



A proud member of Sinai Health System



# Use of Lay Health Educators to Improve Asthma Management Among African American Children:

## Findings from a Pilot Study in Chicago

Helen Margellos-Anast, MPH  
APHA 135<sup>th</sup> Annual Meeting  
November 6, 2007



A proud member of Sinai Health System

# Outline

---

- **Background**
- Use of Lay Health Educators to Improve Asthma Management Among African American Children (PAI-2)
- Recommendations



A proud member of Sinai Health System

# Epidemiology of Asthma

---

- 9 million children (12% of children <18 yrs) in the U.S. have asthma (NHIS 2004)
- Inner-city, minority children experience a disproportionate asthma burden
  - Prevalence approaches 1 in 4
  - Many rely primarily on ED for asthma care
- In 2003, IL spent \$800 million providing medical care to Medicaid-insured persons with asthma
  - More than a quarter of that was related to inpatient hospitalizations (\$225 million)



A proud member of Sinai Health System

---

# Use of Lay Health Educators to Improve Asthma Management Among African American Children (PAI-2)

Funded by the Illinois Department of Public Health

November 2004 – August 2006



A proud member of Sinai Health System

## PAI-2: Overview

- Instigated by the findings of the *Improving Community Health Survey*
- Goal: to improve asthma management among inner-city African American children with severe asthma and thereby: (1) decrease asthma-related morbidity and (2) improve quality of life.
- Pilot grant from IDPH
  - Builds on experiences with a prior Pediatric Asthma Intervention (PAI)  
(Findings published in *Journal of Asthma* 2007;44: 39-44)



A proud member of Sinai Health System

## PAI-2: Overview (cont.)

---

- Utilizes Lay Health Educators (LHE) from the Community to teach children and their families how to more effectively manage asthma
  - a.k.a. Community Health Workers, Peer Educators, etc.
  - Home visits
- 2 part time LHEs hired



A proud member of Sinai Health System

## PAI-2: The Intervention

---

- Education is tailored to family's unique needs, and is provided in the family's home whenever possible
- LHE meet with families 3-4 times over 6 month period
- LHE also serves as a liaison between the family and the medical system



A proud member of Sinai Health System

# PAI-2: The Intervention (cont.)

---

- Home Visit –

## Topics covered:

- What is asthma?
- Recognizing symptoms of asthma attack
- What to do during an asthma attack
- Medications – quick-relief vs. long term controller
- How to properly use medications and devices
- Trigger identification and avoidance
  - Passive cigarette smoke





A proud member of Sinai Health System

# PAI-2: Participants

- African American children (2-16 yrs) w/ prior diagnosis of asthma
  - Symptoms for at least 1 year pre-enrollment
- One of following eligibility criteria:
  - Hospitalized for asthma during the past 12 months
  - Visited ED for asthma during the past 12 months
  - Asthma symptoms indicative of at least moderate persistent asthma
- Had not participated in another comprehensive asthma education program in past year



A proud member of Sinai Health System

## PAI-2: Participants (cont.)

- Recruited primarily through Sinai's ED and inpatient units
- Physician referrals of children with severe asthma symptoms (*moderate persistent asthma*)
- LHEs contact primary caregiver of child to assess eligibility and interest
  - Ideally contacted w/in one week of ED visit or hospitalization
- **70 children enrolled 11/15/2004-7/13/2005**



# PAI-2: Participant Demographics (n=70)

---

- 57% male
- 100% African American
- Average Age = 7.3 years
- 96% Medicaid Insured
- 31% of CGs had < HS education, 39% HS graduates, 29% some college/vocational
- CGs predominantly mothers (64/70)



A proud member of Sinai Health System

# PAI-2: Baseline Data – Health Resource Utilization

---

- Enrolled participants had a history of frequent urgent health care utilization
- In the year prior to the intervention, the average child had:
  - 3.1 ED visits
  - 0.7 hospitalization
  - 2.7 visits to a doctor for worsening symptoms
  - Been to the ED, hospitalized, or to a doctor for worsening asthma symptoms 6.5 times



