Asthma Disparities
A National and Local Perspective

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Problem:

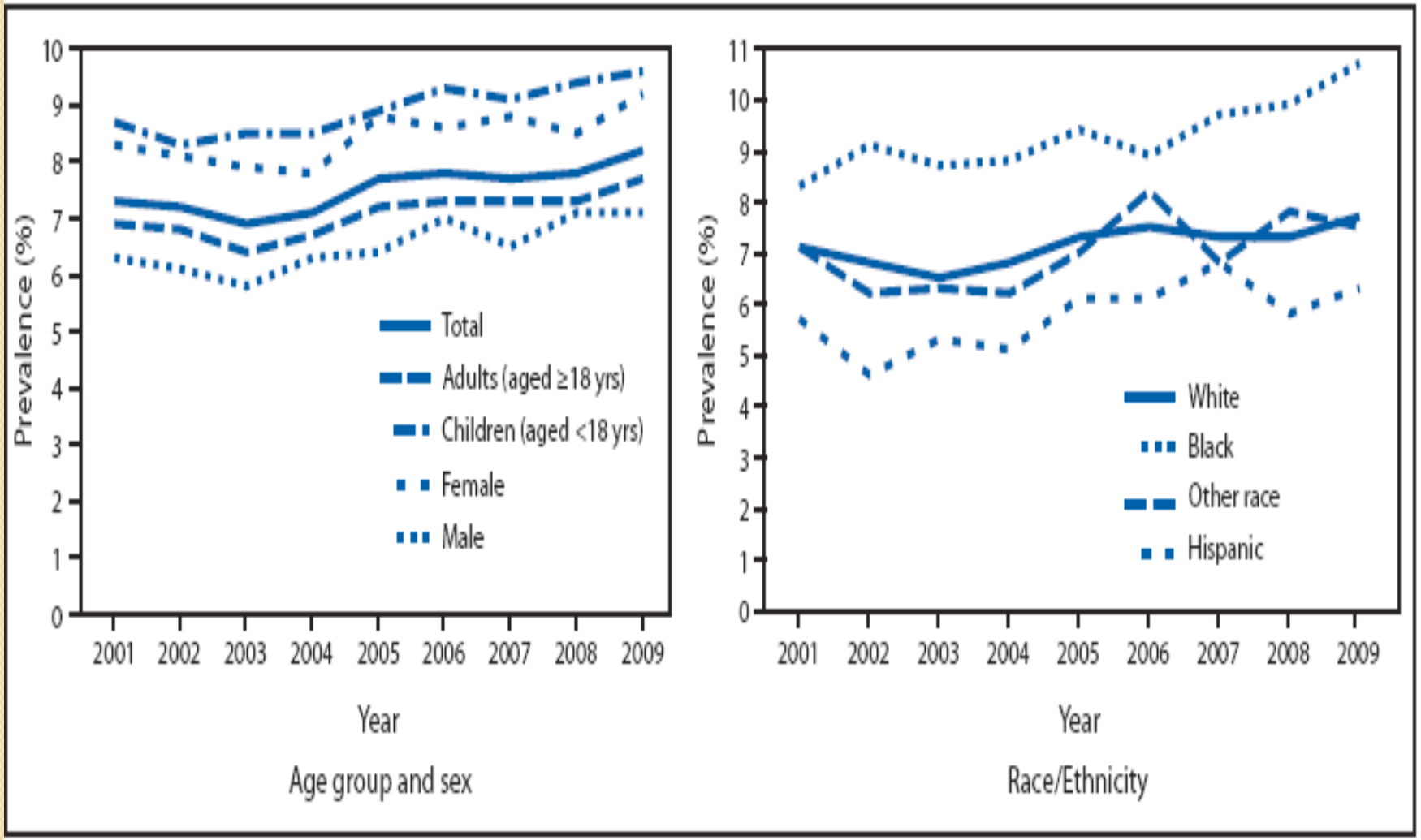
- **Asthma prevalence rates remain at historically high levels affecting 20 million people of which 7 million are children.**
- **Despite advances in medical care the burden of asthma continues to also be at historically high levels**
- **The burden of asthma disproportionately falls to Blacks and Puerto Ricans.**

Asthma Burden in Children

- Minority children are less likely than white children to be prescribed or take recommended treatments to control their asthma, and are less likely to attend outpatient appointments.
- In 2008, asthma accounted for 10.5 million missed school days.
- Children with more severe asthma and/or nighttime symptoms are more likely to suffer academically than those with more mild symptoms.

