8.8	8.9	-1.4	1.6	-0.7
39	14.7	16.3	6.2	7.0	8.5	9.3	-1.2	1.4	-0.6
40+	15.2	17.0	6.7	7.5	8.5	9.5	-1.0	1.2	-0.9

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 8**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, GA

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	14.6	13.3	9.1	9.0	5.4	4.4	0.5	0.1	0.0
16	13.4	13.4	8.5	9.2	4.9	4.2	0.4	0.1	0.1
17	12.5	13.5	7.7	8.6	4.9	4.8	0.3	0.3	0.1
18	11.8	13.1	7.1	8.1	4.7	5.0	0.2	0.2	0.2
19	11.2	13.0	6.4	7.5	4.8	5.5	0.1	0.5	0.2
20	10.7	12.6	5.9	7.1	4.8	5.4	0.1	0.3	0.1
21	10.3	12.3	5.6	6.7	4.7	5.6	0.0	0.4	0.1
22	10.0	12.1	5.2	6.3	4.8	5.8	-0.0	0.5	0.0
23	9.9	11.9	4.9	6.0	5.0	5.9	-0.2	0.4	-0.0
24	9.9	11.7	4.6	5.7	5.3	5.9	-0.2	0.4	-0.0
25	10.0	11.7	4.4	5.5	5.6	6.2	-0.3	0.4	-0.1
26	10.1	11.5	4.2	5.2	5.9	6.3	-0.4	0.4	-0.0
27	10.3	11.4	4.1	4.9	6.1	6.5	-0.4	0.5	-0.1
28	10.5	11.5	4.1	4.8	6.5	6.8	-0.4	0.7	-0.0
29	10.8	11.4	4.0	4.6	6.8	6.8	-0.5	0.7	-0.1
30	11.3	11.6	4.1	4.5	7.2	7.1	-0.5	0.7	-0.1
31	11.7	11.7	4.2	4.5	7.5	7.2	-0.6	0.8	-0.0
32	12.2	11.9	4.3	4.5	7.9	7.4	-0.7	0.9	-0.2
33	12.6	12.1	4.4	4.5	8.2	7.6	-0.8	0.9	-0.2
34	12.9	12.6	4.7	4.7	8.2	7.9	-0.7	1.0	-0.2
35	13.5	12.8	4.9	4.9	8.6	7.9	-0.8	1.0	-0.3
36	13.8	13.3	5.2	5.3	8.6	8.0	-0.9	1.1	-0.3
37	14.4	13.8	5.4	5.7	9.0	8.2	-1.0	1.0	-0.5
38	14.8	14.8	5.8	6.2	9.0	8.6	-1.2	1.3	-0.7
39	14.4	15.3	6.2	6.7	8.3	8.7	-0.9	1.1	-0.5
40+	15.0	16.4	6.7	7.9	8.3	8.4	-1.1	1.1	-0.9

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 9**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, IL

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.0	12.4	8.2	7.3	4.8	5.0	0.2	0.2	0.0
16	12.4	12.2	7.8	7.1	4.6	5.2	0.4	0.2	0.0
17	11.9	12.4	7.3	7.4	4.6	5.0	0.3	0.3	0.0
18	11.6	12.1	6.8	7.2	4.8	4.9	0.1	0.3	0.0
19	11.4	12.0	6.3	7.0	5.0	5.0	0.0	0.3	-0.0
20	11.3	11.9	5.8	6.8	5.5	5.1	-0.1	0.4	-0.1
21	11.5	11.7	5.4	6.5	6.0	5.2	-0.2	0.4	-0.1
22	11.7	11.6	5.0	6.3	6.6	5.3	-0.4	0.3	-0.1
23	12.0	11.4	4.7	5.9	7.2	5.5	-0.5	0.3	-0.2
24	12.4	11.4	4.4	5.6	8.0	5.7	-0.6	0.2	-0.2
25	12.7	11.4	4.2	5.3	8.5	6.1	-0.6	0.4	-0.2
26	13.1	11.4	3.9	5.1	9.2	6.3	-0.7	0.4	-0.1
27	13.9	11.4	3.8	4.8	10.1	6.6	-0.8	0.4	-0.1
28	14.4	11.6	3.7	4.6	10.7	7.0	-0.7	0.5	-0.0
29	14.9	11.6	3.7	4.4	11.2	7.2	-0.7	0.7	-0.1
30	15.8	11.7	3.6	4.2	12.1	7.5	-0.9	0.8	-0.1
31	16.4	12.0	3.6	4.1	12.8	7.9	-0.9	1.0	-0.1
32	16.6	12.0	3.7	4.1	12.8	7.9	-1.0	0.8	-0.2
33	17.5	12.4	3.8	4.1	13.7	8.3	-1.1	1.0	-0.3
34	18.0	12.8	4.0	4.1	14.0	8.7	-1.2	1.1	-0.3
35	18.1	13.7	4.2	4.2	13.9	9.5	-1.0	1.4	-0.5
36	18.8	13.8	4.5	4.4	14.3	9.4	-1.4	1.2	-0.5
37	19.1	14.7	4.7	4.8	14.4	9.9	-1.5	1.3	-0.8
38	18.5	15.9	5.1	5.2	13.4	10.7	-1.7	1.8	-0.8
39	17.5	17.4	5.5	5.6	12.1	11.8	-0.9	1.6	-0.5
40+	18.3	18.2	6.1	6.5	12.2	11.8	-1.6	1.3	-1.1

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 10**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, KS

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	11.7	12.2	9.3	7.9	2.3	4.3	0.8	-0.5	0.0
16	11.2	12.1	8.6	7.9	2.6	4.1	0.4	-0.4	0.0
17	11.0	11.7	8.1	7.2	2.9	4.5	0.3	0.3	0.0
18	10.7	12.0	7.4	7.0	3.2	5.0	0.1	-0.0	0.1
19	10.3	11.0	6.7	6.7	3.6	4.4	-0.1	-0.0	0.1
20	10.2	11.1	6.1	6.2	4.1	4.9	-0.1	0.1	0.0
21	10.0	10.9	5.6	6.0	4.4	4.9	-0.1	0.1	-0.1
22	10.1	10.9	5.1	5.6	4.9	5.4	-0.1	0.2	-0.0
23	9.8	10.8	4.9	5.4	4.9	5.3	-0.1	0.2	-0.1
24	9.9	10.0	4.6	5.1	5.4	4.8	-0.1	0.0	-0.1
25	10.3	10.5	4.2	4.8	6.1	5.7	0.0	0.1	0.1
26	9.9	10.9	4.0	4.7	5.9	6.2	0.1	0.3	0.2
27	10.6	10.5	3.9	4.5	6.7	6.0	-0.2	0.1	0.1
28	10.3	11.2	3.8	4.3	6.5	6.9	0.2	0.7	0.2
29	11.0	11.3	3.7	4.3	7.3	7.1	0.3	0.6	0.0
30	10.8	11.7	3.7	4.2	7.1	7.6	-0.1	0.9	0.2
31	11.6	11.6	3.8	4.2	7.9	7.5	-0.2	0.7	-0.0
32	11.7	12.5	3.9	4.2	7.8	8.3	0.7	0.6	0.1
33	11.5	12.3	4.0	4.3	7.5	8.0	0.3	0.7	-0.0
34	13.0	13.8	4.1	4.5	8.9	9.4	0.6	1.1	0.3
35	12.6	14.7	4.3	4.9	8.3	9.8	0.3	1.7	0.6
36	13.6	15.6	4.8	5.0	8.8	10.6	0.1	2.6	0.3
37	12.5	15.0	4.9	5.4	7.6	9.6	-0.0	1.8	0.1
38	15.7	18.2	5.3	5.9	10.4	12.3	0.6	1.9	-0.3
39	14.9	16.8	5.8	6.5	9.0	10.3	0.2	2.1	-0.6
40+	14.0	18.6	6.8	7.3	7.2	11.3	-0.1	2.2	0.3

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 11**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, KY

