Childhood Asthma and the Asthma Counselor Program of the East Harlem Asthma Center of Excellence

Childhood asthma is a chronic illness characterized by inflammation and hyper-reactivity of the airways that can worsen when exposed to triggers such as pests, mold, pollen, cigarette smoke, and air pollution, and structural and psychosocial factors such as stress and violence. Asthma symptoms include coughing, wheezing, and shortness of breath or chest tightness. Asthma is a leading cause of missed school days for children and results in missed work and wages for those caring for affected children. Asthma can lead to emergency department (ED) visits, hospitalizations, and even death; however, with proper treatment and resources, these are preventable. Effective asthma management requires care coordination with providers, controlling and avoiding triggers, managing symptoms, and proper use of medications.

Asthma disproportionately affects children of color and those in low-income neighborhoods. Disparities are likely due to factors such as differences in neighborhood housing quality, exposure to pests in the home, the psychosocial environment, and access to and quality of health care. Many of these relate to historical disinvestment in neighborhoods of color throughout New York City (NYC), including East Harlem.

This brief provides an overview of racial/ethnic inequities in childhood asthma in NYC overall and between East Harlem and NYC, and data on the impact of the East Harlem Asthma Center of Excellence (EHACE) Asthma Counselor Program.

In New York City, children of color are disproportionately affected by asthma

- In 2015, 13% of NYC children aged 12 years and younger had ever been diagnosed with asthma.
- Black children were five times as likely and Latino children were three times as likely as White children to have been diagnosed with asthma (22% and 15% vs. 4%). Asian children were twice as likely as White children to have been diagnosed with asthma (10% vs. 4%).
- Racial inequities are also evident in asthma-related deaths. In 2010-2014, of the 57 NYC children ages 1 to 14 years who died from asthma-related causes, 50 were Black or Latino.

| Prevalence of asthma among children ages 0 to 12 by race/ethnicity, New York City, 2015 |
|----------------------------------|-----------------|-----------------|-----------------|-----------------|
| Black                           | 22%             | Latino          | 15%             | Asian           | 10%             | White           | 4%              |
| Prevalence (%)                  | 20%             | 15%             | 10%             | 4%              |

<table>
<thead>
<tr>
<th>Asthma-related deaths among children ages 1 to 14 by race/ethnicity, New York City, 2010-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of deaths</td>
</tr>
<tr>
<td>Black</td>
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<tr>
<td>Number of deaths (%)</td>
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</tbody>
</table>

White, Black, and Asian and Pacific Islander race categories exclude Latino ethnicity. Latino includes Hispanic or Latino of any race.

Children living in East Harlem experience high rates of asthma-related emergency department visits and hospitalizations

• In 2014, the asthma-related hospitalization rate was 2.2 times higher among children ages 0 to 17 years living in East Harlem versus those in the rest of NYC (99 vs. 44 per 10,000).
• The rate of asthma-related ED visits was 2.4 times higher among children in East Harlem versus those in the rest of NYC (620 vs. 255 per 10,000).

The East Harlem Asthma Center of Excellence promotes health equity by supporting families with children who have asthma

• More than 450 families graduated from the Asthma Counselor Program between 2008 and 2016.
• According to self-reported parent/caregiver responses for the 45 children who graduated from the Asthma Counselor Program in 2016:
  o The average number of days children experienced coughing, wheezing, shortness of breath, or tightness in the chest in the past 14 days decreased from 3.3 days at baseline to 1.6 days at the final follow-up session.
  o In the past 30 days, the average number of nights that children experienced awakenings due to coughing, wheezing, shortness of breath or tightness in the chest decreased from 3 at baseline to 0.5 nights at the final follow-up session.

The East Harlem community district is a culturally rich and diverse neighborhood primarily comprised of Black (31%) and Latino (50%) residents. Thirty-one percent of residents live below the federal poverty level, compared with just 15% in the entire borough of Manhattan. Life expectancy is almost nine years shorter compared with the Upper East Side, an affluent, predominantly White neighborhood bordering East Harlem to the south (76 years vs. 85 years). In 2011, 76% of renter-occupied homes in East Harlem had maintenance problems such as leaks, cracks and holes.

