



American  
College  
of Allergy, Asthma  
& Immunology

# USAsthma SUMMIT 2024

## Racial and Ethnic Disparities in Maternal Health: How Asthma Disproportionally Affects African American and Hispanic/Latino Women

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# **Racial and Ethnic Disparities in Maternal Health: How Asthma Disproportionally Affects African American and Hispanic/Latino Women**

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# Disclosures

- Receiving Compensation from the US Asthma Summit for this lecture
- No other disclosures



# Learning Objectives

- Discuss Asthma in Pregnancy
- Discuss Health Disparities in Pregnancy with Asthma by race/ethnicity
- Discuss Asthma Risk Factors In Black and Latino pregnant women with Asthma
- Learn about racial/ethnic disparities in the rate of asthma during pregnancy
- Perinatal and postnatal complications in Latino/African American Women with Asthma
- Bridging the Health Equity Gap- Access to care, environment, air quality, education, increasing workforce diversity, technological advances and Advocacy
- Addressing Advocacy for our pregnant Asthmatic patients at a local and national level
- Breathe4Baby Pregnancy Toolkit
- 2024- Dr. Jill Biden has called this the year of the mother- goal to decrease maternal mortality from all causes including Asthma

# Asthma Prevalence in Latino and African Americans

- Asthma in Pregnancy in the United States
  - CDC: 142,282 pregnant women have asthma on a yearly basis
  - Women ages: 18-49 years (7.2% and 10.4%, respectively).
  - 7.7% of pregnancies were complicated by maternal asthma.
  - Asthma prevalence differed significantly across racial/ethnic groups
    - Black women had the highest prevalence of asthma (10.8%)
    - Whites (7.4%)
    - Hispanics (5.9%)
    - Asian/Pacific Islanders (2.3%)

- Table 1
- Demographic and clinical characteristics for women by race/ethnicity in the Consortium on Safe Labor, (n = 208,899), 2002–2008

Maternal characteristics	White 110,603 (52.9%)	Black 50,284 (24.1%)	Hispanic 38,831 (18.6%)	Asian/PI 9,181 (4.4%)	p-value
<b>Demographic factors</b>					
Asthma diagnosis, n (%)	8,156 (7.4)	5,444 (10.8)	2,288 (5.9)	211 (2.3)	<.0001
Maternal age, mean (SD)	28.5 (5.8)	25.7 (6.4)	26.8 (6.3)	30.0 (5.3)	<.0001
Marital status, n (%)					
Not married	22,707 (20.5)	36,959 (73.5)	18,962 (48.8)	1,306 (14.2)	<.0001
Married	86,036 (77.8)	12,005 (23.9)	18,589 (47.9)	7,740 (84.3)	
Missing	1,860 (1.7)	1,320 (2.6)	1,280 (3.3)	135 (1.5)	
Insurance, n (%)					
Private	82,094 (74.2)	17,106 (34.0)	11,425 (29.4)	6,448 (70.2)	<.0001
Public	20,760 (18.8)	26,705 (53.1)	18,801 (48.4)	1,291 (14.1)	
Other	846 (0.8)	909 (1.8)	709 (1.8)	218 (2.4)	
Missing	6,903 (6.2)	5,564 (11.1)	7,896 (20.3)	1,224 (13.3)	
<b>Clinical factors</b>					
Prepregnancy BMI, kg/m <sup>2</sup> , n (%)					
Underweight, <18.5	4,492 (4.1)	1,209 (2.4)	1,192 (3.1)	625 (6.8)	<.0001
Normal weight, 18.5–<25	44,781 (40.5)	12,421 (24.7)	14,071 (36.2)	3,519 (38.3)	
Overweight, 25–<30	15,497 (14.0)	7,712 (15.3)	7,606 (19.6)	765 (8.3)	
Obese, 30–<35	6,868 (6.2)	4,418 (8.8)	3,384 (8.7)	281 (3.1)	
Severely obese, ≥35	5,071 (4.6)	4,429 (8.8)	1,966 (5.1)	165 (1.8)	
Unknown	33,894 (30.6)	20,095 (40.0)	10,612 (27.3)	3,826 (41.7)	
Smoking during pregnancy, n (%)	8,433 (7.6)	4,058 (8.1)	1,581 (4.1)	138 (1.5)	<.0001
Alcohol during pregnancy, n (%)	2,445 (2.2)	975 (1.9)	404 (1.0)	65 (0.7)	<.0001
Any chronic disease (diabetes, hypertension, thyroid, HIV), n (%)	6,867 (6.2)	3,952 (7.9)	2,136 (5.5)	418 (4.6)	<.0001
Parity, n (%)	44,300 (40.1)	19,386 (38.6)	14,454 (62.8)	4,502 (49.0)	<.0001
Nulliparous					
Cesarean delivery n (%)	22,923 (25.3)	16,006 (31.8)	11,686 (30.1)	2,694 (29.4)	<.0001

