

# Strategies to Provide Primary Care in an Enhanced Medical Home Model to Underserved Children

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# Enhanced medical home model

- Primary care that is
  - Readily accessible
  - Continuous
  - Comprehensive
  - Coordinated
  - Family-centered
  - Culturally competent
    - *American Academy of Pediatrics, Pediatrics. 2004*
- Enhanced medical home model integrates mental health and oral health care, and facilitates access to other specialists
  - *Brito et al. Advances in Pediatrics. 2008*

# Having a pediatric medical home is associated with.....

- Improved health status
- Lower health care costs
- Reduced health disparities
  - *Starfield & Shi. Pediatrics. 2004*
- Improved management of chronic conditions
- Improved care coordination for children with complex health care needs
  - *Palfrey, et al. Pediatrics. 2004.*

# Special needs of medically underserved children

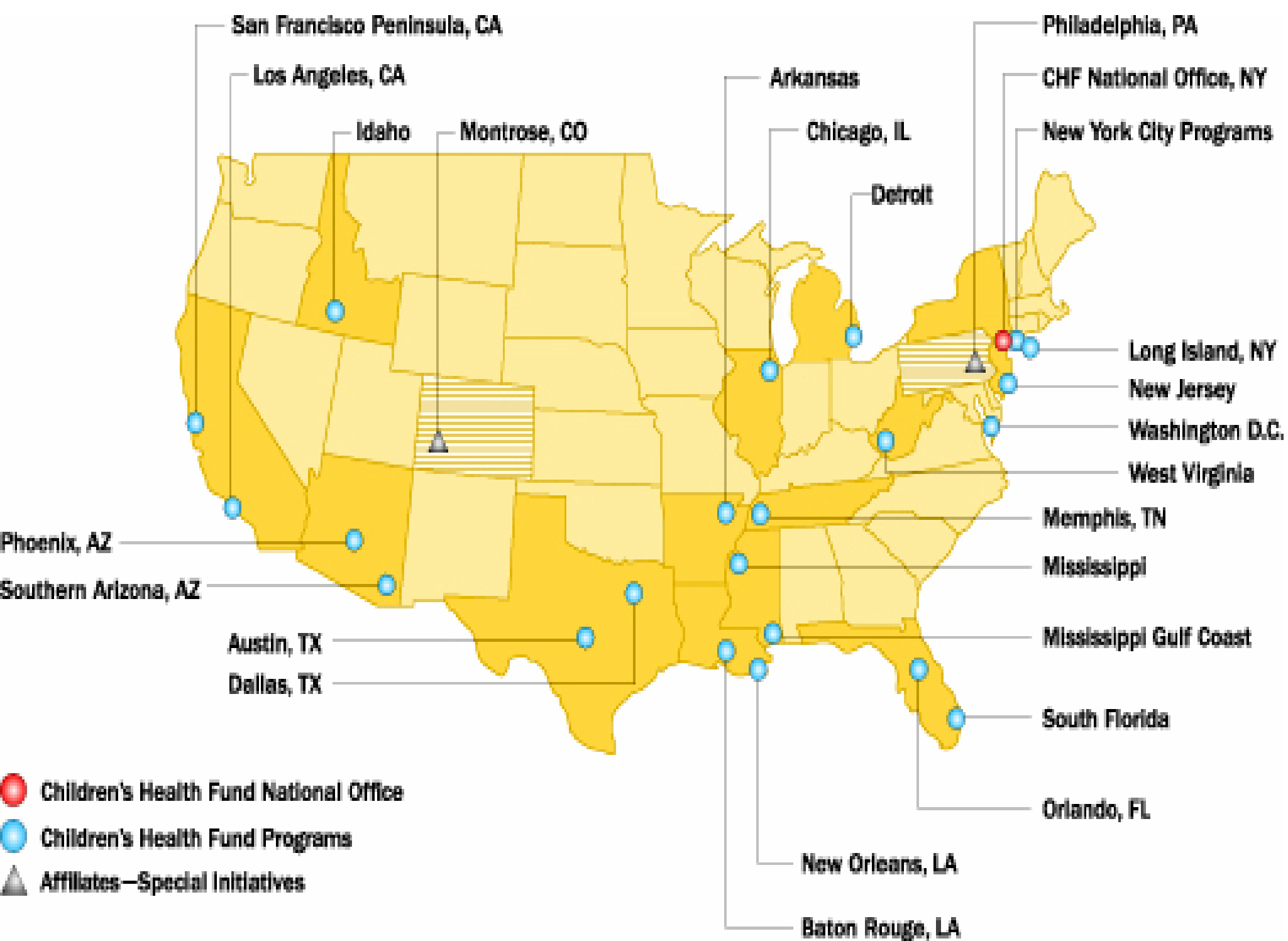
- High rate of psychosocial problems and toxic stress exposures
  - Domestic violence
  - Maternal depression
  - Unstable housing and homelessness
  - Foster care and kinship households
    - *Evans & English. Child Development. 2002.*
- Higher prevalence of chronic disease and emotional/behavioral problems
  - *Shonkoff, Boyce, McEwen. JAMA. 2009.*