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	12.4	11.8	8.8	9.0	3.6	2.9	0.3	2.0	0.0
16	11.4	10.4	8.5	8.8	2.9	1.6	0.3	0.2	0.1
17	11.0	11.4	7.9	8.4	3.2	3.0	0.3	0.8	0.1
18	10.6	11.7	7.4	8.2	3.3	3.5	0.2	0.4	0.2
19	10.3	12.2	6.7	7.7	3.6	4.5	0.1	0.6	0.2
20	10.0	11.9	6.3	7.6	3.7	4.4	0.0	0.4	0.1
21	9.8	12.1	6.0	7.3	3.8	4.7	-0.0	0.5	0.1
22	9.6	12.0	5.5	7.2	4.1	4.8	-0.0	0.3	0.1
23	9.9	11.7	5.2	7.0	4.7	4.8	-0.3	0.1	0.0
24	9.7	12.1	4.9	6.8	4.8	5.3	-0.4	0.2	0.1
25	9.9	12.0	4.7	6.5	5.2	5.5	-0.4	0.4	0.1
26	10.3	12.0	4.6	6.2	5.7	5.8	-0.4	0.4	0.1
27	10.2	12.2	4.5	6.1	5.8	6.0	-0.2	0.3	0.2
28	10.9	12.1	4.5	5.9	6.4	6.1	-0.6	0.7	0.2
29	11.4	12.1	4.3	5.8	7.1	6.4	-0.8	0.6	0.1
30	11.4	11.8	4.4	5.7	6.9	6.1	-0.5	0.3	0.3
31	12.0	12.4	4.6	5.7	7.4	6.6	-0.7	0.8	0.3
32	12.3	11.8	4.7	5.8	7.6	6.0	-0.8	0.6	0.1
33	12.4	12.8	5.0	5.8	7.4	7.0	-0.4	0.9	0.5
34	11.7	12.4	5.0	6.0	6.6	6.4	-0.6	0.9	0.3
35	13.2	12.3	5.4	6.4	7.8	5.9	-1.1	0.4	0.2
36	12.6	13.2	5.9	6.7	6.7	6.5	-1.1	0.9	0.5
37	13.0	13.6	6.2	7.4	6.8	6.2	-1.1	0.5	0.4
38	14.2	13.7	6.7	7.8	7.4	5.9	-1.4	0.5	0.0
39	16.0	16.4	7.5	8.3	8.5	8.0	-1.5	1.1	-0.0
40+	12.7	17.5	8.8	9.9	4.0	7.7	-0.7	1.5	0.1

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 12**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, LA

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	14.7	14.8	9.6	8.9	5.1	5.9	0.3	-0.0	0.0
16	14.0	14.6	8.8	8.5	5.2	6.0	0.4	0.2	0.0
17	13.4	14.4	7.8	8.3	5.6	6.1	0.2	0.3	0.1
18	12.8	14.0	6.9	7.8	5.9	6.3	0.2	0.4	-0.0
19	12.2	13.6	6.3	7.0	5.9	6.5	0.1	0.5	0.0
20	11.9	13.3	5.8	6.8	6.1	6.5	0.0	0.6	-0.1
21	11.6	13.0	5.4	6.5	6.2	6.5	-0.0	0.6	-0.0
22	11.4	12.7	5.1	6.3	6.3	6.4	-0.0	0.5	0.0
23	11.3	12.3	4.8	6.0	6.5	6.4	-0.2	0.6	-0.0
24	11.2	12.2	4.6	5.7	6.7	6.5	-0.3	0.7	-0.1
25	11.2	12.0	4.4	5.6	6.8	6.4	-0.2	0.6	-0.1
26	11.3	11.9	4.4	5.4	6.9	6.5	-0.3	0.7	-0.0
27	11.4	11.8	4.2	5.3	7.2	6.5	-0.4	0.7	-0.1
28	11.7	12.0	4.2	5.0	7.4	6.9	-0.4	1.0	-0.0
29	11.8	12.0	4.2	5.1	7.6	6.9	-0.4	0.9	-0.0
30	12.1	12.4	4.3	5.0	7.8	7.4	-0.5	1.2	0.0
31	12.3	12.6	4.4	5.0	7.9	7.6	-0.5	1.3	-0.1
32	12.8	12.9	4.5	5.2	8.3	7.7	-0.6	1.3	-0.1
33	13.0	13.4	4.7	5.3	8.3	8.1	-0.5	1.5	-0.1
34	13.3	14.0	5.0	5.6	8.3	8.4	-0.7	1.7	-0.1
35	13.6	14.7	5.1	5.8	8.5	9.0	-0.7	1.9	-0.2
36	13.9	15.5	5.4	6.2	8.6	9.3	-0.8	2.2	-0.3
37	14.0	16.2	5.7	6.8	8.4	9.4	-1.1	2.1	-0.4
38	14.7	17.4	6.0	7.3	8.7	10.0	-1.4	2.6	-0.7
39	15.2	18.2	6.2	8.0	9.0	10.2	-1.3	2.0	-0.9
40+	15.0	20.7	6.2	8.9	8.8	11.8	-0.9	2.6	-0.6

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.



**Table 13**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, MA

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	11.0	8.9	7.5	8.2	3.5	0.7	0.6	-0.4	0.0
16	10.6	10.0	7.1	8.4	3.5	1.6	0.5	-0.1	0.1
17	10.2	9.4	6.5	7.3	3.7	2.1	0.7	-0.0	0.1
18	9.9	9.1	5.9	7.0	4.0	2.1	0.2	-0.0	-0.1
19	9.7	9.4	5.5	6.3	4.1	3.1	0.0	0.1	0.0
20	9.4	9.3	5.2	6.1	4.2	3.2	-0.1	-0.0	-0.1
21	9.7	9.7	4.8	5.8	4.9	3.9	-0.1	0.2	-0.1
22	9.5	9.8	4.6	5.5	4.9	4.3	-0.2	0.2	-0.0
23	9.9	9.7	4.3	5.4	5.6	4.2	-0.4	0.1	-0.3
24	10.2	9.7	4.0	5.2	6.1	4.5	-0.5	0.1	-0.3
25	10.2	9.9	3.9	5.0	6.4	5.0	-0.5	0.3	-0.3
26	10.6	9.9	3.7	4.8	7.0	5.0	-0.7	0.1	-0.3
27	11.1	9.8	3.5	4.6	7.6	5.2	-0.8	0.2	-0.5
28	11.4	9.5	3.5	4.4	7.9	5.1	-0.7	0.0	-0.4
29	11.7	10.1	3.4	4.2	8.3	6.0	-0.6	0.2	-0.4
30	12.4	10.8	3.4	4.2	9.0	6.6	-0.5	0.4	-0.2
31	12.5	10.3	3.4	4.0	9.1	6.2	-0.8	0.4	-0.4
32	12.8	10.4	3.4	4.1	9.4	6.3	-0.4	0.3	-0.1
33	13.5	10.3	3.5	4.0	10.0	6.3	-0.8	0.1	-0.5
34	12.9	11.1	3.6	4.1	9.2	7.0	-0.3	0.4	-0.1
35	14.5	11.4	3.8	4.1	10.7	7.2	-0.9	0.9	-0.2
36	14.3	12.3	3.9	4.3	10.4	8.0	-0.3	1.1	-0.1
37	15.3	12.7	4.3	4.5	11.1	8.1	-1.0	0.7	-0.1
38	14.5	12.2	4.3	4.5	10.2	7.7	-0.3	0.4	-0.3
39	16.1	12.9	4.8	5.1	11.3	7.9	-0.6	0.8	-0.7
40+	16.9	14.2	5.0	5.5	11.9	8.7	-0.4	0.5	-0.4

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 14**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, MD