[Data for East Harlem defined by United Hospital Fund (UHF 42) geography. UHF classifies NYC into 42 neighborhoods comprised of contiguous ZIP codes. Source: SPARCS 2014; NYC DOHMH population estimates, modified from US Census Bureau interpolated intercensal population estimates, vintage 2016. Updated August 2016]

The East Harlem Asthma Center of Excellence has provided culturally and linguistically appropriate asthma counseling, including individual case management services, to more than 1,300 children and their families from East Harlem, as well as Central Harlem, the South Bronx, and other neighborhoods. The program serves children ages 0 to 17 and works with families for one year. Families graduate from the program with skills and knowledge to properly manage asthma symptoms. EHACE is part of the Harlem Neighborhood Health Action Center. For more information, search EHACE at [www1.nyc.gov](http://www1.nyc.gov).
Among the 45 children who graduated from the Asthma Counselor Program in 2016, parents/caregivers reported:

- The total number of asthma-related ED visits in the previous 12 months declined 56% from 66 at baseline to 29 at final follow-up.
- The number of children having two or more asthma-related ED visits in the previous 12 months decreased from 16 at baseline to five at final follow-up.
- The total number of asthma-related hospitalizations in the previous 12 months decreased from 10 at baseline to five at final follow-up.

*Latino: For the purpose of this publication Latino includes persons of Hispanic or Latino origin, as identified by the survey question “Is [CHILD] Hispanic or Latino?” or based on ancestry reported on the death certificate, regardless of reported race. For mortality data, Latino excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White, Asian, and Other race categories do not include persons of Latino origin.

References

Authors: Henry Wang, Rachel Dannefer, La’Shawn Brown-Dudley, Katina Quesinberry, Sufiya Campbell, Folake Eniola, and Noel Manyindo

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Data Sources
A. Child Health, Emotional Wellness and Development Survey (CHEWDS) 2015 was a random digit dial survey of approximately 3,000 NYC families with children ages 0 to 12 conducted by the Health Department. Respondents were individuals who were “sufficiently knowledgeable” about the child (85% biological parents).

B. Statewide Planning and Research Cooperative System (SPARCS) 2014: SPARCS is an administrative database of all hospital discharges reported by New York State (NYS) hospitals to the NYS Department of Health. Data are extracted based on the International Classification of Diseases -9th Revision Code (ICD-9CM) 493.XX for all children ages 0-17 years residing in East Harlem. Rates were calculated using NYC DOHMH intercensal population estimates, modified from US Census Bureau intercensal population estimates, 2010-2015, vintage 2016, updated August 2016.

C. East Harlem Asthma Center of Excellence (EHACE) 2008-2016:
The EHACE Asthma Counselor Program collects routine data on program participants including asthma management, asthma symptoms and asthma-related ED visits and hospitalizations. Data are collected at enrollment, then every three months until graduation (minimum one year).
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Data Tables

Table 1. Asthma-related hospitalizations among children in New York City by United Hospital Fund neighborhood, 2014

Table 2. Asthma-related emergency department visits among in New York City by United Hospital Fund neighborhood, 2014

Data Sources

SPARCS 2014: The Statewide Planning and Research Cooperative System (SPARCS) is an administrative database of inpatient and outpatient discharges reported by New York State (NYS) hospitals to the NYS Department of Health. Diagnoses are coded according to the International Statistical Classification of Diseases and Related Health Problems-9th Revision framework.
Table 1. Asthma-related hospitalizations in New York City by United Hospital Fund neighborhood,^ 2014  

<table>
<thead>
<tr>
<th>UHF Neighborhood</th>
<th>Ages 0-4 years</th>
<th>Ages 5-17 years</th>
<th>Ages 0-17 years</th>
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<td></td>
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</table>

^The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes.  
-- Data supressed due to small number of events.
### Table 2. Asthma-related emergency department visits in New York City by United Hospital Fund neighborhood,^ 2014


