



Asthma and chronic obstructive pulmonary disease in nine Chicago community areas

HEALTH SNAPSHOT NO.3

Nazia S. Saiyed, Helen Margellos-Anast, Bijou R. Hunt, and Jana L. Hirschtick

Asthma and chronic obstructive pulmonary disease (COPD) are conditions characterized by chronic airway inflammation and obstruction to the lungs.¹⁻³ In asthma, which usually begins in childhood, this airway obstruction is reversible, whereas in COPD, which usually begins in adulthood and primarily afflicts smokers, this airway obstruction is often irreversible.¹⁻⁴ Although only a small percent of American adults have asthma and/or COPD,^{5,6} these diseases exert a heavy burden on our society through increased emergency department visits and hospitalizations, reduced productivity due to missed school or work, and increased disability and premature death.^{1,4} This health snapshot presents adult asthma and COPD findings from the *Sinai Community Health Survey 2.0*, a community-driven, representative survey of nine communities in Chicago.

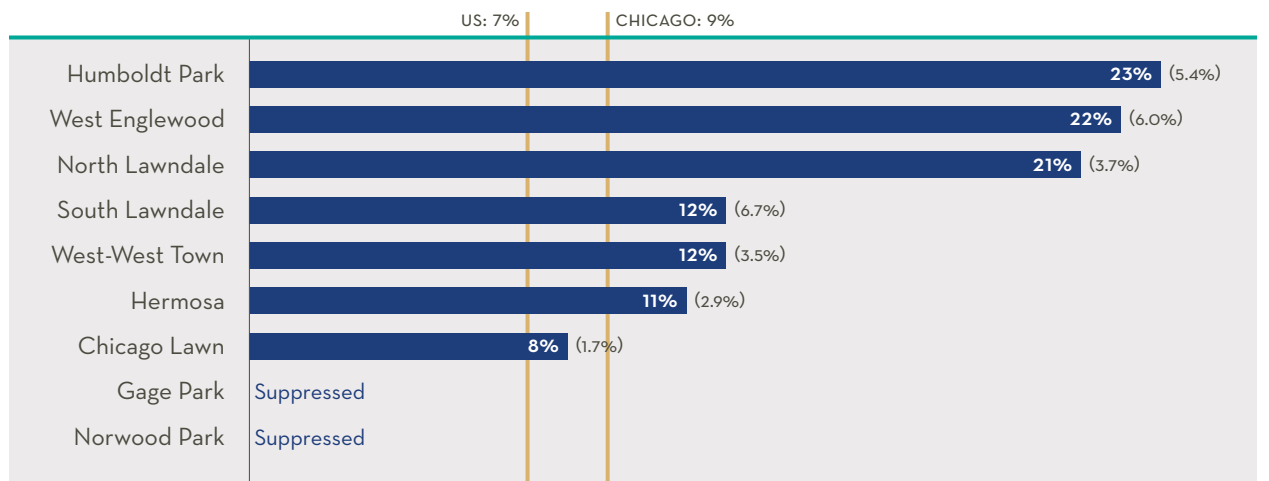
WHICH COMMUNITIES ARE MOST AFFECTED?

- In Humboldt Park, West Englewood, and North Lawndale, more than one in five adults had asthma.
- In West Englewood and Humboldt Park, about one in three adults had COPD.

WHO IS MOST AFFECTED?

- Among females, non-Hispanic Black females and females of Puerto Rican origin had the highest prevalence of asthma (24% and 30%, respectively).
- Non-Hispanic Black males had an asthma prevalence that was at least three times greater than males in other race/ethnic groups.
- Over one in three non-Hispanic Black males had COPD.

FIGURE 1: Prevalence of current asthma by community area

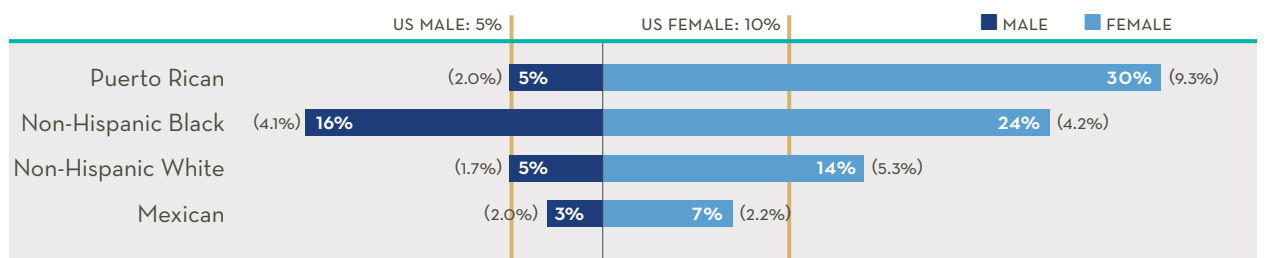


Sampled West Town community area west of Western Avenue only
 US DATA SOURCE: National Health Interview Survey, 2014
 CHICAGO DATA SOURCE: Healthy Chicago Survey, 2014