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	12.6	13.6	8.3	7.8	4.3	5.8	0.2	0.4	-0.0
16	12.2	13.2	7.7	7.6	4.4	5.5	0.2	0.6	0.0
17	12.1	12.7	7.3	7.6	4.8	5.1	0.1	0.4	0.1
18	11.7	12.4	6.7	7.2	5.0	5.2	0.1	0.8	0.1
19	11.5	11.6	6.2	6.8	5.2	4.8	0.1	0.5	0.1
20	11.3	11.4	5.8	6.7	5.5	4.8	-0.1	0.5	0.2
21	11.4	11.1	5.3	6.2	6.1	4.9	-0.1	0.6	0.1
22	11.4	10.7	5.0	6.0	6.4	4.6	-0.3	0.5	0.0
23	11.3	10.6	4.8	5.8	6.6	4.8	-0.4	0.5	0.0
24	11.5	10.5	4.5	5.5	7.0	4.9	-0.4	0.5	-0.0
25	11.6	10.3	4.3	5.3	7.3	4.9	-0.4	0.4	-0.1
26	11.7	10.3	4.2	5.0	7.6	5.3	-0.5	0.6	-0.1
27	11.9	10.2	4.1	4.9	7.8	5.4	-0.4	0.6	-0.1
28	12.1	10.2	3.9	4.6	8.1	5.5	-0.4	0.6	-0.1
29	12.2	10.3	3.9	4.4	8.3	5.9	-0.3	0.7	-0.1
30	12.3	10.3	3.9	4.3	8.4	6.0	-0.4	0.7	-0.1
31	12.8	10.3	3.9	4.1	8.8	6.1	-0.4	0.8	-0.1
32	13.0	10.7	3.9	4.3	9.1	6.5	-0.5	0.8	-0.2
33	13.3	11.2	4.0	4.2	9.3	7.0	-0.5	0.8	-0.2
34	13.6	11.2	4.1	4.2	9.5	7.0	-0.7	0.9	-0.3
35	13.3	11.6	4.2	4.4	9.1	7.2	-0.6	1.2	-0.4
36	13.3	12.4	4.5	4.6	8.8	7.8	-0.5	1.3	-0.3
37	13.8	12.5	4.6	5.0	9.2	7.6	-0.8	1.2	-0.5
38	13.5	12.9	4.6	5.4	8.9	7.5	-0.7	0.9	-0.9
39	13.3	13.7	4.7	5.9	8.6	7.8	-0.7	0.9	-0.7
40+	13.8	14.9	5.2	6.6	8.6	8.3	-0.8	0.9	-0.9

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 15**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, MI

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.0	13.7	8.5	8.9	4.5	4.8	0.3	-0.3	0.0
16	12.1	13.5	7.9	7.9	4.2	5.5	0.4	0.1	0.1
17	11.5	13.2	7.4	7.9	4.2	5.4	0.3	-0.1	0.1
18	11.3	13.1	6.7	7.4	4.7	5.8	0.1	0.2	0.0
19	11.0	12.6	6.0	6.9	5.0	5.7	-0.1	0.2	0.0
20	10.9	12.1	5.5	6.5	5.4	5.6	-0.0	0.1	-0.0
21	11.0	11.9	5.2	6.1	5.8	5.8	-0.2	0.2	-0.1
22	11.1	11.7	4.8	5.9	6.2	5.8	-0.3	0.3	-0.1
23	11.3	11.5	4.5	5.7	6.8	5.8	-0.4	0.1	-0.1
24	11.8	11.3	4.3	5.4	7.5	5.9	-0.6	0.2	-0.1
25	12.1	11.3	4.1	5.2	8.0	6.1	-0.7	0.3	-0.1
26	12.6	11.2	3.9	5.0	8.7	6.3	-0.7	0.2	-0.1
27	13.2	11.4	3.8	4.8	9.4	6.6	-0.7	0.3	-0.1
28	13.8	11.4	3.8	4.7	10.0	6.7	-0.8	0.4	-0.1
29	14.7	11.3	3.7	4.6	11.0	6.8	-1.0	0.4	-0.1
30	15.4	11.8	3.8	4.6	11.6	7.2	-1.0	0.4	-0.1
31	15.8	12.0	3.9	4.5	11.9	7.5	-1.0	0.4	-0.1
32	16.2	12.1	4.0	4.5	12.2	7.5	-1.1	0.4	-0.2
33	17.5	12.6	4.1	4.7	13.4	7.9	-1.4	0.4	-0.2
34	17.7	13.0	4.3	4.7	13.5	8.3	-1.2	0.4	-0.2
35	18.4	13.7	4.6	5.0	13.8	8.7	-1.4	0.5	-0.3
36	18.8	14.5	5.0	5.2	13.8	9.3	-1.8	0.6	-0.3
37	19.5	14.8	5.3	5.7	14.2	9.1	-2.2	0.6	-0.4
38	18.7	15.9	5.7	5.9	13.0	10.0	-1.6	0.5	-0.2
39	18.2	16.5	6.2	6.5	12.1	9.9	-1.5	0.4	-0.5
40+	17.2	17.6	6.7	7.4	10.5	10.2	-1.7	0.3	-0.3

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 16**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, MN

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	12.6	10.6	6.4	7.9	6.2	2.7	0.2	0.5	0.0
16	11.2	9.9	6.6	6.6	4.6	3.3	0.0	1.0	-0.0
17	10.5	10.2	6.1	6.9	4.4	3.3	-0.1	-0.0	0.0
18	9.9	11.0	5.6	6.3	4.3	4.7	-0.2	0.8	0.0
19	9.5	11.2	5.1	6.1	4.4	5.1	-0.4	0.7	0.1
20	9.2	10.9	4.6	5.6	4.6	5.3	-0.5	0.6	0.1
21	9.0	11.2	4.3	5.3	4.7	5.8	-0.5	0.7	0.1
22	9.0	10.8	3.9	4.9	5.1	5.9	-0.6	0.6	0.1
23	9.0	10.9	3.7	4.7	5.4	6.2	-0.6	0.8	0.1
24	9.1	10.6	3.4	4.3	5.7	6.3	-0.6	0.5	0.2
25	9.6	10.3	3.2	4.2	6.4	6.0	-0.8	0.3	0.2
26	10.0	10.6	3.0	4.0	7.0	6.7	-0.5	0.7	0.2
27	10.7	10.0	2.9	3.8	7.7	6.2	-0.8	0.6	0.1
28	10.1	10.1	2.9	3.8	7.2	6.3	-0.4	0.8	0.3
29	11.1	10.1	2.8	3.7	8.2	6.4	-0.5	0.6	0.1
30	11.2	10.2	2.9	3.6	8.3	6.5	-0.4	0.9	-0.0
31	11.9	10.3	2.9	3.6	9.0	6.7	-0.2	1.0	0.2
32	12.6	10.4	3.0	3.7	9.5	6.8	-0.8	1.2	0.1
33	14.1	11.6	3.1	3.8	11.0	7.8	-0.7	1.2	-0.0
34	13.4	11.8	3.3	3.9	10.1	7.9	-0.6	1.5	-0.0
35	13.7	12.5	3.4	4.0	10.4	8.5	-0.2	2.0	-0.4
36	14.4	13.5	3.8	4.4	10.6	9.1	-0.2	2.0	0.2
37	13.8	14.1	4.0	4.7	9.8	9.4	0.1	1.6	-0.0
38	14.0	16.8	4.2	5.2	9.7	11.6	0.3	3.6	-0.5
39	13.0	17.1	4.6	5.6	8.4	11.5	1.8	2.1	0.1
40+	16.1	19.6	5.1	6.1	11.0	13.4	0.1	2.3	0.3

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 17**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, MO