Asthma Prevalence

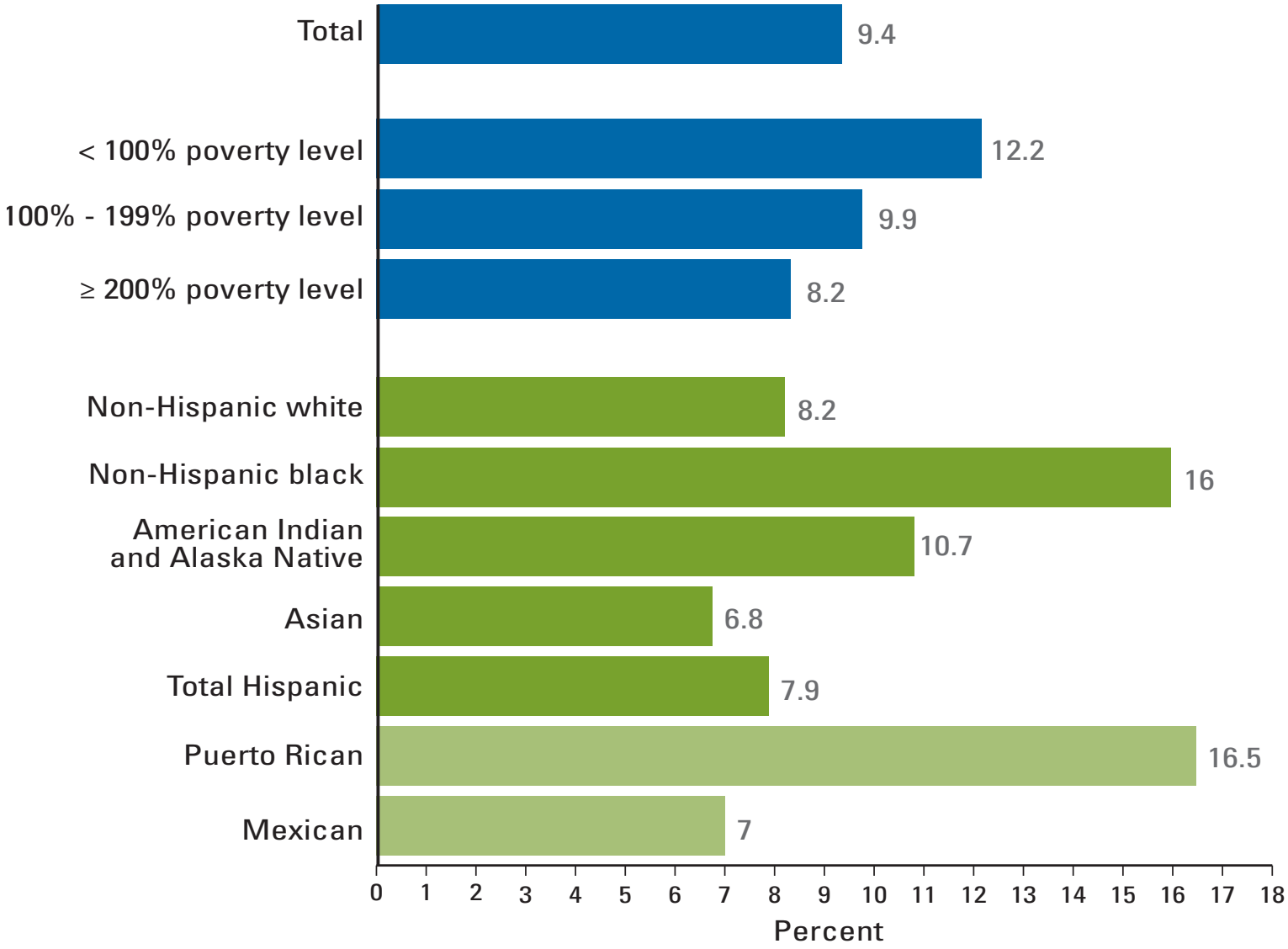
FIGURE 1. Current asthma prevalence,* by age group,† sex, and race/ethnicity — National Health Interview Survey, United States, 2001–2009



* Includes persons who answered "yes" to the questions: "Have you ever been told by a doctor or other health professional that [you/your child] had asthma?" and "Do [you/your child] still have asthma?"

† Age-adjusted to the 2000 U.S. population, except age-group–specific estimates.

Current Asthma Prevalence Among Children, by percent of total population of 0 to 17 year olds, United States, 2007-2010



Source: CDC/NCHS, National Health Interview Survey, http://www.cdc.gov/asthma/nhis/default.htm