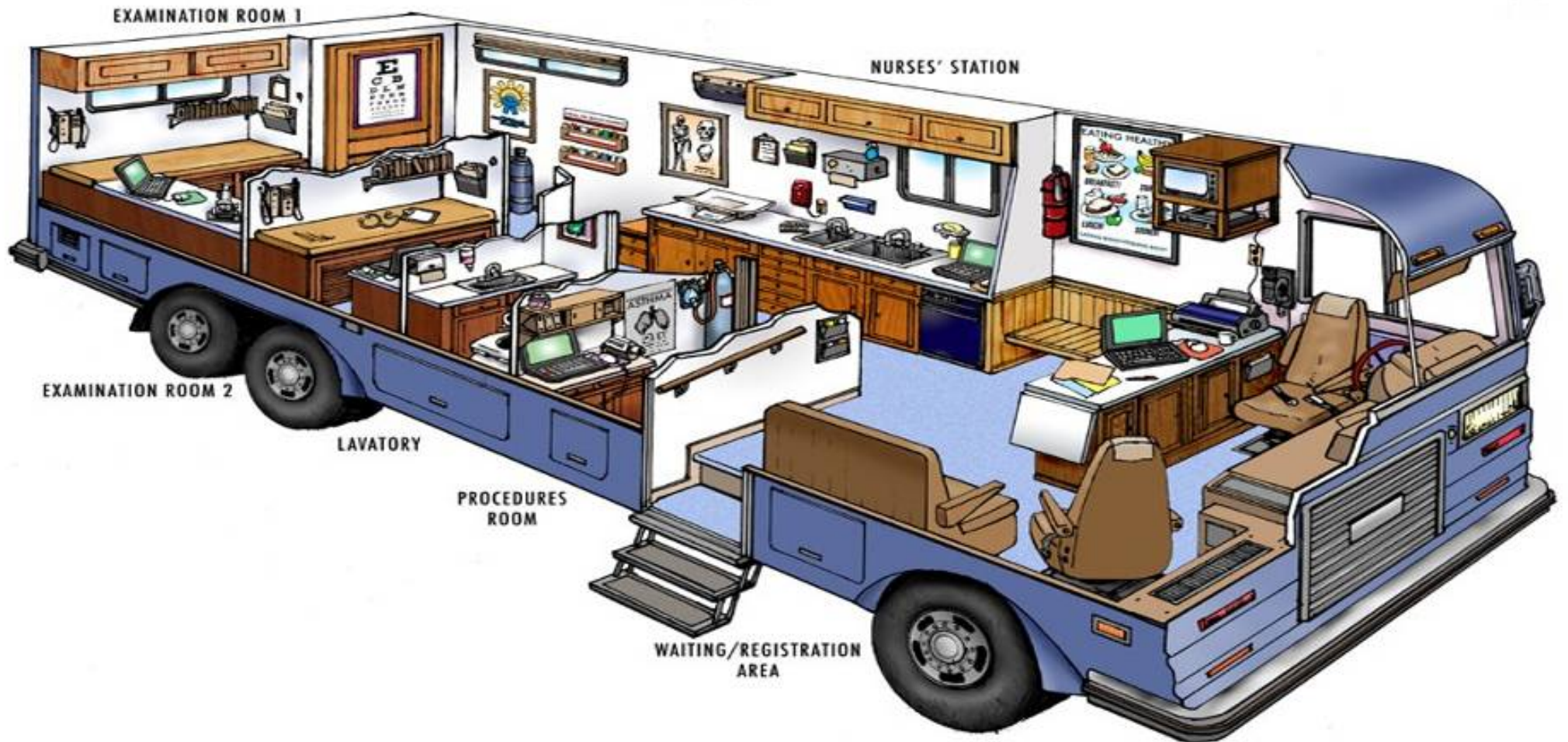