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	12.5	15.1	9.0	8.9	3.5	6.2	0.4	0.8	0.0
16	11.8	14.8	8.1	7.9	3.7	6.9	0.4	0.3	0.0
17	11.5	13.9	7.5	7.9	4.0	6.0	0.4	-0.1	0.0
18	11.3	14.4	6.9	7.6	4.3	6.8	0.1	0.6	-0.0
19	10.8	13.7	6.4	7.2	4.4	6.6	0.1	0.5	-0.1
20	10.6	13.2	6.0	6.7	4.5	6.5	-0.0	0.4	-0.1
21	10.5	13.0	5.6	6.4	4.8	6.6	-0.0	0.5	-0.1
22	10.4	12.6	5.3	6.2	5.1	6.4	-0.2	0.4	-0.2
23	10.5	12.0	4.9	5.9	5.6	6.2	-0.4	0.4	-0.2
24	10.8	12.0	4.6	5.6	6.2	6.3	-0.4	0.4	-0.2
25	11.2	11.8	4.4	5.4	6.7	6.4	-0.7	0.4	-0.2
26	11.4	12.0	4.2	5.2	7.2	6.8	-0.6	0.5	-0.1
27	11.7	12.0	4.1	5.0	7.6	7.0	-0.7	0.6	-0.1
28	12.4	11.9	4.1	4.9	8.3	7.0	-0.9	0.7	-0.2
29	12.9	12.2	4.0	4.7	8.8	7.5	-0.7	0.7	-0.1
30	13.0	12.5	4.1	4.6	8.9	7.8	-0.8	1.2	-0.1
31	14.0	12.5	4.2	4.7	9.8	7.8	-1.2	1.1	-0.2
32	14.3	12.5	4.3	4.8	10.0	7.7	-1.0	1.1	-0.1
33	14.7	13.1	4.4	4.8	10.3	8.3	-1.0	1.2	-0.2
34	15.1	13.5	4.6	5.0	10.6	8.4	-1.2	1.4	-0.0
35	15.8	14.3	4.7	5.1	11.1	9.1	-1.1	1.6	0.1
36	16.2	15.1	5.1	5.5	11.2	9.6	-0.9	2.2	-0.2
37	16.6	15.3	5.3	6.0	11.3	9.3	-1.4	2.1	-0.1
38	18.8	15.9	5.4	6.2	13.4	9.7	-1.9	1.8	-0.1
39	17.6	17.4	5.5	6.6	12.1	10.8	-1.6	2.1	0.1
40+	18.3	17.7	6.0	7.1	12.3	10.6	-1.5	2.0	-0.1

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 18**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, MS

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	15.3	13.2	9.8	10.8	5.5	2.4	0.7	-0.4	0.0
16	14.1	13.9	9.2	10.1	4.9	3.7	0.5	-0.2	0.1
17	13.1	13.7	8.3	9.7	4.7	4.0	0.4	-0.1	0.3
18	12.6	13.9	7.6	8.8	5.0	5.1	0.3	-0.0	0.3
19	11.9	13.7	6.9	8.2	5.0	5.6	0.2	-0.0	0.3
20	11.3	13.6	6.3	7.8	4.9	5.8	0.1	0.1	0.2
21	10.9	13.6	5.8	7.3	5.1	6.2	0.0	0.2	0.1
22	10.6	13.3	5.5	6.9	5.1	6.4	-0.1	0.1	0.0
23	10.4	13.1	5.2	6.6	5.2	6.5	-0.1	0.1	-0.1
24	10.2	13.2	4.9	6.3	5.3	6.9	-0.1	0.2	-0.1
25	10.2	13.0	4.7	6.0	5.4	7.0	-0.1	0.2	-0.1
26	10.3	13.0	4.7	5.8	5.6	7.2	-0.2	0.3	-0.1
27	10.5	13.0	4.6	5.7	5.9	7.4	-0.2	0.5	-0.1
28	10.7	13.2	4.7	5.5	6.0	7.7	-0.2	0.6	-0.1
29	10.8	13.5	4.7	5.4	6.1	8.1	-0.1	0.7	-0.1
30	11.2	13.3	4.6	5.4	6.5	7.9	-0.3	0.6	-0.2
31	11.4	14.0	5.0	5.3	6.5	8.7	-0.3	1.1	-0.2
32	11.8	13.7	5.1	5.5	6.8	8.2	-0.5	0.8	-0.4
33	12.6	14.5	5.1	5.7	7.5	8.8	-0.6	1.0	-0.5
34	12.2	14.9	5.5	6.1	6.6	8.8	-0.4	1.1	-0.4
35	12.5	15.3	5.6	6.5	6.8	8.8	-0.7	1.4	-0.5
36	13.3	15.9	6.2	6.7	7.1	9.2	-1.0	1.5	-0.9
37	13.6	16.8	6.5	8.0	7.2	8.8	-0.9	0.8	-1.3
38	14.1	17.2	6.9	8.1	7.1	9.1	-0.7	0.4	-1.1
39	13.1	19.0	7.1	8.9	6.1	10.1	-1.1	2.4	-1.4
40+	13.7	18.9	7.8	10.2	5.9	8.7	-0.4	0.6	-1.8

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 19**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, NC

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.5	14.7	9.4	8.3	4.1	6.5	0.5	0.4	0.0
16	13.0	14.0	8.9	7.8	4.1	6.2	0.5	0.2	0.0
17	12.6	13.7	8.1	8.0	4.5	5.7	0.4	0.3	0.0
18	12.2	13.1	7.5	7.7	4.6	5.4	0.3	0.3	0.1
19	11.6	12.7	6.7	7.5	4.8	5.3	0.1	0.4	0.0
20	11.2	12.3	6.3	7.2	5.0	5.1	0.1	0.3	0.1
21	11.0	12.0	5.9	7.0	5.2	5.0	-0.1	0.3	0.1
22	11.0	11.8	5.5	6.7	5.5	5.2	-0.1	0.3	0.0
23	10.9	11.6	5.2	6.5	5.6	5.1	-0.2	0.3	-0.0
24	10.9	11.5	5.0	6.3	5.9	5.2	-0.2	0.3	-0.0
25	11.1	11.4	4.7	6.0	6.3	5.4	-0.4	0.3	-0.1
26	11.3	11.6	4.6	5.7	6.7	5.9	-0.3	0.4	-0.1
27	11.6	11.7	4.5	5.5	7.1	6.2	-0.4	0.5	-0.1
28	11.7	12.0	4.4	5.3	7.3	6.6	-0.5	0.6	-0.1
29	11.9	12.0	4.5	5.1	7.4	6.9	-0.3	0.6	-0.1
30	12.5	12.2	4.5	5.0	8.1	7.1	-0.8	0.6	-0.2
31	12.8	12.4	4.6	4.9	8.2	7.5	-0.5	0.6	-0.2
32	13.0	12.8	4.7	4.8	8.3	8.0	-0.7	0.9	-0.2
33	13.3	13.2	4.9	4.9	8.4	8.3	-0.7	1.0	-0.2
34	13.9	13.8	5.0	5.0	8.9	8.8	-0.6	1.0	-0.3
35	13.9	14.0	5.4	5.3	8.5	8.8	-0.7	1.0	-0.3
36	14.2	14.6	5.7	5.5	8.5	9.1	-0.9	1.2	-0.5
37	14.9	14.7	6.1	5.9	8.8	8.8	-1.1	0.6	-0.5
38	15.5	15.7	6.5	6.2	9.1	9.5	-0.9	0.7	-0.8
39	15.8	16.5	6.6	6.6	9.1	9.9	-0.9	1.1	-0.6
40+	16.0	17.2	7.4	7.5	8.5	9.6	-0.8	0.7	-1.0

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 20**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, NJ

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.1	15.1	8.3	11.8	4.8	3.3	0.3	0.5	0.0
16	12.4	13.3	7.7	8.8	4.7	4.5	0.0	0.7	0.0
17	12.3	12.9	7.1	9.0	5.2	3.9	0.1	0.6	0.1
18	12.0	11.7	6.6	8.4	5.4	3.3	0.0	-0.2	-0.0
19	11.8	11.6	6.2	7.4	5.6	4.3	-0.1	0.6	0.0
20	11.9	11.1	5.7	6.3	6.3	4.8	-0.0	0.6	0.0
21	11.9	10.6	5.2	5.6	6.8	5.0	-0.0	0.5	0.1
22	11.8	10.0	4.8	5.1	7.0	4.9	-0.1	0.4	0.1
23	12.1	9.9	4.6	4.9	7.5	5.0	-0.2	0.5	-0.0
24	12.2	9.8	4.3	4.6	8.0	5.2	-0.2	0.6	-0.1
25	12.2	9.9	4.0	4.5	8.2	5.3	-0.3	0.6	-0.1
26	12.6	9.7	3.9	4.4	8.7	5.3	-0.4	0.6	-0.2
27	13.0	9.8	3.8	4.4	9.2	5.4	-0.4	0.5	-0.1
28	13.1	10.0	3.6	4.2	9.5	5.7	-0.5	0.8	-0.1
29	13.5	10.2	3.6	4.3	9.9	5.9	-0.3	0.6	-0.1
30	13.9	10.4	3.5	4.1	10.4	6.3	-0.4	0.9	-0.0
31	14.1	10.6	3.6	4.2	10.5	6.3	-0.6	0.7	-0.1
32	14.9	10.8	3.6	4.2	11.3	6.7	-0.4	0.6	-0.1
33	15.1	10.9	3.7	4.3	11.4	6.6	-0.7	0.7	-0.1
34	15.2	11.8	3.8	4.2	11.3	7.6	-0.6	1.2	-0.1
35	15.2	12.2	4.0	4.3	11.2	7.9	-0.6	1.2	-0.1
36	15.8	13.3	4.2	4.4	11.6	8.9	-0.3	1.3	0.1
37	16.0	13.3	4.5	4.7	11.4	8.6	-0.5	1.1	-0.3
38	17.1	15.0	4.9	4.9	12.2	10.1	-0.5	1.4	0.0
39	16.3	15.0	5.3	5.0	11.0	9.9	-0.5	1.1	-0.1
40+	17.4	17.1	5.8	5.6	11.6	11.4	-0.5	1.7	-0.3