# POLL QUESTION

How does maternal asthma impact pregnancy outcomes across different races and ethnicities?

- A) the frequency of obstetric and neonatal complications
- B) Has no impact on obstetric or neonatal complications
- C) Reduces the likelihood of obstetric and neonatal complications
- D) Only affects certain racial or ethnic groups



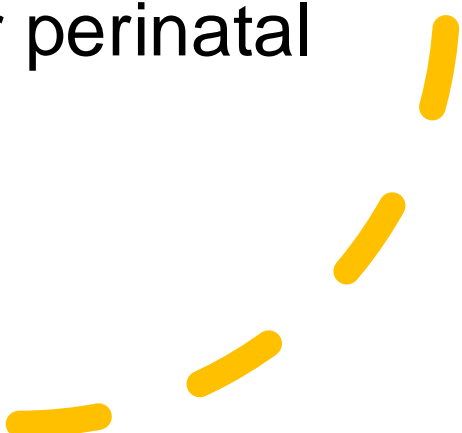
# Disparities In Pregnancy with Asthma by Race/Ethnicity

- Black women appeared to be younger, more frequently unmarried and experienced more prior chronic disease during pregnancy compared with other racial/ethnic groups.
- Obstetric and neonatal complications were generally more frequent among pregnancies complicated by maternal asthma across all race/ethnicities
- Preterm birth was more prevalent among Black and Hispanic mothers and many neonatal complications were higher among Black infants





Disparities In  
Pregnancy with  
Asthma by  
Race/Ethnicity

- Black women have the highest prevalence of asthma during pregnancy, at 10.8%.
  - Black women are more likely to experience asthma exacerbations during pregnancy
  - African American and Latina women are more likely to experience poor perinatal outcomes
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# Asthma Risk Factors in Black and Latino Pregnant Women with Asthma

- Other risk factors for Asthma exacerbations during pregnancy include:
  - Moderate and severe asthma
  - Maternal age
  - Obesity
  - Smoking
  - Depression and anxiety
  - Parity



Racial/Ethnic  
disparities in  
the rate of  
Asthma  
during  
pregnancy

- Potential Determinants of Disparities:
  - Insurance Status
    - Insurance status was the most important of the socioeconomic factors and accounted for most of the racial/ethnic disparity in African Americans and Hispanics
  - Prenatal Care/Utilization
  - Maternal Education
  - Access to Care



# Obstetric/Neonatal Complications in Black and Latina Women with Asthma

	White n = (110,603)	Black n = (50,284) aOR (95% CI)	Hispanic n = (38,831)
<b>Obstetric outcomes</b>			
Preeclampsia	<b>1.28 (1.15, 1.43)</b>	0.91 (0.80, 1.03)	1.03 (0.85, 1.26)
Maternal hemorrhage	<b>1.14 (1.04, 1.23)</b>	1.05 (0.93, 1.18)	1.05 (0.87, 1.26)
<b>Neonatal outcomes</b>			
NICU admission	<b>1.19 (1.11, 1.28)</b>	1.02 (0.95, 1.11)	<b>1.16 (1.02, 1.32)</b>
Apnea	1.06 (0.91, 1.24)	0.85 (0.71, 1.00)	<b>1.32 (1.02, 1.69)</b>
Size for gestational age SGA	<b>1.11 (1.02, 1.20)</b>	1.06 (0.98, 1.15)	<b>1.26 (1.10, 1.44)</b>

• Table 3

• Adjusted odds ratios and 95% confidence intervals for obstetric and neonatal outcomes among women with asthma in the Consortium on Safe Labor within race/ethnicity groups (n = 208,899), 2002–2008<sup>a</sup>

# Black and Latina Pregnant Women with Severe Asthma

- More likely to :
  - Experience Early Labor and Delivery
  - Have High Blood Pressure which can lead to Pre-eclampsia
  - Have Low Birth Weight



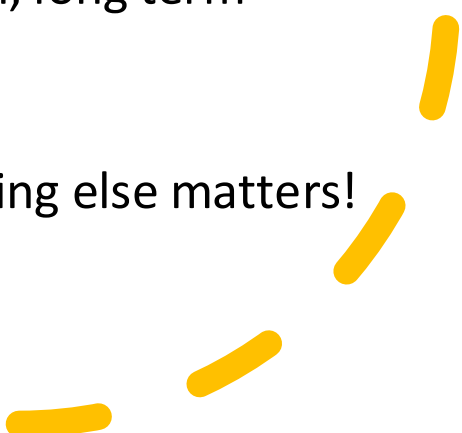
# Asthma Disparities in the US- the Big Picture

- Low-income populations, minorities, and children living in inner cities experience more ED visits, hospitalizations, and deaths due to asthma than the general population.<sup>1</sup>
- The burden of asthma falls disproportionately on non-Hispanic black, American Indian/Alaskan Native and some Hispanic (i.e., Puerto Rican) populations.<sup>2, 3</sup>
- Psychosocial and Socioeconomic Factors-  
More time indoors. Overcrowding and  
Access to care

# Asthma Disparities- ALA 2024 State of the Air and Communities of Color

- Out of the nearly 120 million people who live in areas with unhealthy air quality, a disproportionate number – more than 64 million (54%) – are people of color.
- In fact, people of color were:
  - 64% more likely than white people to live in a county with a failing grade for at least one measure (Ozone, short term particle pollution and long-term particle pollution), and
  - 3.7 times as likely to live in a county with a failing grade for all three measures (short-term particle pollution, long term particle pollution and ozone).

If you have Asthma and you can't breathe- nothing else matters!



# Bridging the Health Equity Gap

- Health disparities (recently defined as a health difference closely linked with social, economic, and/or environmental disadvantage) in asthma continue despite the presence of safe and effective treatment
- These neglected communities lack access to quality primary care and especially have limited access to sub-specialty care like allergy/asthma/immunology care
- Lack of access is due to structural barriers such as inadequate reimbursement from Medicaid programs which limit the number of asthma specialists able and willing to provide care to populations reliant on Medicaid insurance programs



# Bridging the Health Equity Gap

- This also leads to overall health care “deserts” within many communities of color especially when it comes to specialized care, requiring patients to often travel outside of their neighborhoods and communities to seek care
- Despite the existence of two major asthma management guidelines: The Global Initiative for Asthma (GINA)([21](#)) and The National Asthma Education and Prevention Program (NAEPP)([22](#)) for over 30 years, asthma morbidity disparities remains high
- New therapeutic advances, such as biologics offer the potential for even greater effectiveness in the treatment of severe asthma. However, concern has been raised of the lack of inclusion of Black and Hispanic participants in the clinical trials of effectiveness of these biologic agents

# Bridging the Health Equity Gap

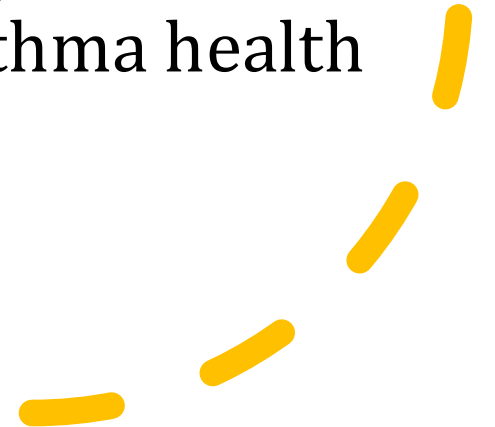
- Another facet of tackling disparities is to expand our vision of how and where care can be delivered. The school setting has been found to be an alternate location for the delivery of asthma care and education.
- Mobile asthma clinics staffed by knowledgeable clinicians providing care at the school have reduced asthma morbidity among both African American and Hispanic children
- Environmental factors such as allergens, molds, and indoor/outdoor pollution are important contributors to asthma morbidity. Decreasing exposure to harmful environmental elements can decrease the amount of asthma medications required to control asthma morbidity. The substandard housing present in neglected areas adds to the challenge of an environmental intervention

# Bridging the Health Equity Gap

- Environmental interventions are generally focused on the patient's home. We must do more to clean up the air quality in communities of color.
- Technological advances have had some success in improving the care of Black, Hispanic, and other underserved communities, where high use of mobile phones offer an opportunity for innovative interventions. These include telehealth visits.
- Recognize resources for improving diversity and inclusivity of the workforce and the patient pool. Increasing the number of Black and Latinos in the medical workforce. #representationmatters

# Bridging the Health Equity Gap- Advocacy

- Work with state and national medical associations to ensure programs such as Medicaid offer access to services, medications and technologies that have been proven to improve asthma outcomes.
- Advocacy efforts to address wealth inequity, environmental injustice, food insecurity, educational inequity, and overall structural drivers of asthma health disparities



# Breathe4Baby

- Our proposal is a program that includes an action plan and validated pregnancy ACT for pregnant asthmatic patients that can be used to coordinate care between healthcare providers including allergists, pulmonologists, and obstetricians caring for pregnant asthmatics.
- This resource will create a foundation of support that would enhance multidirectional communication and promote better care for pregnant asthmatic women.
- We envision a collaborative effort between stakeholders such as the AAAAI, AAFA, ATS, ACOG, Asthma Foundation and MFMU to promote its adoption across specialties.
- Breathe 4 Baby: A Multidisciplinary Educational Program on Managing Asthma during Pregnancy and Lactation
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## PREGNANCY AND LACTATION ASTHMA ACTION PLAN

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Emergency Contact: \_\_\_\_\_ Relationship: \_\_\_\_\_  
 Cell phone: \_\_\_\_\_ Work phone: \_\_\_\_\_  
 Health Care Provider: \_\_\_\_\_ Phone number: \_\_\_\_\_  
 Frequency of asthma check-up visits: \_\_\_\_\_ Personal Best Peak Flow: \_\_\_\_\_  
 Name of asthma (asthma, if any): \_\_\_\_\_ Date of ultrasound for growth: \_\_\_\_\_  
 Biophysical profile recommended: Y \_\_\_\_\_ N \_\_\_\_\_ Date of last COVID-19/flu vaccine: \_\_\_\_\_

### GREEN/GO ZONE: Doing Well with all of these

- ✓ No coughing, wheezing, chest tightness, or difficulty breathing
- ✓ Can work, play, exercise, perform usual activities without symptoms
- ✓ Good fetal movements



Take these medicines for control and maintenance:

Medicine	How much to take	When and how often

### YELLOW/WARNING ZONE: Caution/Getting Worse if you have any of these

- ✓ Coughing, wheezing, chest tightness / pain, or difficulty breathing
- ✓ Symptoms with daily activities, work, play, and exercise
- ✓ Waking up at night with symptoms
- ✓ Reduced fetal movements



CONTINUE your Green Zone medicines PLUS take these quick relief/rescue medicines:

Medicine	How much to take	When and how often

**Call your doctor if you have been in the Yellow Zone for more than 24 hours.  
 Also call your OB immediately if there are reduced fetal movements.**