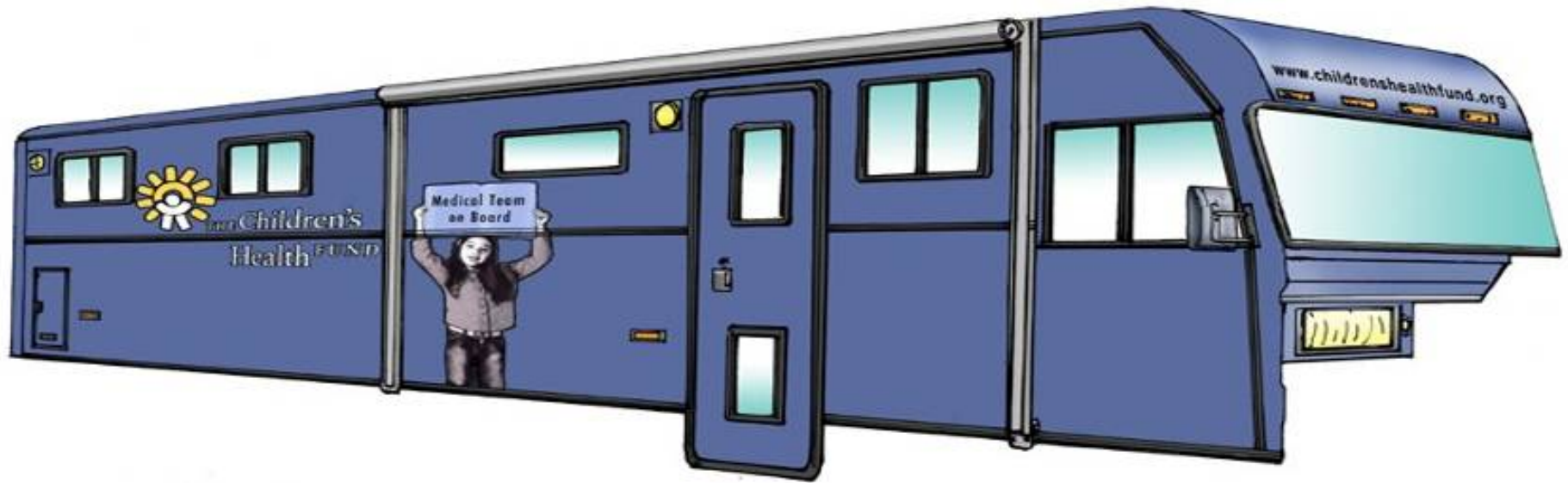
# Enhanced medical home in practice