PREVALENCE (STANDARD ERROR)

- The prevalence of asthma ranged from a high of 23% in Humboldt Park to a low of 8% in Chicago Lawn.
- In Humboldt Park, West Englewood, and North Lawndale, over one in five adults had asthma.

FIGURE 2: Prevalence of current asthma by race/ethnicity and sex

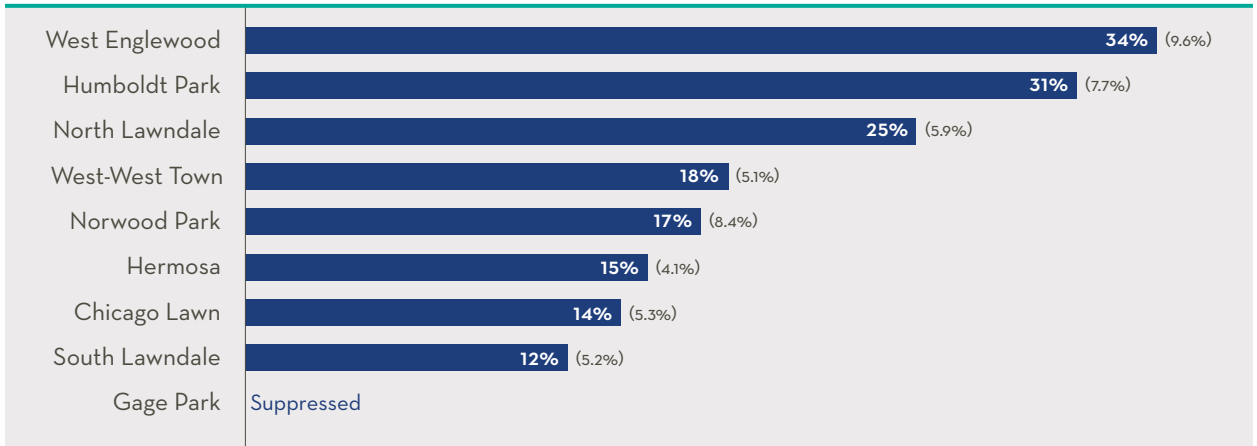


US DATA SOURCE: National Health Interview Survey, 2014
 Rao-Scott Chi-Square p-value = 0.0041 (males); p = 0.0004 (females)

PREVALENCE (STANDARD ERROR)

- There was a statistically significant difference in asthma prevalence by race/ethnic group for females, which was highest for females of Puerto Rican origin (30%) and lowest for females of Mexican origin (7%).
- There was also a statistically significant difference in asthma prevalence by race/ethnic group for males, which was highest for non-Hispanic Black males (16%) and lowest for males of Mexican origin (3%).

FIGURE 3: Prevalence of screened or diagnosed chronic obstructive pulmonary disease by community area

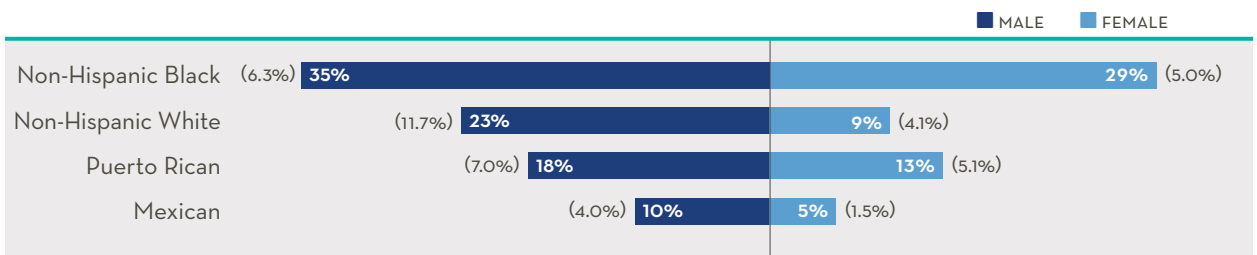


Sampled West Town community area west of Western Avenue only
 Restricted to adults 35 years of age and older
 No national comparison data available

PREVALENCE (STANDARD ERROR)

- The prevalence of screened or diagnosed COPD ranged from a high of 34% in West Englewood to a low of 12% in South Lawndale.
- In West Englewood, Humboldt Park, and North Lawndale, at least one in four residents had screened or diagnosed COPD.