A proud member of Sinai Health System

## PAI-2: Baseline Data

---

- 90% of children had asthma that is poorly controlled per NHLBI standards
- 54% of children lived with a smoker
- Substantial confusion over medications and their proper use



A proud member of Sinai Health System

## PAI-2: Findings

---

- 58/70 (82.9% of enrolled) completed the 6 month intervention phase
- 50/70 (71.4% of enrolled) completed the 12 month follow-up
- **Findings presented based on these 50 children**



A proud member of Sinai Health System

## PAI-2: Findings (cont.)

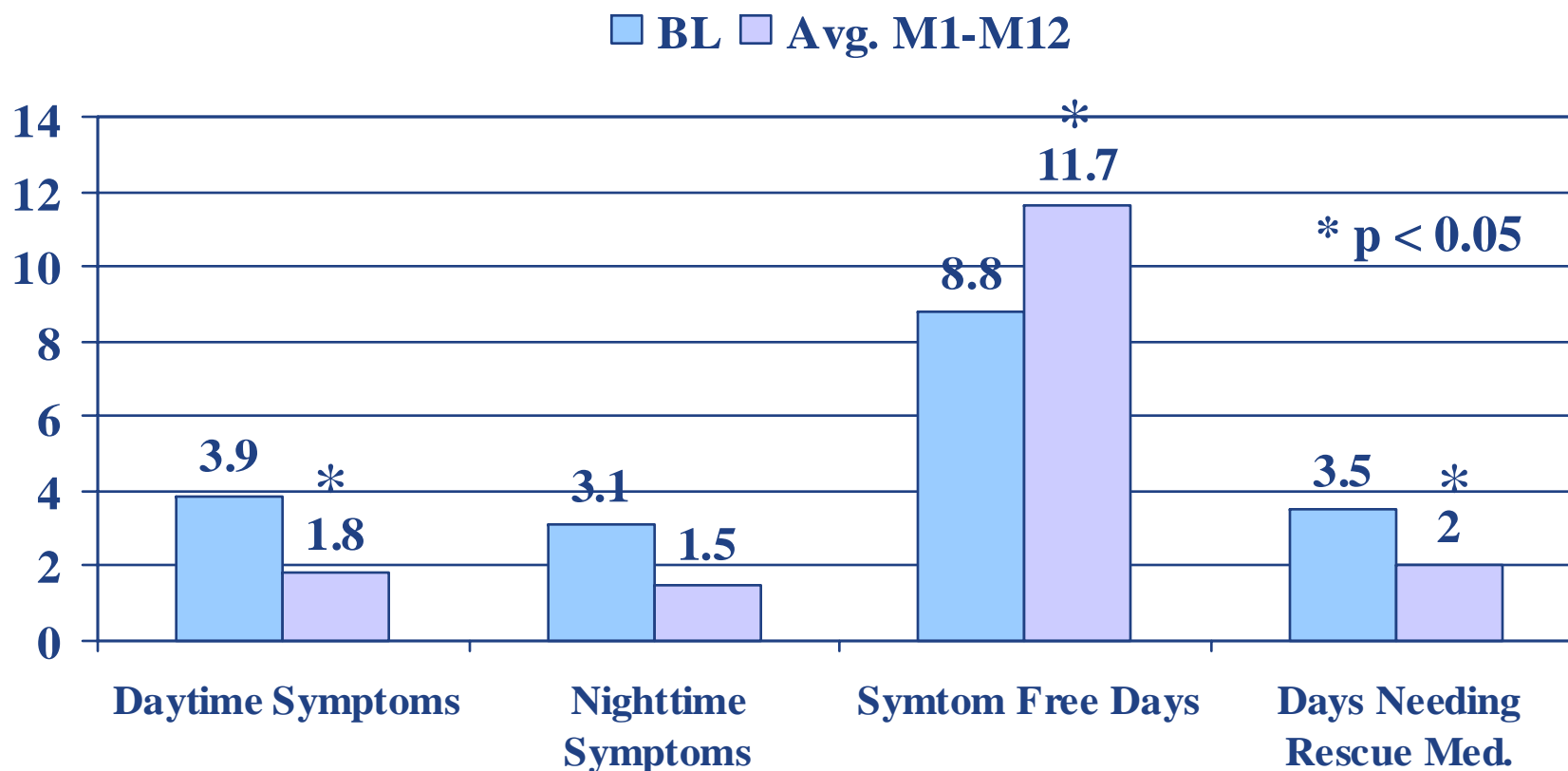
---

- Primary Goal I: Decrease asthma-related morbidity
  - Decrease the frequency and severity of asthma symptoms and exacerbations
  - Decrease urgent health resource utilization