### RED/DANGER ZONE: Alert if you have any of these!

- ✓ Difficulty breathing, coughing, wheezing not helped with medications
- ✓ Trouble walking or talking due to asthma symptoms
- ✓ Not responding to quick relief medication
- ✓ Headache, vomiting
- ✓ Vaginal bleeding



### FOR EXTREME TROUBLE BREATHING/SHORTNESS OF BREATH GET IMMEDIATE HELP!

Take these quick relief/rescue medicines:

Medicine	How much to take	When and how often

**GO to the hospital/emergency department or CALL for an ambulance NOW!**

### PREGNANCY ASTHMA CONTROL TEST

1. In the past 4 weeks, how much of the time did your asthma keep you from getting as much done at work or at home?					Score
All of the time	Most of the time	Some of the time	A little of the time	None of the time	
1	2	3	4	5	
2. During the past 4 weeks, how often did you have shortness of breath due to your asthma?					
More than once a day	Once a day	3 to 6 times a week	Once or twice a week	Not at all	
1	2	3	4	5	
3. During the past 4 weeks, how often did your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?					
4 or more nights a week	2 or 3 nights a week	Once a week	Once or twice	Not at all	
1	2	3	4	5	
4. During the past 4 weeks, how often have you used your rescue inhaler or nebulizer medication (such as albuterol)?					
3 or more times per day	1 to 2 times per day	2 to 3 times per week	Once or twice	Not at all	
1	2	3	4	5	
5. How would you rate your asthma control during the past 4 weeks?					
Not controlled at all	Poorly controlled	Somewhat controlled	Well controlled	Completely controlled	
1	2	3	4	5	
Total Score					

*If the sum of your individual scores is 19 or less, your asthma may not be controlled as well as it could be. Talk with your doctor.*



## Pregnant with asthma? Know your asthma zones.

### GO ZONE Doing Well:



No symptoms



Good fetal movements

### CAUTION ZONE Getting worse if you have any of these:



Coughing, wheezing,  
or difficulty breathing



Waking up at night  
with symptoms



Chest tightness or pain



Reduced fetal  
movements

### DANGER ZONE Alert your doctor if you have any of these:



Difficulty breathing,  
coughing, wheezing,  
and chest tightness or  
pain are getting worse



Headache



Trouble walking or talking



Vomiting



Medicine is not working



Vaginal bleeding

**Knowing your asthma zones can improve  
the health of you and your baby!**




# Advocacy and Breathe4Baby

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- Goal is to reach more underserved populations and also to disseminate the Breathe4Baby asthma toolkit on a local and national level.
- First Lady Dr. Jill Biden has called 2024 - “the year of the mother” and is concentrating her efforts on increasing women’s health research.
- HRSA and the White House have made a blueprint with a goal to improve the maternal health crisis: <https://www.hrsa.gov/maternal-health>
- Next Steps: to align the Breathe4Baby Asthma toolkit on national and policy level to improve the asthma outcomes of our pregnant mothers in the US. Also to get Dr. Jill Biden’s task force to adopt the Breathe4Baby toolkit!
- Met on 2/20/24 with Dr. Diana Ramos, the California Surgeon General, to help support the toolkit and advance it on a national level.



# Breathe4Baby Link

- <https://www.aaaai.org/practice-management/practice-tools/asthma-and-pregnancy-toolkit>
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# Conclusions

- Latino and African American Pregnant Women with Asthma have higher risk of pre-natal and post-natal complications
- Bridging the Health Equity Gap includes access to care, education, environmental justice, improving quality of air, using technology to reach these communities, more access to subspecialists in the community, increasing workforce diversity to meet the needs of the growing communities and advocacy.
- Advocacy can involve efforts at the local and national level.
- Breathe4baby is a step forward at addressing and individualizing asthma care in pregnancy- taking into consideration mommy and baby
- Hoping that our efforts will contribute to decreasing maternal mortality
- The year of the Mother- 2024!