FIGURE 4: Prevalence of screened or diagnosed chronic obstructive pulmonary disease by race/ethnicity and sex



Restricted to adults 35 years of age and older
 No national comparison data available
 Rao-Scott Chi-Square p-value = 0.0555 (males); p < 0.0001 (females)

PREVALENCE (STANDARD ERROR)

- There was a statistically significant difference in the prevalence of screened or diagnosed COPD by race/ethnic group for females, which was highest for non-Hispanic Black females (29%) and lowest for females of Mexican origin (5%).
- Among males, the prevalence of screened or diagnosed COPD was highest for non-Hispanic Black males (35%) and lowest for males of Mexican origin (10%). These differences were not statistically significant.

ABOUT THE SURVEY

Sinai Urban Health Institute (SUHI) is a unique, nationally-recognized research center on the west side of Chicago. Our mission is to achieve health equity among communities through excellence and innovation in data-driven research, interventions, evaluation, and collaboration. SUHI is a proud member of Sinai Health System. For more information about SUHI, visit www.SUHChicago.org.

SUHI designed and conducted the *Sinai Community Health Survey 2.0* in partnership with our Community Advisory Committee and The University of Illinois at Chicago Survey Research Laboratory (SRL). SRL administered surveys face-to-face in both English and Spanish to randomly selected households from each of the nine surveyed communities. Interviewers randomly selected up to two adults (18 and over) per household. Data collection took place between March 2015 and September 2016 with a final sample size of 1,543 adults. Survey results are representative at the community area level for all communities with the exception of West Town, which was sampled west of Western Avenue only. More information about the survey is available at www.SinaiSurvey.org.

DEFINITIONS

Current asthma was defined as: (1) having ever been told by a doctor or other health professional that you had asthma, and (2) still having asthma.

Screened or diagnosed COPD was defined as (1) having ever been told by a doctor, nurse, or other health professional that you had chronic obstructive pulmonary disease or COPD, emphysema, or chronic bronchitis, or (2) if first criterion not met, scoring at least five out of ten on a five-item COPD population screener.⁷ Respondents with up to one missing scale item were included if they scored at least five on the COPD population screener.

METHODS

We used sampling weights to compute statistical estimates to ensure (1) the estimates accounted for the differential probability of the selection of respondents; and (2) the demographic profile of survey respondents matched the community area demographic profiles from the 2010–2014 American Community Survey. The Rao-Scott Chi-Square test was used to test for statistical differences by race/ethnic group and sex. Findings were suppressed when the number of observations was less than five.

REFERENCES

1. Asthma facts: CDC's National Asthma Control Program Grantees. Centers for Disease Control and Prevention. http://www.cdc.gov/asthma/pdfs/asthma_facts_program_grantees.pdf. Accessed June 16, 2016.
2. Postma DS, Rabe KF. The Asthma-COPD Overlap Syndrome. *New Eng J Med*. 2015; 373(13): 1241-1249.
3. Nakawah MO, Hawkins C, Barbandi F. Asthma, chronic obstructive pulmonary disease (COPD), and the overlap syndrome. *J Am Board Fam Med*. 2013; 26(4): 470-477.
4. Ford ES, Croft JB, Mannino DM, Wheaton AG, Zhang X, Giles WH. COPD surveillance—United States, 1999-2011. *Chest*. 2013; 144(1): 284-305.
5. Centers for Disease Control and Prevention. National Center for Health Statistics. Health Data Interactive. www.cdc.gov/nchs/hdi.htm. Accessed June 13, 2016.
6. BRFSS Prevalence & Trends Data. 2015. Centers for Disease Control and Prevention. http://nccd.cdc.gov/BRFSS.Prevalence/rdPage.aspx?rdReport=DPH_BRFSS.ExploreByTopic&isClass=CLASS03&isTopic=Topic14&isYear=2014. Accessed June 13, 2016.
7. Martinez FJ, Raczek AE, Seifer FD, et al. Development and initial validation of a self-scored COPD population screener questionnaire (COPD-PS). *COPD*. 2008; 5:85-95.