A proud member of Sinai Health System

# PAI-2: Symptom Frequency (past 2 wks) - BL vs. Average Over FU Period

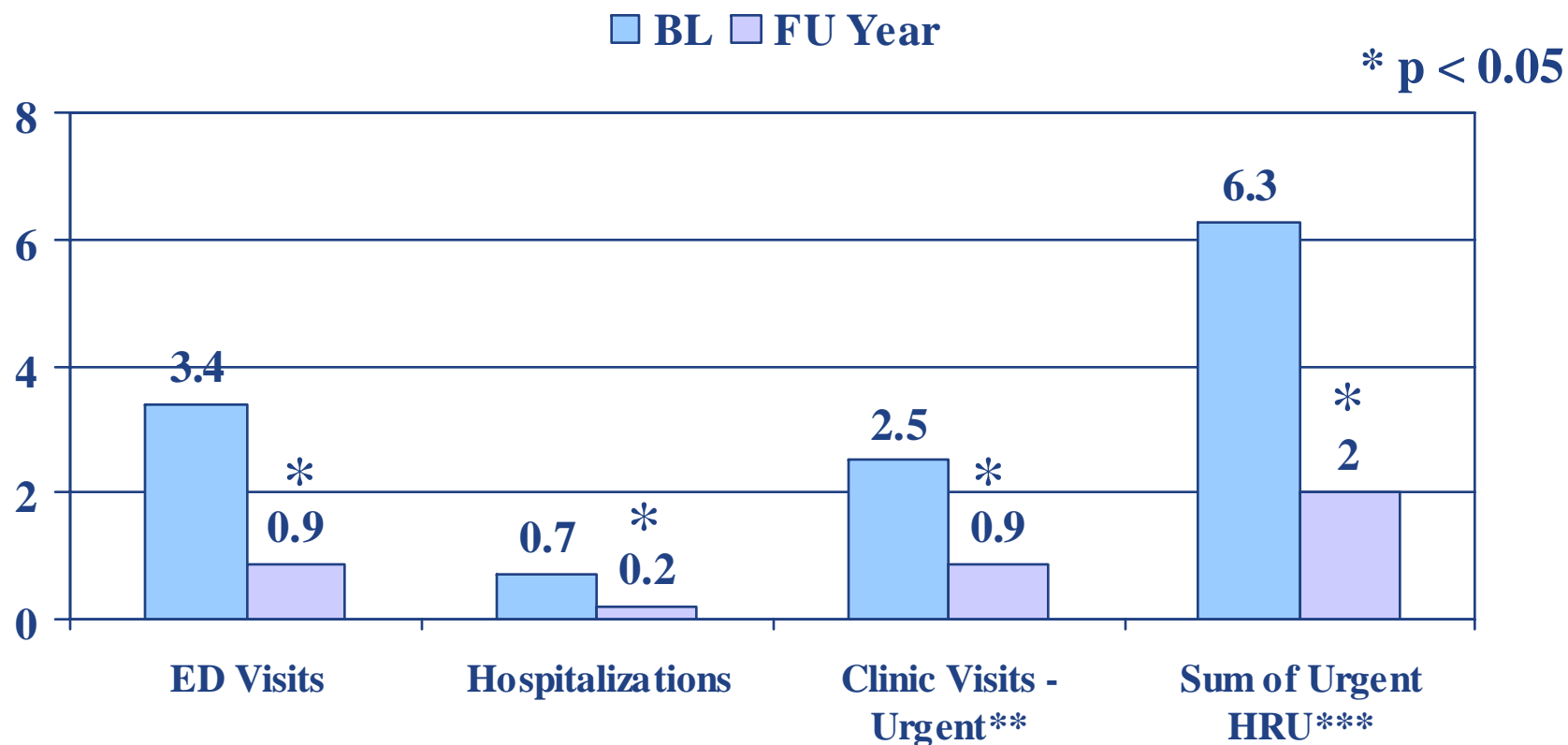






A proud member of Sinai Health System

# PAI-2: Asthma Health Resource Utilization - BL vs. FU Year



\*\*Outliers not included in analysis; n=49

\*\*\*Sum of Hosp., ED and Urgent Clinic visits. Outliers not included in analysis; n=49



A proud member of Sinai Health System

## PAI-2: Findings (cont.)

---

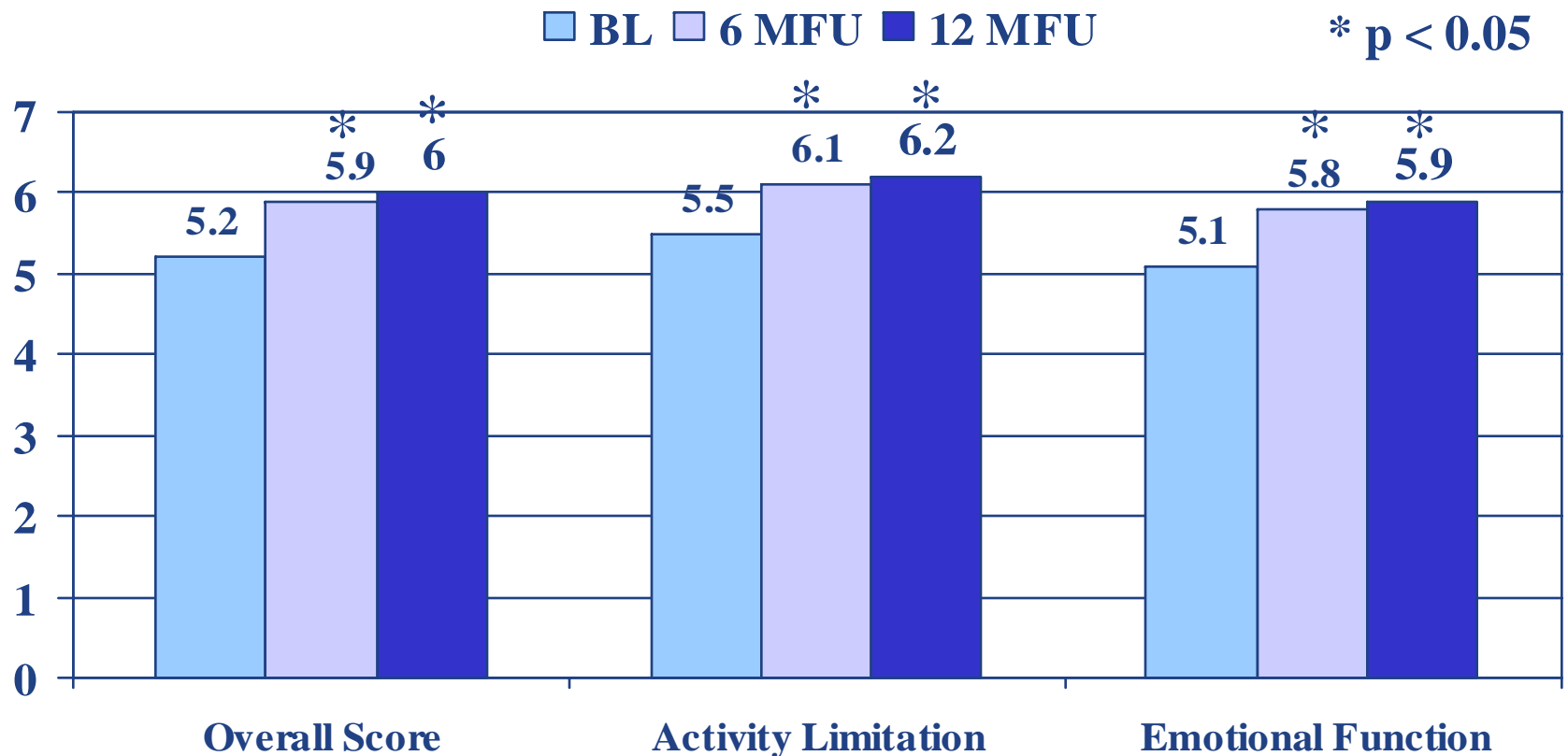
- Primary Goal 2: Improve Quality of Life
  - *Pediatric Asthma Caregiver's Quality of Life<sup>1</sup>*
    - BL, 6M, 12M