- More time per patient than typical pediatric visit
- Focus on alleviating access barriers
- Integration of specialist services
  - Developmental screening & surveillance
  - Mental health screening and treatment
  - Oral health care
  - Tracking referral outcomes
- Health education
- Effective use of health information technology
- Evidence-based/informed protocols

# Setting: Children's Health Fund (CHF) National Network

- Network of 23 projects in 16 states serving inner city & rural poor, homeless, migrant, immigrant, and post-disaster pediatric populations
- Fleet of >50 mobile clinics providing medical, mental health and oral health care
- Each project affiliated with an academic or children's hospital, or (in rural areas) a federally qualified health center
- Nearly half provided care at schools





# Study design

- Two surveys of national network describing scope of practice in each project
- Responses from medical directors and program administrators
- Follow-up phone calls for clarification
- 100% response rate

# Results: exceeding AAP medical home standards

- **100%** saw patients regardless of ability to pay
- 

- **100%** maintained 24 hour / 7 day per week coverage by affiliation with academic medical centers or federally qualified health centers
- 

- **95%** saw walk-ins with same-day appointments
- 

- **84%** had formalized systems to track referrals and facilitate care coordination

- **80%** provided mental health screening and treatment
- 

- **79%** dispensed prescription and over-the-counter medications
- 

- **63%** provided nutrition counseling
- 

- **57%** used electronic health records
- 

- **42%** supplemented oral health screening with fluoride varnish

## In 2010, CHF national network projects provided

- **130,520** medical encounters
- **38,467** mental health and case management encounters
- **9,820** oral health encounters
- **8,884** nutrition encounters
- **56,687** health education encounters
- **33,720** community outreach encounters
  
- **2.25 million** encounters since 1987

# Asthma education materials: Highly visual, bi-lingual

## ASTHMA ACTION PLAN

Every child should have an asthma action plan!  
Your doctor will help you fill out this form.

|   |  |
|---|--|
| <p><b>PATIENT INFORMATION</b></p> <p>Patient _____</p> <p>Date of Birth _____ / _____ / _____</p> <p>Parent/Guardian _____</p> <p>Phone _____</p> | <p><b>DOCTOR OR NURSE PRACTITIONER INFORMATION</b></p> <p>Doctor _____</p> <p>Nurse Practitioner _____</p> <p>Date filled out _____ / _____ / _____</p> <p>Phone _____</p> |
|---|--|

CHILDHOOD ASTHMA INITIATIVE — ASTHMA ACTION PLAN


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**GO! GREEN ZONE**

Peak Flow: from \_\_\_\_\_ to \_\_\_\_\_

**You Have ALL of these.**

- Breathing is easy and good.
- No cough, wheeze or trouble sleeping.
- Energy level is normal.
- Peak Flow number is in your child's Green Zone.



**TAKE THESE MEDICINES EVERY DAY!**

| Medicine | How Much? | How Often |
|----------|-----------|-----------|
|          |           |           |
|          |           |           |
|          |           |           |

Comments \_\_\_\_\_


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**WARNING! YELLOW ZONE**

Peak Flow: from \_\_\_\_\_ to \_\_\_\_\_

**You have ANY of these.**

- Having trouble catching a breath.
- Coughing, day or night.
- Mild wheeze.
- Fatigue.
- Chest feels tight.
- Peak Flow number is in your child's Yellow Zone.



**TAKE GREEN AND YELLOW ZONE MEDICINES!**

| Medicine | How Much? | How Often |
|----------|-----------|-----------|
|          |           |           |
|          |           |           |
|          |           |           |

Comments \_\_\_\_\_


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**DANGER! RED ZONE**

Peak Flow: from \_\_\_\_\_ to \_\_\_\_\_

**GET HELP NOW!**

- Green and yellow zone medicines are not helping.
- Breathing is hard and fast. Can't catch a breath.
- Ribs may show when breathing in.
- Nose opens wide when breathing.
- Chest feels tight or hurts.
- May not be able to talk or walk well.
- Lips or fingernails may turn blue.
- Peak Flow number is in your child's Red Zone.



**TAKE RED ZONE MEDICINES & CALL A DOCTOR NOW!**

| Medicine | How Much? | How Often |
|----------|-----------|-----------|
|          |           |           |
|          |           |           |
|          |           |           |

Comments \_\_\_\_\_

Get **HELP** from a doctor or nurse practitioner **NOW!**  
Do **NOT** Wait! If you cannot reach the doctor, call 911 or go to an **EMERGENCY ROOM** right away.

Write down the triggers that make your asthma worse: \_\_\_\_\_

Developed by the Childhood Asthma Initiative with the support of the Picower Foundation