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 21**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, NJ

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.1	15.1	8.3	11.8	4.8	3.3	0.3	0.5	0.0
16	12.4	13.3	7.7	8.8	4.7	4.5	0.0	0.7	0.0
17	12.3	12.9	7.1	9.0	5.2	3.9	0.1	0.6	0.1
18	12.0	11.7	6.6	8.4	5.4	3.3	0.0	-0.2	-0.0
19	11.8	11.6	6.2	7.4	5.6	4.3	-0.1	0.6	0.0
20	11.9	11.1	5.7	6.3	6.3	4.8	-0.0	0.6	0.0
21	11.9	10.6	5.2	5.6	6.8	5.0	-0.0	0.5	0.1
22	11.8	10.0	4.8	5.1	7.0	4.9	-0.1	0.4	0.1
23	12.1	9.9	4.6	4.9	7.5	5.0	-0.2	0.5	-0.0
24	12.2	9.8	4.3	4.6	8.0	5.2	-0.2	0.6	-0.1
25	12.2	9.9	4.0	4.5	8.2	5.3	-0.3	0.6	-0.1
26	12.6	9.7	3.9	4.4	8.7	5.3	-0.4	0.6	-0.2
27	13.0	9.8	3.8	4.4	9.2	5.4	-0.4	0.5	-0.1
28	13.1	10.0	3.6	4.2	9.5	5.7	-0.5	0.8	-0.1
29	13.5	10.2	3.6	4.3	9.9	5.9	-0.3	0.6	-0.1
30	13.9	10.4	3.5	4.1	10.4	6.3	-0.4	0.9	-0.0
31	14.1	10.6	3.6	4.2	10.5	6.3	-0.6	0.7	-0.1
32	14.9	10.8	3.6	4.2	11.3	6.7	-0.4	0.6	-0.1
33	15.1	10.9	3.7	4.3	11.4	6.6	-0.7	0.7	-0.1
34	15.2	11.8	3.8	4.2	11.3	7.6	-0.6	1.2	-0.1
35	15.2	12.2	4.0	4.3	11.2	7.9	-0.6	1.2	-0.1
36	15.8	13.3	4.2	4.4	11.6	8.9	-0.3	1.3	0.1
37	16.0	13.3	4.5	4.7	11.4	8.6	-0.5	1.1	-0.3
38	17.1	15.0	4.9	4.9	12.2	10.1	-0.5	1.4	0.0
39	16.3	15.0	5.3	5.0	11.0	9.9	-0.5	1.1	-0.1
40+	17.4	17.1	5.8	5.6	11.6	11.4	-0.5	1.7	-0.3

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 22**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, NV

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	15.1	18.0	9.8	9.5	5.3	8.5	0.0	2.1	0.0
16	14.1	16.3	8.9	8.9	5.2	7.3	0.1	1.1	0.1
17	12.8	15.0	8.1	8.1	4.7	6.9	0.4	0.7	0.1
18	12.7	13.5	7.2	7.7	5.5	5.8	-0.0	0.0	0.1
19	11.5	12.6	6.6	7.2	4.9	5.4	0.0	-0.0	0.0
20	11.4	12.5	6.0	6.8	5.3	5.7	-0.0	0.1	0.0
21	10.8	11.9	5.6	6.5	5.2	5.5	-0.0	0.0	-0.0
22	10.9	11.6	5.2	6.1	5.6	5.5	-0.3	0.2	-0.2
23	11.3	11.1	5.1	5.8	6.2	5.3	-0.4	0.0	-0.2
24	11.4	11.2	4.9	5.6	6.6	5.7	-0.4	0.2	-0.1
25	11.7	10.9	4.8	5.5	6.8	5.4	-0.6	0.0	-0.0
26	12.1	10.9	4.8	5.3	7.3	5.6	-0.7	0.2	-0.1
27	12.7	10.9	4.7	5.2	8.1	5.7	-0.8	0.1	-0.0
28	13.0	11.2	4.7	5.2	8.3	6.1	-0.7	0.3	-0.0
29	13.8	11.3	4.7	5.1	9.0	6.2	-1.0	0.4	-0.1
30	14.8	11.8	4.8	5.1	9.9	6.7	-1.5	0.7	-0.2
31	14.7	12.3	4.8	5.1	9.9	7.1	-1.3	0.4	-0.1
32	15.2	12.1	5.2	5.2	10.1	7.0	-1.5	0.4	0.1
33	15.8	13.3	5.4	5.3	10.4	8.0	-2.0	0.7	-0.0
34	16.8	14.1	5.8	5.5	11.0	8.6	-2.0	0.8	-0.4
35	16.8	14.9	6.1	6.0	10.8	8.9	-2.3	0.4	-0.0
36	16.8	14.8	6.4	6.1	10.4	8.6	-2.4	0.5	-0.3
37	18.5	16.6	6.8	6.8	11.7	9.7	-3.6	0.7	-0.2
38	15.2	16.5	7.2	7.2	7.9	9.3	-2.5	0.4	-0.2
39	16.2	18.4	7.4	7.8	8.8	10.7	-3.0	-0.0	-0.7
40+	14.8	20.0	8.4	8.9	6.3	11.1	-4.1	0.7	-0.6

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 23**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, NY

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.8	12.6	8.0	7.3	5.8	5.3	-0.1	0.3	0.0
16	12.0	12.1	7.9	7.5	4.2	4.6	-0.0	0.1	-0.1
17	11.2	11.9	7.9	7.3	3.3	4.6	-0.3	0.3	0.0
18	10.7	11.4	7.2	6.7	3.5	4.7	-0.2	0.0	0.0
19	10.0	11.0	6.5	6.1	3.5	4.9	-0.4	0.3	0.0
20	9.8	10.7	6.1	5.7	3.7	5.0	-0.4	0.4	-0.1
21	9.5	10.5	5.9	5.4	3.7	5.1	-0.3	0.4	-0.0
22	10.0	10.2	5.4	5.1	4.6	5.1	-0.4	0.2	-0.1
23	10.1	10.1	5.2	4.9	4.9	5.2	-0.5	0.3	-0.1
24	10.6	10.0	5.1	4.7	5.5	5.3	-0.5	0.3	-0.1
25	11.1	10.0	5.0	4.6	6.0	5.4	-0.4	0.4	-0.3
26	12.0	10.1	4.7	4.5	7.3	5.6	-0.6	0.3	-0.3
27	12.8	10.0	4.6	4.4	8.3	5.7	-0.6	0.4	-0.4
28	13.3	10.3	4.5	4.3	8.8	6.0	-0.6	0.5	-0.4
29	14.5	10.3	4.3	4.2	10.2	6.1	-0.7	0.4	-0.4
30	15.2	10.5	4.3	4.1	10.9	6.4	-0.7	0.7	-0.5
31	16.0	10.7	4.2	4.0	11.7	6.6	-0.7	0.7	-0.6
32	17.1	11.1	4.2	4.0	12.9	7.1	-0.8	0.8	-0.7
33	17.6	11.6	4.2	4.0	13.4	7.5	-1.0	1.0	-0.8
34	17.5	11.8	4.3	4.1	13.3	7.8	-1.0	1.3	-0.8
35	17.5	12.2	4.4	4.2	13.1	8.0	-0.8	1.0	-0.9
36	17.0	12.8	4.4	4.4	12.6	8.4	-0.7	1.2	-1.0
37	17.2	13.4	4.7	4.6	12.6	8.8	-0.7	1.0	-1.1
38	15.1	13.9	4.9	4.9	10.1	9.0	-0.6	1.8	-1.3
39	15.2	14.4	5.1	5.3	10.1	9.1	-1.0	1.1	-1.4
40+	12.8	15.4	5.2	5.8	7.6	9.5	-0.9	1.7	-1.5