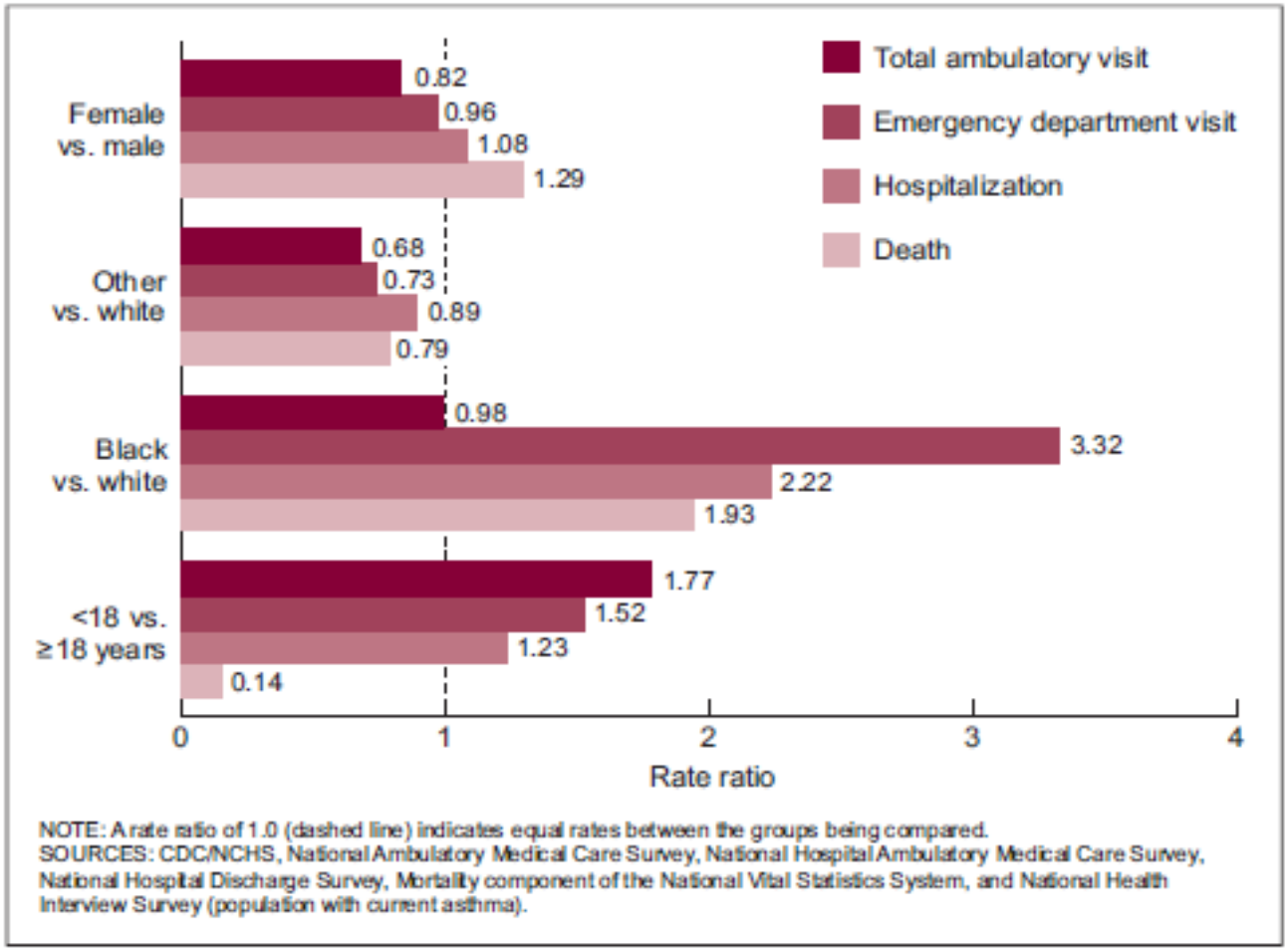
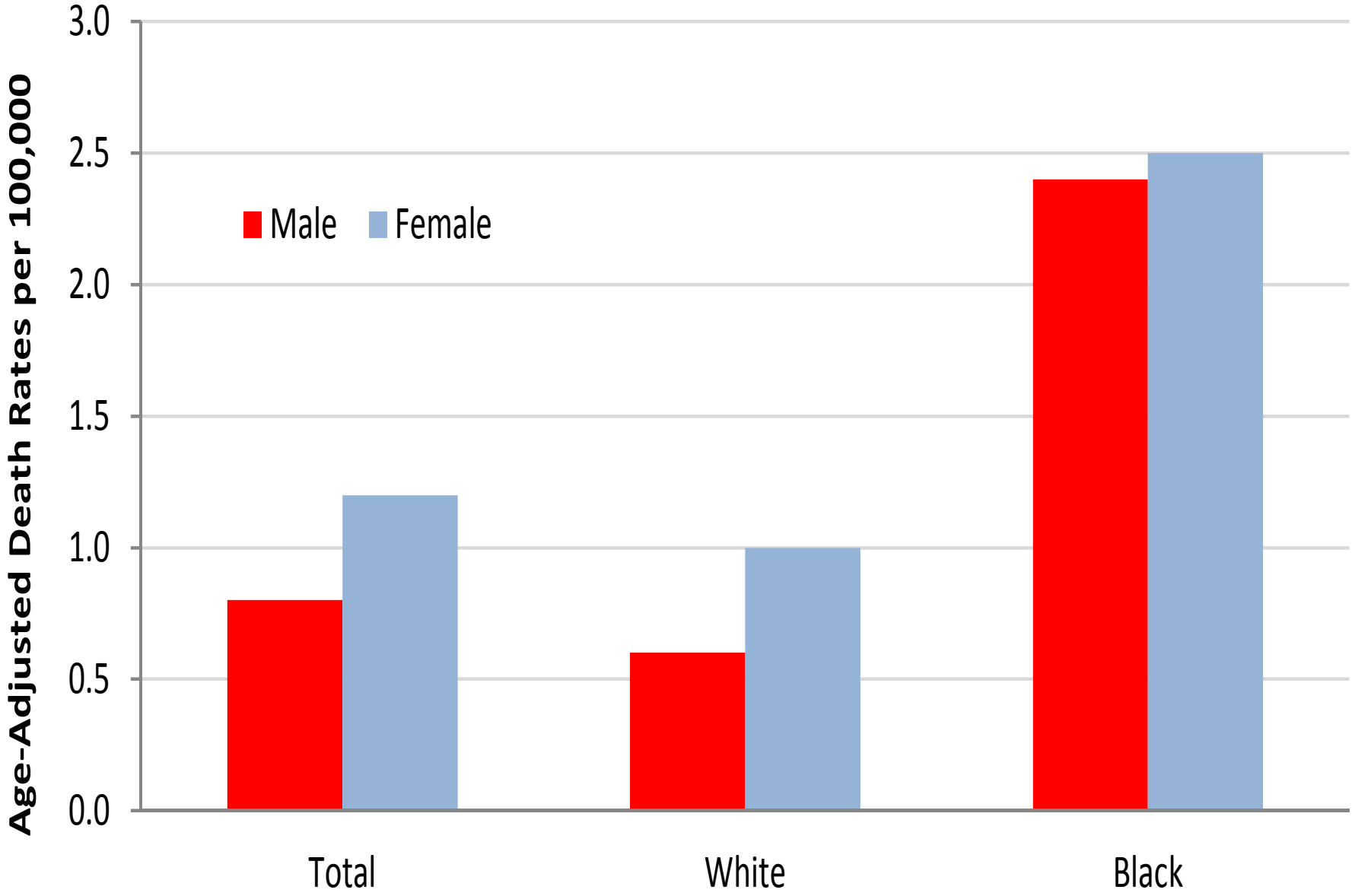


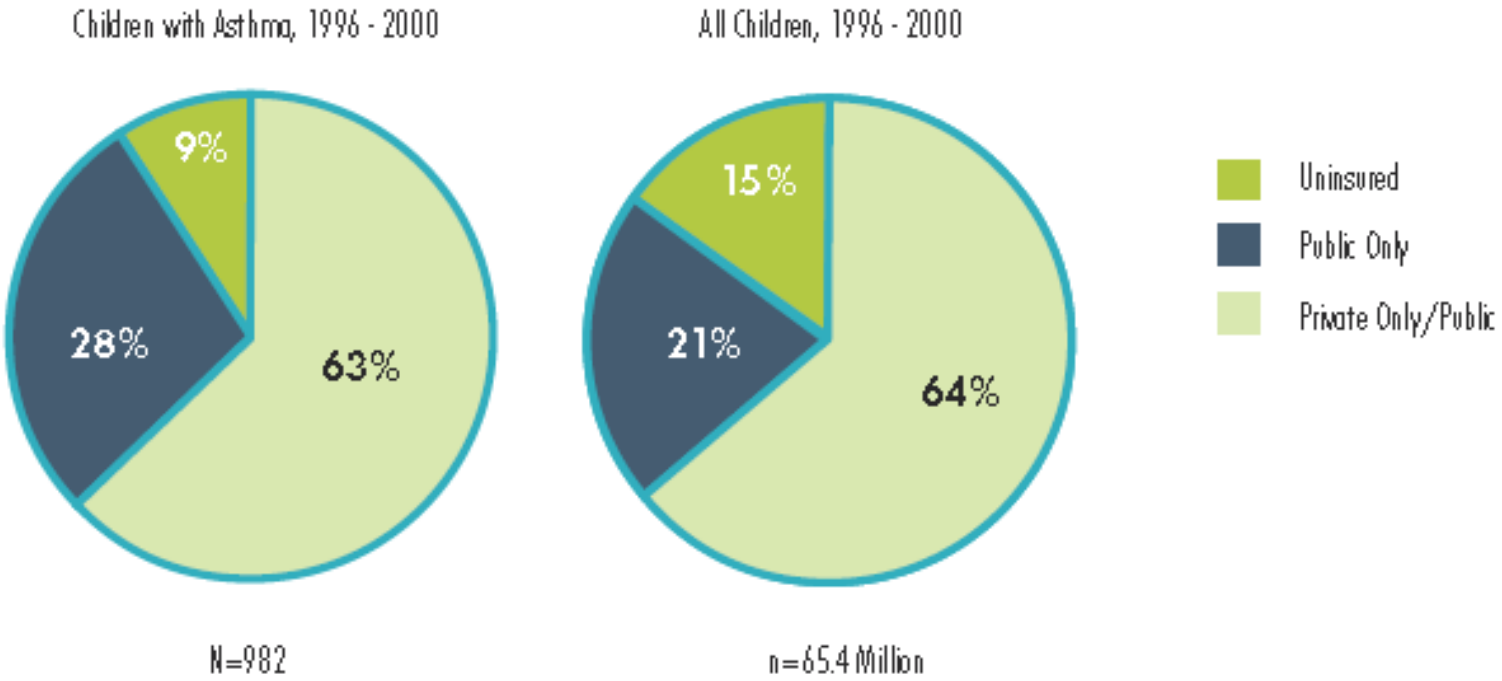
Figure 4. Relative burden of asthma health care use and mortality, adjusted for current asthma prevalence, by sex, race, and age group: United States, annual average 2005–2007