| UHF Neighborhood | Ages 0-4 years | | Ages 5-17 years | | Ages 0-17 years | |
|------------------|----------------|----------------|----------------|----------------|----------------|
|                  | Count          | Rate per 10,000 | Count          | Rate per 10,000 | Count          | Rate per 10,000 |
| 101 Kingsbridge - Riverdale | 137 | 217.6 | 267 | 215.9 | 404 | 216.5 |
| 102 Northeast Bronx | 653 | 547.8 | 1175 | 371.2 | 1828 | 419.5 |
| 103 Fordham - Bronx Park | 1561 | 738.1 | 2185 | 460.6 | 3746 | 546.2 |
| 104 Pelham - Throgs Neck | 1070 | 504.8 | 1642 | 314.3 | 2712 | 369.3 |
| 105 Crotona - Tremont | 1454 | 789.0 | 1964 | 457.6 | 3418 | 557.1 |
| 106 High Bridge - Morrisania | 1594 | 867.5 | 2136 | 495.2 | 3730 | 606.4 |
| 107 Hunts Point - Mott Haven | 1024 | 844.4 | 1481 | 515.2 | 2505 | 612.9 |
| 201 Greenpoint | 111 | 95.9 | 167 | 83.8 | 278 | 88.2 |
| 202 Downtown - Heights - Slope | 297 | 164.8 | 392 | 154.5 | 689 | 158.8 |
| 203 Bedford Stuyvesant - Crown Heights | 1225 | 738.1 | 2185 | 460.6 | 3746 | 546.2 |
| 204 East New York | 776 | 511.2 | 1371 | 373.3 | 2147 | 413.6 |
| 205 Sunset Park | 113 | 97.1 | 213 | 105.5 | 326 | 102.4 |
| 206 Borough Park | 211 | 59.2 | 286 | 42.1 | 497 | 48.0 |
| 207 East Flatbush - Flatbush | 711 | 352.9 | 1155 | 250.6 | 1866 | 281.7 |
| 208 Canarsie - Flatlands | 322 | 264.7 | 556 | 174.4 | 878 | 199.3 |
| 209 Bensonhurst - Bay Ridge | 88 | 61.3 | 114 | 38.3 | 202 | 45.7 |
| 210 Coney Island - Sheepshead Bay | 198 | 103.2 | 347 | 81.3 | 545 | 88.1 |
| 211 Williamsburg - Bushwick | 844 | 494.8 | 1457 | 387.5 | 2301 | 421.0 |
| 301 Washington Heights - Inwood | 571 | 372.7 | 873 | 267.6 | 1444 | 301.2 |
| 302 Central Harlem - Morningside Heights | 671 | 650.7 | 1266 | 565.2 | 1937 | 592.1 |
| 303 East Harlem | 544 | 730.6 | 970 | 571.7 | 1514 | 620.1 |
| 304 Upper West Side | 26 | 130.2 | 174 | 106.1 | 540 | 161.6 |
| 305 Upper East Side | 65 | 53.8 | 121 | 59.1 | 186 | 57.1 |
| 306 Chelsea - Clinton | 63 | 113.3 | 107 | 140.6 | 170 | 129.0 |
| 307 Gramercy Park - Murray Hill | 56 | 114.0 | 80 | 136.3 | 136 | 126.1 |
| 308 Greenwich Village - Soho | 26 | 71.0 | 20 | 35.5 | 46 | 49.5 |
| 309 Union Square - Lower East Side | 267 | 329.7 | 411 | 243.4 | 678 | 271.4 |
| 310 Lower Manhattan | 26 | 67.9 | 68 | 167.2 | 94 | 119.1 |
| 401 Long Island City - Astoria | 114 | 95.4 | 284 | 120.4 | 398 | 112.0 |
| 402 West Queens | 547 | 153.4 | 836 | 119.3 | 1383 | 130.8 |
| 403 Flushing - Clearview | 164 | 135.6 | 254 | 79.4 | 418 | 89.9 |
| 404 Bayside - Little Neck | 18 | 39.6 | 44 | 34.8 | 62 | 36.1 |
| 405 Ridgewood - Forest Hills | 243 | 151.2 | 335 | 104.0 | 578 | 119.7 |
| 406 Fresh Meadows | 90 | 126.4 | 154 | 107.6 | 244 | 113.9 |
| 407 Southwest Queens | 477 | 267.3 | 676 | 152.4 | 1153 | 185.3 |
| 408 Jamaica | 762 | 153.4 | 902 | 197.4 | 1664 | 257.8 |
| 409 Southeast Queens | 262 | 240.4 | 349 | 118.8 | 611 | 151.7 |
| 410 Rockaway | 174 | 186.1 | 362 | 172.9 | 536 | 177.0 |
| 501 Port Richmond | 137 | 259.2 | 309 | 216.3 | 446 | 227.9 |
| 502 Stapleton - St. George | 152 | 201.0 | 320 | 159.3 | 472 | 170.7 |
| 503 Willowbrook | 38 | 80.3 | 71 | 55.0 | 109 | 61.8 |
| 504 South Beach - Tottenville | 66 | 65.7 | 152 | 50.0 | 218 | 54.7 |

^The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes.