



QUICK FACTS: DISPARITIES IN ASTHMA

Asthma Coalition of Los Angeles County

Prepared by John Huang, M.D. (jchuang@mednet.ucla.edu)

Prevalence & Morbidity

- LA County Asthma Prevalence, age 0-17: Latino 6.4%, White 8.1%, **African American 18.4%**, API 6.7%.¹
- LA County Asthma Hospitalizations (per 10,000 residents), all ages: **Latino 11.3**, White 8.0, **African American 29.0**, API 6.8.²
- LA County Asthma ED Visits (per 10,000 residents), all ages: **Latino 38.4**, White 30.9, **African American 122.7**, API 16.3.²

Clinical

- LA County Uninsurance, all ages: Latino 24.2%, White 7.2%, African American 11.8%, API 14.9%.³
- In Los Angeles, African Americans are 2 times and Latinos 3 times more likely than whites to have difficulty accessing necessary medical care. (LACHS 2007)
- Parents of Black and Hispanic children worry more about their child's asthma but have lower expectations for symptom control and functionality, more competing priorities, and more concerns about medications.⁴
- Blacks and Hispanics have worse medication compliance even when controlling for insurance.⁵
- Blacks are more likely to have asthma severity underestimated by treating physicians.⁶
- Nationwide, Blacks and Hispanics are twice as likely as Whites to be using beta-agonists daily, while 1/3 less likely to be on any controller medications.⁷
- Hispanic children are less likely to receive an asthma action plan upon discharge from an asthma hospitalization.⁸

1 LA County Health Survey 2007.

2 California Office of Statewide Planning and development (OSHPD) Patient Discharge Database 2006.

3 California Health Interview Survey 2007.

4 Wu AC, Smit L, Bokhour B, et al. "Racial/ethnic variation in parent perceptions of asthma." *Ambulatory Pediatrics* 2008; 8:89-97.

5 Lieu TA, Lozano P, Finkelstein JA, et al. "Racial/ethnic variation in asthma status and management practices among children in managed medicaid." *Pediatrics* 2002; 109:857-865.

6 Okelo SO, Wu AW, Merriman B, et al. "Are physician estimates of asthma severity less accurate in black than in white patients?" *J Gen Intern Med* 2007; 22:976-981.

7 Crocker D, Brown C, Moolenaar R, et al. "Racial and Ethnic Disparities in Asthma Medication Usage and Health-Care Utilization. Data from the National Asthma Survey." *Chest* 2009. June 30, epub ahead of print.

8 Chandra D, Clark S, Camargo CA. "Race/Ethnicity differences in the inpatient management of acute asthma in the United States." *Chest* 2009. 135(6):1527-34.

Schools

- Estimated number of LAUSD students with asthma: 63,000.⁹
- Asthma is the leading cause of school absenteeism from a chronic disease.⁹
- Schools with higher rates of leaks, mold, and pest infestations have higher rates of asthma.¹⁰
- School-based asthma education and outreach programs are known to reduce asthma symptoms and complications in participants,¹¹ and have been shown to be cost-effective.¹²
- LAUSD has a multifaceted Asthma Program, including education, case management, referrals to medical care, which has demonstrated improvement in asthma outcomes through various programs.⁹
- Childcare centers are also important. The highest rate of ED visits for asthma in LA County is in the 0-4 yr old age group,² and 43% of LA children age 0-5 spend significant time in childcare centers.¹

Outdoor/Environment

- Ozone, Nitrogen dioxide, and particulate matter are known causes of asthma and asthma exacerbations.
- LA children living in communities with higher NO₂ levels have 10% slower lung growth.
- NO₂ and diesel exhaust particles are associated with increased asthma symptoms.
- School absence rates increase when ozone levels increase.
- Children with asthma experience more bronchitis and persistent phlegm when living in communities with high levels of NO₂ and PM_{2.5} levels.¹³
- Proximity to heavy traffic correlates with hospitalizations.¹⁴

Indoor/Healthy Homes

- Indoor allergens levels are higher in low-income urban households, especially when multiple families live together.
- Latinos and blacks are also more likely to develop allergic reactions to certain indoor allergens than are whites.
- The prevalence of smoking, an important trigger of asthma symptoms, is inversely correlated to education and income.¹⁵
- Healthy home interventions are known to improve asthma outcomes.¹⁶

A Few Other Considerations

- Genetic factors, including reactivity to environmental pollutants, contribute to poorer asthma outcomes among certain ethnic groups.
- Obesity worsens asthma symptoms, and there are higher rates of obesity among blacks and Hispanics.
- There are higher rates of anxiety/depression among low-income individuals, and this affects asthma symptoms as well as medication adherence.
- Exposure to stress and violence, single parent home, increase risk of asthma morbidity
- Lack of collective efficacy in low income neighborhoods contributes to worse asthma severity.

9 LAUSD District Nursing Asthma Program. <http://laschoolboard.org/files/4.%20Asthma%20Program%20Overview.pdf>.

10 Graham T, Zotter J, Camacho M. "Who's Sick at School: Linking Poor School Conditions and Health Disparities for Boston's Children." *New Solut.* 2009;19(3):355-64.

11 Li P, Guttman A. "Recent Innovations to improve asthma outcomes in vulnerable children." *Curr Opin in Pediatrics.* 2009, Sept 9. Epub ahead of print.

12 Atherly A, Nurmagambetov T, Williams S, et al. "An economic evaluation of the school-based "power breathing" asthma program." *J Asthma.* 2009, 46(6): 596-9.

13 Kunzli N, McConnell R, Bates D. "Breathless in Los Angeles: The Exhausting Search for Clean Air." *Am J Public Health.* 2003, 93(9):1494-9.

14 Chang J, Delfino RJ, Gillen D. "Repeated respiratory hospital encounters among children with asthma and residential proximity to traffic." *Occup Environ Med.* 2009; 66(2): 90-8.

15 Forno E, Celedon JC. "Asthma and ethnic minorities: socioeconomic status and beyond." *Curr Opin All and Clin Imm.* 2009, 9:154-160.

16 Johnson L, Ciaccio C, Barnes CS, et al. "Low-cost interventions improve indoor air quality and children's health." *Allergy Asthma Proc.* 2009; 30(4): 377-85.