Figure 1: Asthma – Age-Adjusted Death Rates by Sex and Race, 2009



Source: CDC Wonder On-line Database, 2009 data.

Children with Asthma are Disproportionately Covered by Medicaid, 1996-2000



Source: Kim et al. (2009). Health Care Utilization by Children with Asthma, *Preventing Chronic Disease* Vo. 6: No. 1 and Medical Expenditure Panel Survey Data, 1996-2000.

Outstanding Issues in Reducing Asthma Disparities

- Unequal housing
- Lack of infrastructure to support CHW's being integrated into care
- Lack of policies to support multifaceted interventions in homes
- Lack of incentives to primary care providers to provide adequate and culturally appropriate care
- Lack of enforcement of healthy home standards across the nation

HP2020-Asthma Objectives

- Reduce asthma deaths
- Reduce asthma emergency visits
- Reduce asthma hospitalizations
- Reduce proportion of people with missed school and work days due to asthma
- Increase proportion of persons who have current care receive appropriate care according to NAEPP guidelines

http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=36

Case Study: Community Asthma Prevention Program
Improving Asthma Outcomes through Closing the Circle of Care

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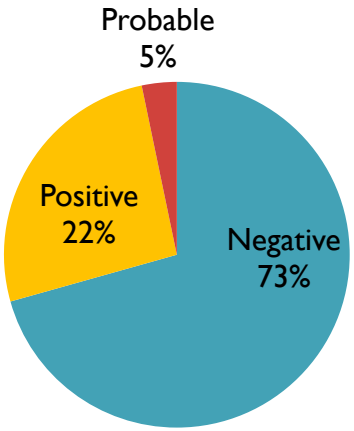
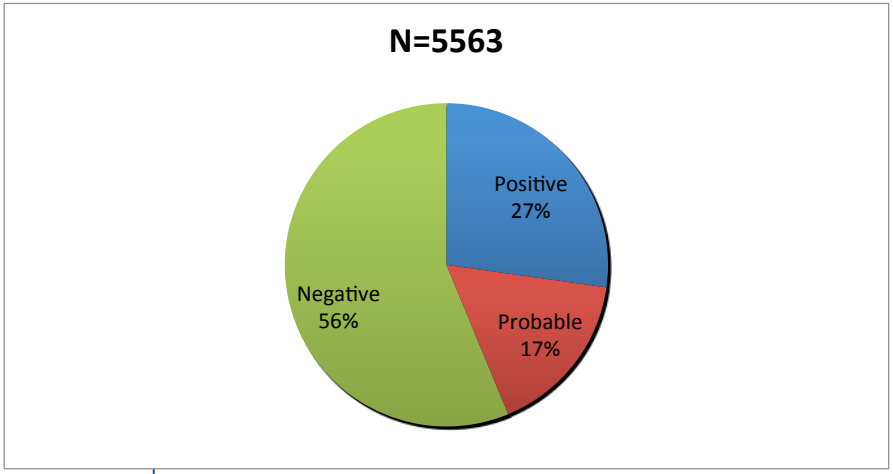
Prevalence of Asthma in Philadelphia

Door to Door N=2345



School Screenings N=5563



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J of Asthma 2012

Community Asthma Prevention Program Interventions

Community Classes for Parents

School Classes for Students

Home Environmental Asthma Trigger Reduction and Education

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You Can Control Asthma Navigator Study

- Prospective Case Matched control study
- Enroll 240 high risk asthmatics from three inner-city practices
- Assign to a CHW who acts as Asthma Navigator embedded in each practice