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 24**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, OH

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.2	13.4	9.3	8.2	3.9	5.2	0.3	0.6	0.0
16	12.7	13.0	8.5	7.9	4.1	5.1	0.3	0.3	0.0
17	12.0	13.1	8.0	7.7	4.0	5.4	0.2	0.6	0.0
18	11.6	13.0	7.3	7.5	4.3	5.6	0.0	0.6	0.0
19	11.1	12.7	6.7	7.2	4.5	5.5	-0.1	0.4	0.1
20	10.9	12.4	6.2	6.9	4.7	5.5	-0.1	0.4	0.0
21	10.8	12.3	5.8	6.7	5.0	5.6	-0.2	0.4	0.0
22	10.7	12.2	5.4	6.5	5.3	5.7	-0.4	0.5	0.0
23	10.8	12.0	5.0	6.2	5.8	5.8	-0.5	0.6	-0.1
24	11.0	11.9	4.7	6.0	6.3	5.9	-0.6	0.4	-0.1
25	11.4	11.9	4.4	5.7	7.0	6.3	-0.8	0.6	-0.0
26	11.7	11.8	4.2	5.5	7.4	6.3	-0.8	0.7	-0.0
27	12.0	11.7	4.1	5.3	7.8	6.4	-0.8	0.6	-0.0
28	12.6	11.9	4.0	5.1	8.6	6.8	-0.8	0.8	0.0
29	12.9	12.0	4.0	4.9	9.0	7.1	-0.9	0.8	-0.0
30	13.4	12.3	4.0	4.8	9.4	7.6	-0.8	1.1	0.0
31	14.0	12.7	4.0	4.7	10.0	8.0	-0.9	1.2	0.0
32	14.9	12.5	4.2	4.7	10.7	7.8	-1.1	1.1	-0.0
33	14.8	13.1	4.3	4.8	10.5	8.3	-1.2	1.4	-0.0
34	15.3	13.6	4.5	4.9	10.9	8.7	-1.1	1.5	-0.0
35	15.7	13.8	4.7	5.1	11.1	8.7	-1.1	1.1	0.0
36	15.8	15.2	5.0	5.4	10.8	9.8	-0.9	1.9	-0.1
37	17.2	16.0	5.4	5.8	11.9	10.2	-1.8	1.7	-0.0
38	16.6	16.5	5.6	6.2	11.0	10.3	-1.3	1.5	-0.1
39	15.9	18.1	6.0	6.6	10.0	11.5	-1.5	2.0	-0.4
40+	15.9	18.6	6.6	7.3	9.3	11.3	-1.5	2.1	-0.4

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.



**Table 25**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, OK

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.8	11.4	9.7	8.2	4.1	3.2	0.0	-0.1	0.0
16	12.7	12.3	9.2	8.3	3.5	4.0	-0.0	0.1	0.1
17	11.7	12.0	7.9	7.7	3.8	4.3	-0.0	0.1	0.1
18	11.5	12.7	6.7	7.2	4.7	5.5	-0.0	0.3	0.0
19	10.8	12.6	6.1	6.8	4.7	5.7	-0.0	0.4	-0.0
20	10.3	12.4	5.5	6.6	4.7	5.8	0.0	0.4	-0.0
21	10.1	12.1	5.0	6.3	5.1	5.8	-0.0	0.2	-0.1
22	9.7	12.0	4.7	6.1	5.1	5.8	-0.1	0.4	0.1
23	9.6	11.6	4.3	5.9	5.2	5.7	-0.2	0.3	-0.1
24	9.4	11.3	4.2	5.7	5.3	5.6	-0.2	0.1	0.0
25	9.8	11.4	4.1	5.5	5.7	5.9	-0.1	0.4	-0.1
26	9.6	11.2	3.9	5.3	5.7	5.9	-0.2	0.4	0.1
27	10.5	11.2	3.9	5.2	6.6	5.9	-0.2	0.4	-0.2
28	10.8	11.0	4.0	5.1	6.8	5.9	-0.1	0.3	-0.0
29	10.7	10.8	3.9	5.0	6.8	5.8	-0.2	0.5	-0.1
30	12.1	11.5	4.0	5.0	8.1	6.5	-0.5	0.5	-0.0
31	12.4	12.0	4.1	5.1	8.2	6.9	-0.1	0.7	-0.1
32	13.5	12.4	4.2	5.0	9.3	7.4	-0.3	0.8	-0.3
33	13.3	13.3	4.6	5.2	8.8	8.1	-0.1	0.7	0.2
34	13.6	13.8	4.8	5.5	8.8	8.3	-0.2	0.7	0.2
35	15.6	14.1	4.9	5.7	10.7	8.4	-0.6	0.4	-0.0
36	14.8	15.8	5.1	6.2	9.7	9.7	-0.5	1.0	0.2
37	15.4	17.0	5.4	6.6	10.0	10.4	-0.1	0.4	0.1
38	16.4	18.3	5.8	6.9	10.6	11.4	-0.6	0.7	-0.2
39	15.5	19.6	6.1	7.3	9.4	12.3	-0.5	1.0	-0.4
40+	17.0	24.8	6.2	8.1	10.8	16.7	-0.6	1.6	-0.8

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 26**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, PA

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.2	12.3	9.5	7.6	3.6	4.7	0.0	0.2	0.0
16	12.1	12.8	8.4	7.6	3.7	5.2	-0.0	0.7	0.0
17	11.9	12.4	7.7	7.4	4.2	5.0	-0.3	0.5	0.0
18	11.5	12.5	7.0	7.3	4.5	5.2	-0.5	0.6	-0.0
19	11.2	12.2	6.4	7.0	4.8	5.2	-0.5	0.6	-0.1
20	11.1	11.9	5.9	6.8	5.1	5.1	-0.6	0.5	-0.1
21	11.0	11.7	5.5	6.6	5.5	5.1	-0.6	0.5	-0.1
22	11.2	11.4	5.1	6.3	6.1	5.1	-0.8	0.5	-0.2
23	11.5	11.2	4.8	6.0	6.8	5.1	-1.0	0.4	-0.2
24	11.6	11.2	4.5	5.8	7.2	5.4	-1.0	0.5	-0.1
25	12.0	11.0	4.3	5.5	7.7	5.5	-1.1	0.5	-0.1
26	12.6	11.0	4.1	5.3	8.5	5.7	-1.3	0.4	-0.1
27	13.0	11.1	3.9	5.1	9.1	6.1	-1.3	0.5	-0.1
28	13.2	11.1	3.8	4.9	9.4	6.2	-1.1	0.5	-0.0
29	13.6	10.8	3.8	4.7	9.8	6.1	-1.2	0.5	-0.0
30	14.3	11.1	3.8	4.7	10.4	6.5	-1.3	0.6	-0.1
31	14.5	11.4	3.9	4.6	10.6	6.8	-1.2	0.7	0.0
32	15.2	11.8	4.0	4.6	11.3	7.2	-1.3	0.8	-0.0
33	15.7	11.9	4.0	4.6	11.7	7.3	-1.5	0.7	-0.1
34	15.6	12.2	4.2	4.7	11.4	7.5	-1.6	0.9	-0.1
35	16.8	12.6	4.4	4.8	12.4	7.8	-1.4	0.7	-0.2
36	16.6	13.2	4.7	5.2	11.9	8.0	-1.6	0.8	-0.1
37	15.8	14.3	5.0	5.4	10.8	8.9	-1.3	1.1	-0.1
38	16.7	14.3	5.2	5.8	11.5	8.6	-1.8	0.9	-0.3
39	16.2	15.3	5.5	6.3	10.7	9.0	-1.6	0.7	-0.3
40+	16.2	16.7	6.0	7.0	10.3	9.7	-1.8	1.1	-0.6