1. Juniper EF, et al. *Quality of Life Research* 1996; 5: 27-34.



A proud member of Sinai Health System

# PAI-2: Quality Of Life Scores – BL vs. 6 Month FU and 12 Month FU





A proud member of Sinai Health System

## PAI-2: Findings (cont.) – Secondary Goals

Goal	M6	M12
Improve asthma-related knowledge of primary caregiver	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Improve confidence of primary caregiver to manage asthma	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Decrease exposure to triggers, especially cigarette smoke	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Increase proportion of children with Asthma Action Plan	<input checked="" type="checkbox"/>	NA
Improve medication technique	<input checked="" type="checkbox"/>	NA



A proud member of Sinai Health System

# PAI-2: Limitations

---

- Pilot Study
  - No control group, no randomization, small sample size
- Very specific target population
- Majority of data collected via self-report
  - Recall bias, Social Desirability bias, etc.



A proud member of Sinai Health System

## PAI-2: Conclusions

---

- Individualized, one-on-one, asthma education provided by a trained, culturally competent, LHE in the home environment may prove an effective means of educating children with poorly controlled asthma and their families to better manage asthma



A proud member of Sinai Health System

## PAI-2: Conclusions (cont.)

---

- Pilot study provides evidence of improved asthma outcomes, quality of life and asthma-related knowledge, and decreased exposure to triggers among families participating in the intervention
- Intervention likely cost effective (work in progress)



A proud member of Sinai Health System

# Outline

---

- Background
- Use of Lay Health Educators to Improve Asthma Management Among African American Children (PAI-2)
- **Recommendations**





A proud member of Sinai Health System

# Recommendations

---

- Randomized Controlled Trial
- Expand model to other populations
  - Controlling Pediatric Asthma through Collaboration and Education (CPATCE)
- Test long-term effectiveness
- Continue to evaluate and publish findings on the effectiveness of LHE programs
- Funding/Reimbursement for LHE programs



A proud member of Sinai Health System

# Project Team

---

- Steve Whitman – Principal Investigator
- Helen Margellos-Anast – Project Director
- Gloria Seals – Health Education Coordinator
- DeShuna Dickens – Asthma Education Coordinator
- Melissa Gutierrez – Evaluation Coordinator
- Jeanette Avila – Research Assistant
- Sheena Freeman – Research Assistant
- Ana Rosa Garcia, Yolanda Curtis and MiCrystal Smith – Lay Health Educators
- Deepak Jajoo – Co-Investigator/Medical Advisor, Pediatric Pulmonologist



A proud member of Sinai Health System

---

For more information on SUHI

<http://www.SUHIChicago.org>

For more information on Sinai  
Children's Hospital

<http://www.sinaichildrenshospital.org/>