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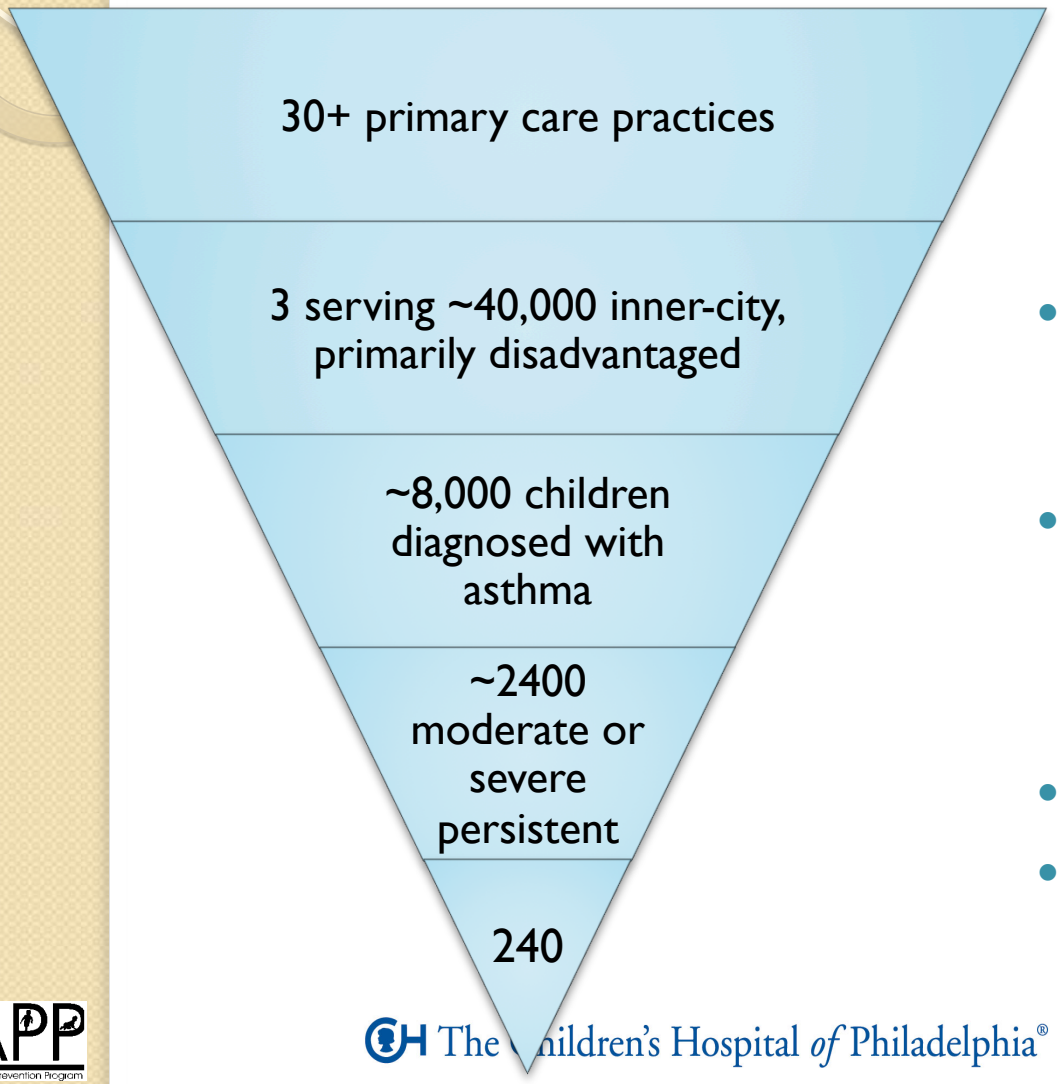
CHOP CARE Network



- Community Health Workers with a combined total of 23 years experience with asthma
- Assigned to three CHOP CARE Network inner- city offices and integrated into clinical health team
- Residents of Philadelphia
- Charmane Braxton and Carmen Perez