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 27**  
 Predicted Rates of LBW and changes in the Black-White LBW gap by maternal age for White and Black mothers, SC

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	15.4	13.9	9.6	8.9	5.8	5.0	0.8	-0.2	0.0
16	14.3	13.2	9.0	8.4	5.3	4.8	0.4	0.2	0.0
17	13.7	13.2	8.6	7.9	5.2	5.3	0.4	0.4	0.1
18	13.3	13.2	7.8	7.7	5.5	5.5	0.3	0.3	0.2
19	12.6	12.9	7.0	7.0	5.5	5.8	0.2	0.5	0.2
20	12.1	12.8	6.5	6.7	5.7	6.1	0.1	0.5	0.1
21	11.6	12.5	6.0	6.4	5.6	6.0	0.0	0.4	0.1
22	11.1	12.1	5.6	6.1	5.5	6.1	-0.1	0.5	0.1
23	10.8	11.9	5.2	5.8	5.6	6.1	-0.1	0.5	-0.0
24	10.7	11.7	4.8	5.6	5.8	6.1	-0.2	0.6	-0.1
25	10.4	11.7	4.7	5.4	5.7	6.3	-0.2	0.7	-0.2
26	10.4	11.5	4.5	5.3	5.9	6.3	-0.2	0.7	-0.2
27	10.6	11.8	4.3	5.1	6.2	6.8	-0.2	0.9	-0.2
28	10.7	11.7	4.3	4.9	6.5	6.8	-0.3	0.8	-0.3
29	10.8	11.9	4.2	4.9	6.5	7.1	-0.3	1.0	-0.2
30	11.0	12.1	4.3	4.8	6.7	7.3	-0.4	1.0	-0.2
31	11.4	12.4	4.3	4.8	7.1	7.7	-0.5	1.2	-0.3
32	11.6	12.7	4.5	4.7	7.0	8.0	-0.5	1.2	-0.3
33	12.2	13.1	4.8	4.9	7.4	8.2	-0.8	1.3	-0.5
34	12.6	13.8	4.9	5.1	7.8	8.7	-0.7	1.4	-0.7
35	12.8	14.6	5.1	5.2	7.7	9.4	-0.7	1.9	-0.5
36	13.2	15.1	5.7	5.5	7.6	9.6	-1.0	2.0	-0.6
37	13.9	15.8	6.0	5.9	7.9	9.9	-0.9	1.8	-1.2
38	15.0	16.3	6.3	6.0	8.7	10.3	-1.4	2.1	-1.0
39	15.7	17.8	7.4	6.4	8.3	11.4	-1.2	2.4	-1.3
40+	16.1	18.1	7.4	7.4	8.7	10.6	-1.3	1.5	-2.0

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 28**  
 Predicted Rates of LBW and changes in the Black-White LBW gap by maternal age for White and Black mothers, TN

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	15.6	14.6	10.5	9.0	5.2	5.6	0.4	0.1	0.0
16	14.7	14.0	9.6	8.8	5.1	5.2	0.5	0.0	0.0
17	13.9	13.2	8.8	8.4	5.1	4.9	0.4	-0.0	0.1
18	13.2	12.9	8.0	8.1	5.2	4.8	0.1	-0.1	0.1
19	12.5	12.4	7.2	7.6	5.3	4.8	0.0	0.1	0.1
20	12.1	12.2	6.7	7.3	5.4	4.9	-0.0	0.2	0.1
21	11.9	12.0	6.3	7.1	5.6	4.9	-0.2	0.1	0.1
22	11.6	11.7	5.8	6.8	5.7	4.9	-0.3	0.1	0.0
23	11.4	11.6	5.5	6.6	5.9	5.0	-0.3	0.1	0.0
24	11.6	11.5	5.1	6.4	6.5	5.1	-0.5	0.2	-0.0
25	11.5	11.6	5.0	6.2	6.6	5.4	-0.4	0.2	-0.1
26	11.7	11.6	4.8	5.9	6.9	5.7	-0.4	0.3	-0.1
27	11.9	11.7	4.7	5.7	7.2	6.1	-0.4	0.4	-0.1
28	12.2	11.7	4.7	5.5	7.5	6.3	-0.4	0.4	-0.0
29	12.7	12.0	4.7	5.3	8.0	6.8	-0.5	0.4	-0.0
30	12.9	12.2	4.7	5.2	8.2	7.0	-0.4	0.5	-0.0
31	13.5	12.6	4.8	5.3	8.7	7.3	-0.6	0.7	-0.0
32	14.0	13.1	4.9	5.3	9.1	7.8	-0.7	0.8	-0.1
33	14.9	13.6	5.1	5.4	9.8	8.2	-0.8	0.9	-0.1
34	15.8	14.0	5.3	5.5	10.4	8.5	-1.0	0.8	-0.1
35	15.9	14.7	5.6	5.9	10.3	8.8	-1.0	1.2	-0.2
36	16.3	15.0	6.1	6.2	10.2	8.9	-0.8	0.9	-0.3
37	17.3	16.1	6.0	6.5	11.3	9.6	-1.1	1.3	-0.5
38	17.0	16.9	6.5	6.8	10.5	10.1	-0.8	1.6	-0.7
39	18.6	17.1	6.7	7.5	11.8	9.7	-2.2	1.5	-0.9
40+	17.9	18.5	7.0	8.0	11.0	10.5	-1.4	1.4	-0.9

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 29**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, TX

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	13.4	13.7	8.1	8.7	5.3	5.1	0.3	0.2	0.0
16	12.8	13.6	7.6	8.3	5.2	5.3	0.3	0.2	0.0
17	12.3	13.2	7.0	7.7	5.3	5.5	0.3	0.2	0.0
18	11.7	13.0	6.5	7.4	5.2	5.6	0.2	0.2	0.0
19	11.1	12.4	6.0	6.8	5.2	5.6	0.1	0.2	0.0
20	10.8	12.1	5.5	6.4	5.2	5.7	0.1	0.2	-0.0
21	10.4	11.9	5.1	6.1	5.2	5.8	0.1	0.3	-0.0
22	10.2	11.7	4.8	5.8	5.4	5.9	-0.0	0.3	-0.0
23	10.0	11.6	4.5	5.5	5.5	6.1	-0.1	0.4	-0.1
24	9.9	11.4	4.2	5.3	5.7	6.1	-0.1	0.3	-0.1
25	10.0	11.2	4.1	5.0	5.9	6.2	-0.2	0.4	-0.1
26	9.9	11.3	3.9	4.9	6.0	6.4	-0.1	0.3	-0.0
27	10.0	11.1	3.8	4.7	6.2	6.4	-0.2	0.3	-0.0
28	10.3	11.2	3.8	4.5	6.5	6.6	-0.2	0.5	-0.1
29	10.5	11.3	3.7	4.4	6.8	6.9	-0.2	0.6	-0.1
30	10.8	11.4	3.7	4.4	7.1	6.9	-0.3	0.5	-0.1
31	11.1	11.6	3.8	4.4	7.3	7.1	-0.3	0.6	-0.1
32	11.4	11.9	3.9	4.5	7.5	7.5	-0.4	0.8	-0.1
33	12.1	12.0	4.0	4.6	8.1	7.4	-0.5	0.7	-0.3
34	12.7	12.4	4.2	4.8	8.6	7.7	-0.7	0.9	-0.3
35	13.1	12.8	4.4	5.1	8.6	7.8	-0.6	0.9	-0.3
36	13.3	13.2	4.7	5.3	8.6	7.8	-0.7	0.8	-0.3
37	14.4	14.1	5.0	5.8	9.4	8.3	-0.8	0.8	-0.5
38	15.1	14.9	5.3	6.1	9.8	8.8	-0.8	1.1	-0.6
39	15.6	15.4	5.9	6.7	9.7	8.7	-0.8	1.3	-0.9
40+	16.5	16.6	6.2	7.5	10.3	9.1	-1.0	1.0	-1.1

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 30**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, VA

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	14.4	12.8	8.5	6.2	6.0	6.5	0.4	0.1	0.0
16	13.4	12.3	8.1	6.6	5.3	5.7	0.4	0.3	-0.0
17	12.5	12.1	7.5	6.5	5.0	5.7	0.3	0.1	0.0
18	11.7	11.9	6.9	6.5	4.8	5.4	0.2	0.1	0.0
19	10.9	11.6	6.3	6.3	4.6	5.3	0.1	0.2	0.0
20	10.5	11.4	5.8	6.1	4.6	5.2	0.1	0.1	0.0
21	10.1	11.2	5.5	6.0	4.6	5.2	-0.0	0.1	0.0
22	9.9	11.1	5.2	5.8	4.7	5.3	-0.1	0.1	-0.0
23	9.8	11.1	4.9	5.6	4.9	5.5	-0.2	0.2	-0.0
24	9.9	10.9	4.7	5.4	5.3	5.5	-0.3	0.2	-0.1
25	9.8	10.9	4.4	5.1	5.4	5.7	-0.3	0.1	-0.1
26	10.0	10.8	4.2	5.0	5.7	5.9	-0.3	0.1	-0.1
27	10.0	10.9	4.1	4.7	5.9	6.2	-0.3	0.2	-0.1
28	10.4	10.8	4.0	4.5	6.4	6.3	-0.3	0.2	-0.1
29	10.7	10.7	4.0	4.3	6.7	6.4	-0.5	0.2	-0.1
30	10.8	11.0	3.9	4.3	6.9	6.7	-0.4	0.2	-0.2
31	11.2	11.0	3.9	4.2	7.3	6.8	-0.5	0.4	-0.3
32	11.6	11.3	3.9	4.1	7.6	7.1	-0.6	0.4	-0.2
33	12.1	11.3	4.0	4.2	8.1	7.2	-0.6	0.3	-0.2
34	12.5	11.6	4.1	4.3	8.4	7.3	-0.6	0.3	-0.3
35	13.0	11.9	4.3	4.4	8.7	7.5	-0.7	0.3	-0.3
36	13.4	12.5	4.4	4.7	9.0	7.8	-0.7	0.4	-0.5
37	13.7	12.9	4.7	5.0	8.9	7.9	-0.7	0.3	-0.3
38	14.5	13.5	4.9	5.4	9.7	8.1	-1.0	0.2	-0.9
39	14.0	14.4	5.1	6.1	8.9	8.3	-0.6	0.3	-0.7
40+	14.5	15.1	5.5	6.8	9.0	8.3	-0.7	0.0	-1.1

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

**Table 31**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, WA

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	8.8	10.6	8.0	6.8	0.8	3.8	0.5	-0.4	0.0
16	8.6	10.9	7.3	6.7	1.2	4.1	0.5	-0.0	-0.0
17	8.7	10.7	6.5	6.5	2.3	4.2	0.2	0.1	0.1
18	8.8	11.8	5.8	6.2	3.0	5.6	0.1	0.4	-0.0
19	8.7	10.8	5.1	5.8	3.6	5.0	0.1	-0.1	-0.0
20	8.1	11.1	4.6	5.5	3.5	5.6	0.1	0.4	0.0
21	8.2	10.4	4.1	5.3	4.1	5.2	-0.2	0.1	-0.1
22	8.2	10.6	3.9	4.9	4.3	5.8	0.0	0.7	-0.0
23	8.2	10.4	3.7	4.6	4.5	5.8	-0.2	0.8	-0.0
24	8.3	9.8	3.5	4.5	4.8	5.3	-0.1	0.5	0.1
25	8.8	9.4	3.4	4.4	5.4	5.0	-0.3	0.3	-0.1
26	8.7	9.6	3.2	4.2	5.5	5.4	-0.0	0.4	-0.1
27	9.1	9.6	3.2	4.1	5.9	5.5	-0.1	0.6	-0.1
28	9.2	9.8	3.2	4.0	6.0	5.8	-0.3	0.7	-0.0
29	9.2	9.9	3.2	3.9	6.0	6.0	-0.3	1.1	-0.1
30	9.5	9.7	3.3	3.9	6.3	5.8	0.1	0.6	-0.1
31	10.5	9.3	3.3	3.9	7.2	5.4	-0.5	0.4	0.0
32	11.1	10.5	3.4	4.0	7.7	6.5	-0.4	1.0	-0.1
33	11.4	9.6	3.5	4.0	7.9	5.6	-0.3	0.4	-0.2
34	12.8	11.1	3.7	4.0	9.1	7.0	-0.7	1.2	0.1
35	11.8	12.0	3.8	4.1	8.0	7.9	-0.4	2.0	0.0
36	14.7	12.1	4.0	4.4	10.7	7.6	-0.3	-0.0	-0.2
37	14.1	12.1	4.0	4.8	10.0	7.3	-1.2	0.6	0.5
38	14.3	14.7	4.3	4.9	10.0	9.8	-0.7	3.6	-0.3
39	16.3	13.9	4.4	5.3	11.9	8.6	-1.0	1.2	-0.1
40+	16.5	15.9	4.9	5.6	11.6	10.3	-0.2	1.7	-0.1

**Table 32**  
 Predicted Rates of LBW and and changes in the Black-White LBW gap by maternal age for White and Black mothers, WI

Age	Black	Black	White	White	BW Gap	BW Gap	Smoking	Hypertension	Education
	1991-94	2014-17	1991-94	2014-17	1991-94	2014-17	Contribution	Contribution	Contribution
15	14.9	17.1	9.4	9.4	5.5	7.7	0.7	0.9	0.0
16	14.0	14.4	8.4	9.0	5.5	5.4	0.2	0.2	0.0
17	12.5	13.7	7.6	8.1	4.9	5.5	0.4	0.3	0.0
18	11.8	13.2	6.8	7.4	5.0	5.8	0.0	0.8	0.1
19	11.2	12.8	6.0	6.7	5.2	6.1	-0.0	0.6	0.1
20	10.7	12.3	5.5	6.3	5.3	6.0	-0.3	0.5	0.0
21	10.6	11.9	4.9	5.9	5.7	6.0	-0.4	0.5	-0.1
22	10.4	11.5	4.6	5.5	5.8	6.0	-0.6	0.4	-0.1
23	10.4	11.7	4.2	5.3	6.3	6.4	-0.7	0.5	-0.1
24	10.9	11.5	3.8	4.9	7.1	6.6	-0.9	0.5	-0.2
25	10.9	11.5	3.6	4.7	7.3	6.8	-0.8	0.4	-0.2
26	11.3	12.0	3.4	4.5	7.8	7.5	-0.9	0.6	-0.1
27	11.9	12.1	3.3	4.3	8.6	7.8	-1.1	0.6	-0.1
28	12.2	12.6	3.3	4.2	8.9	8.4	-0.8	0.9	-0.0
29	13.3	12.9	3.3	4.1	10.0	8.7	-1.0	1.0	-0.2
30	14.8	12.6	3.3	4.1	11.5	8.4	-1.6	0.5	-0.3
31	15.1	14.0	3.4	4.2	11.7	9.8	-1.2	1.3	-0.2
32	16.0	14.3	3.5	4.1	12.5	10.2	-1.5	1.4	-0.3
33	17.1	15.1	3.6	4.2	13.5	10.8	-1.5	1.4	-0.4
34	17.2	16.2	3.8	4.4	13.4	11.8	-1.7	1.6	0.1
35	18.1	15.8	4.0	4.5	14.1	11.3	-2.0	2.0	-0.5
36	18.2	16.9	4.3	4.9	13.9	12.0	-0.9	1.8	-0.2
37	20.5	17.1	4.6	5.1	15.9	12.0	-2.8	1.8	0.0
38	19.1	17.4	4.9	5.3	14.3	12.1	-1.8	2.9	-0.4
39	18.0	17.5	5.1	5.7	12.9	11.8	-0.4	0.9	0.4
40+	20.5	16.7	5.6	5.9	14.8	10.7	-1.7	1.3	-0.7

Note: Data from restricted birth certificate files include singleton births to resident U.S.-born-born women aged 15+ who reported health and educational data.

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