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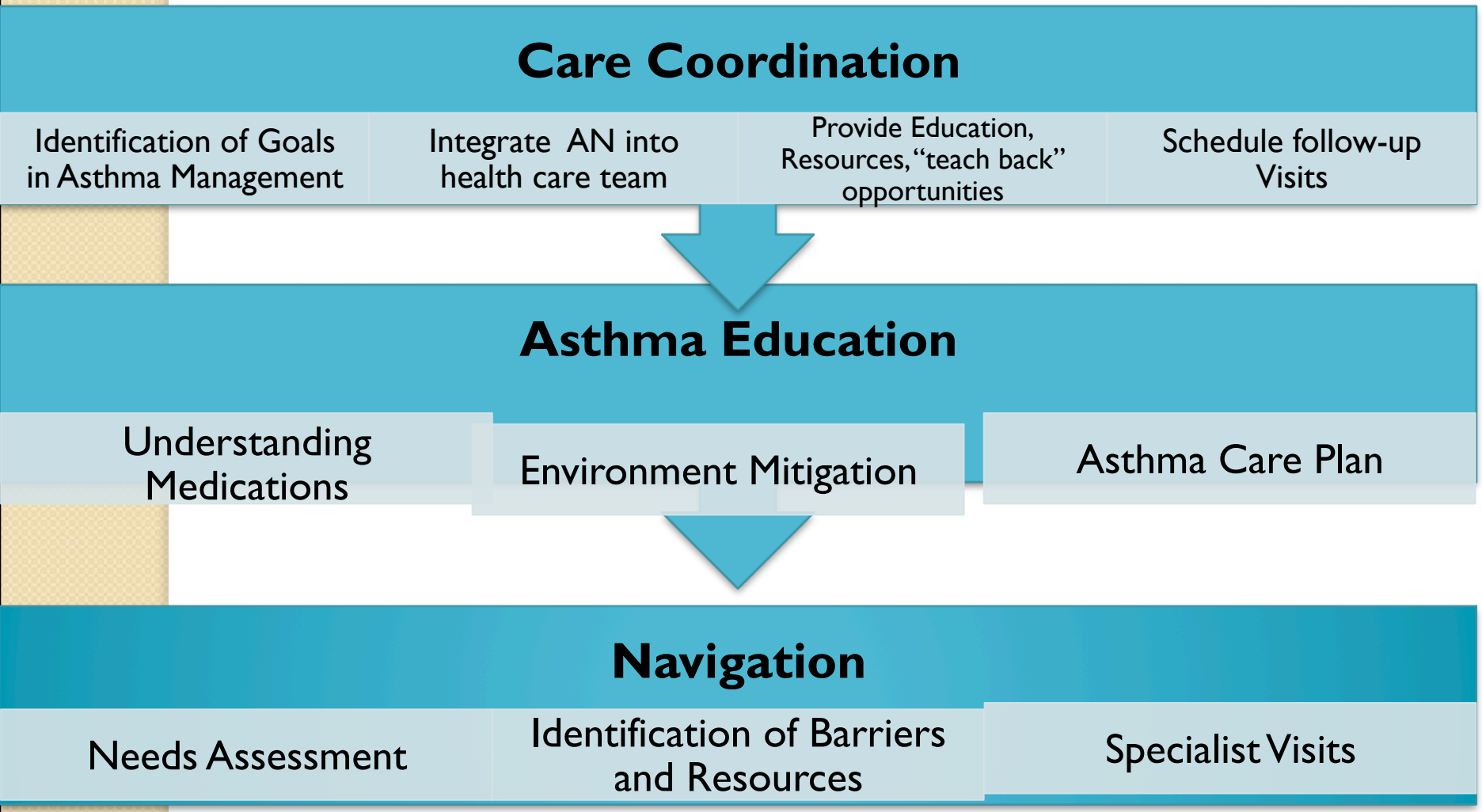
Eligibility Criteria

- 0-17 years old
- 1 inpatient or 2 ED visits in past year
- On at least two controller medications
- PCP in one of 3 CHOP primary care practices
- Medicaid or CHIP insured

Case matched Control

- Birth year
- Gender
- Ethnicity
- Number of ED or IP visits year prior to identification

YCCA Navigator Program



Methodology

- MCAN caregiver Survey completed at baseline and repeated at 12 months used by four sites.
- The survey instruments included questions addressing the following domains:
  - patient demographics
  - health care utilization
  - asthma control
  - asthma medications
  - asthma symptoms
- Home assessments surveyed Asthma Triggers present at baseline and 12 months
- Observation of Home condition
- Remediation actions taken within the home at 12 months

Baseline Demographics

Age	**4.97 years (±3.5)**
African-American (race)	93.4%
Male (sex)	64.8%
Well Controlled	**16.0%**
Uncontrolled	19.9%
Poorly Controlled	30.9%

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Symptom/Medication Results

	Mean days Baseline n=254	**Mean Days 12 months** n=254	**Number of Days Reduced**	**p-value**
Took rescue meds (in past 2 weeks)	5.87 (±5.8)	2.74 (±3.5)	**3.1 days**	.000
Symptom Days (in past 4 weeks)	6.78 (±7.9)	3.00 (±5.2)	**3.78 days**	.000
Symptom Nights (in past 4 weeks)	7.00 (±9.3)	2.42 (±5.2)	**4.58 days**	.000
Slowed Activity	5.50 (±8.6)	2.51 (±5.7)	**~3 days**	.000
School Days Missed	9.77 (±11.5)	2.82 (±3.3)	**~7 days**	.000
Work Days Missed	9.16 (±16.7)	1.52 (±3.0)	**7.5 days**	.000

Asthma Triggers in Home Environment Results n=254

	First Home Visit	Last Home Visit	*P-value*
Roaches	29.0%	15.1%	*p<.001*
Rodents	72.5%	61.3%	*p<.001*
Smokers	40.2%	38.5%	*NS*
Pets	38.6%	34.8%	*p<.006*
Wall-to-wall carpet	41.3%	38.9%	*p<.057*
Wet basement	13.5%	2.0%	*p<.001*
Upholstered furniture	85.9%	85.7%	*NS*
Stuffed animals	64.6%	33.5%	*p<.001*

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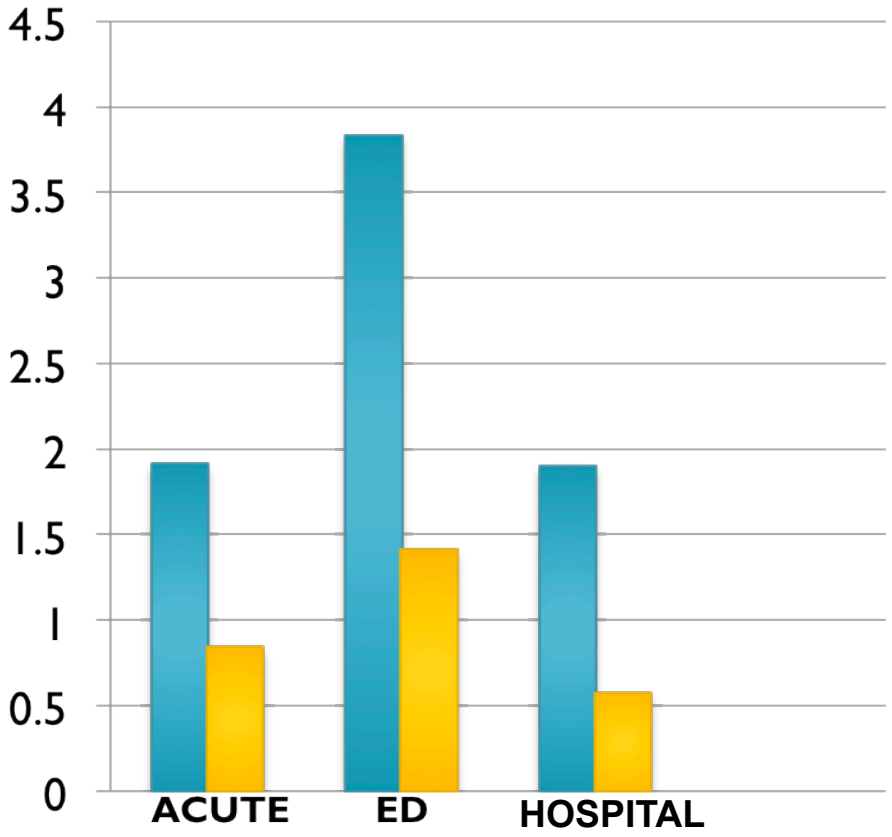
Healthcare Utilization Results



Sustainability Strategies

- ✓ Integrated community health workers into multidisciplinary clinical team led to shared valuable information not readily available to physician
- ✓ Removed barriers to communication between caregiver and physician
- ✓ Facilitated communications between CHW and physician through the EMR
- ✓ Shared information about outcomes with Medicaid managed care asthma coordinators on a bi-annual basis face-to-face
- ✓ Met with state payors through the PA AAP to discuss asthma interventions and need for reimbursements

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Sustainability Milestones and Successes

- Contracts with 2/3 Medicaid payors
- Medicaid payor agrees to cover 2 spacers every 180 days
- Medicaid payor considering designation of CHOP PCC as High Performance Practice and removed barriers to clinical care (e.g., prior authorization)
- CHOP CARE Network now supports two asthma navigators
- Able to dispense asthma medicines and devices at point of care for largest Medicaid payor
- Asthma Navigator
  - role now fully integrated into practice
  - now on staff
  - now reimbursed by two MMCO's to do home visits

Opportunities for Medicaid

- Provide one formulary for all asthma medications
- Provide reimbursement for asthma educational and multi-trigger removal by non-traditional health care workers
- Provide holding chambers for children at home and at school

Summary

- Asthma Disparities are complex in origin
- Evidence supports that a multi-system approach to asthma care for disadvantaged racial and ethnic populations can lead to elimination of asthma disparities
- Asthma Disparities must be approached at a population and individual level in order to achieve health equity for all.

Conclusions

- CAPP's asthma navigator program successfully integrated CHWs into the clinical setting while providing much-needed support to the caregivers of high risk children with asthma.
- The asthma navigators promoted national asthma-guideline based care in the home and in the office which resulted in increased primary care office acute visits, reduced asthma symptoms and reduced healthcare utilization.
- The value added by this program has been acknowledged by the practices and the insurers evidenced by their willingness to support and sustain these asthma navigators.