# COMMON ALLERGY & ASTHMA MEDICINES

Use all medicine as directed by your doctor or nurse practitioner

## ALLERGY MEDICINES



Rhinocourt Aqua



Nasonex



Flonase



Nasacort

## ASTHMA MEDICINES CONTROLLERS



Flovent 44/10



Pulmicort Inhaler



Pulmicort Respules



Qvar 40



Qvar 80



Advair Diskus



Singularair 4mg



Singularair 5mg



Singularair 10mg

## RELIEVERS



Albuterol



Albuterol Sulfate  
inh solution



Ventolin



Xopenex



Proventil

## RESCUE STEROIDS



Prelone Syrup



Orapred

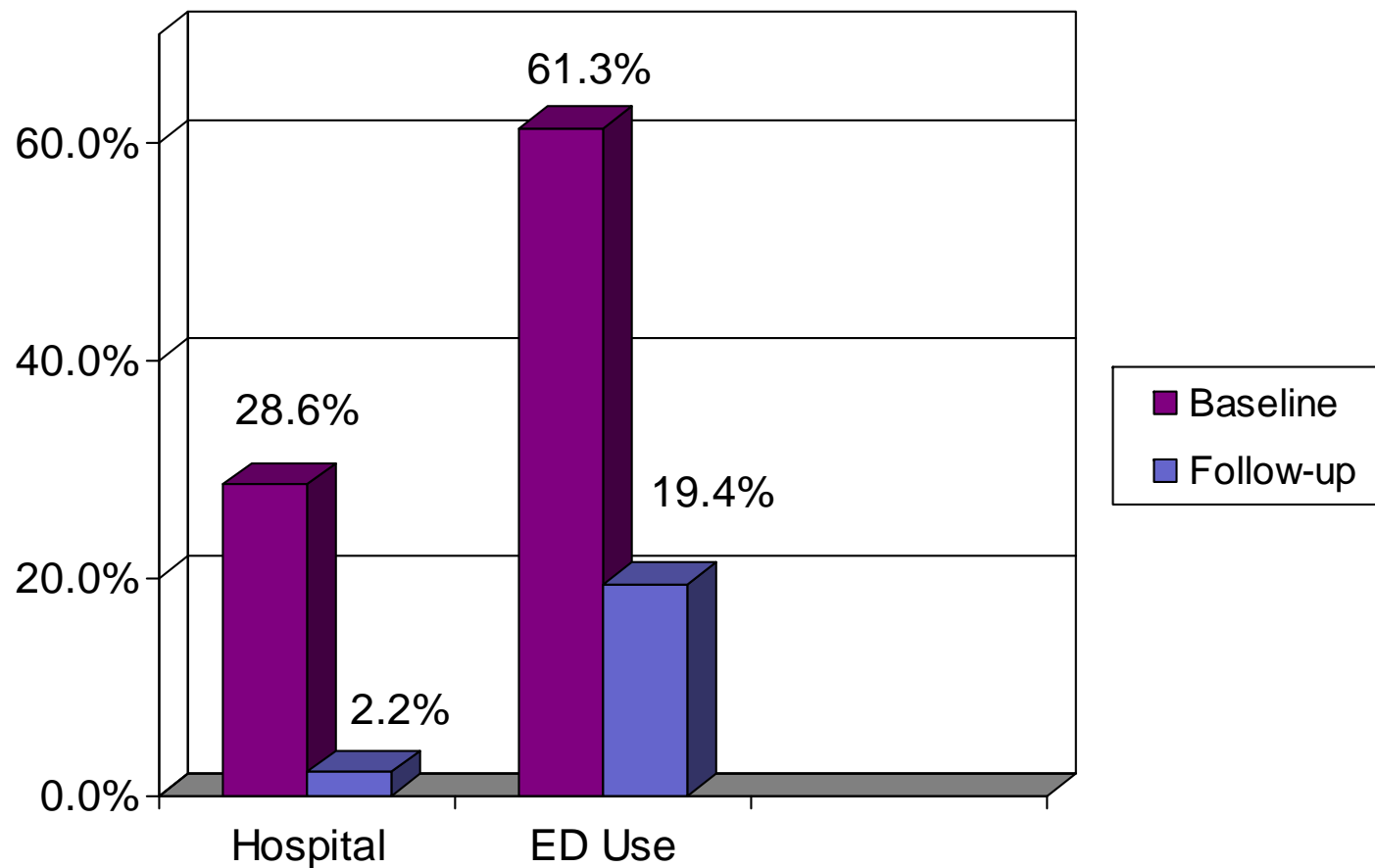


Prednisone

Photographs: Frederick Schang

# Value of integrating evidence-based asthma care

(% of pts with asthma)

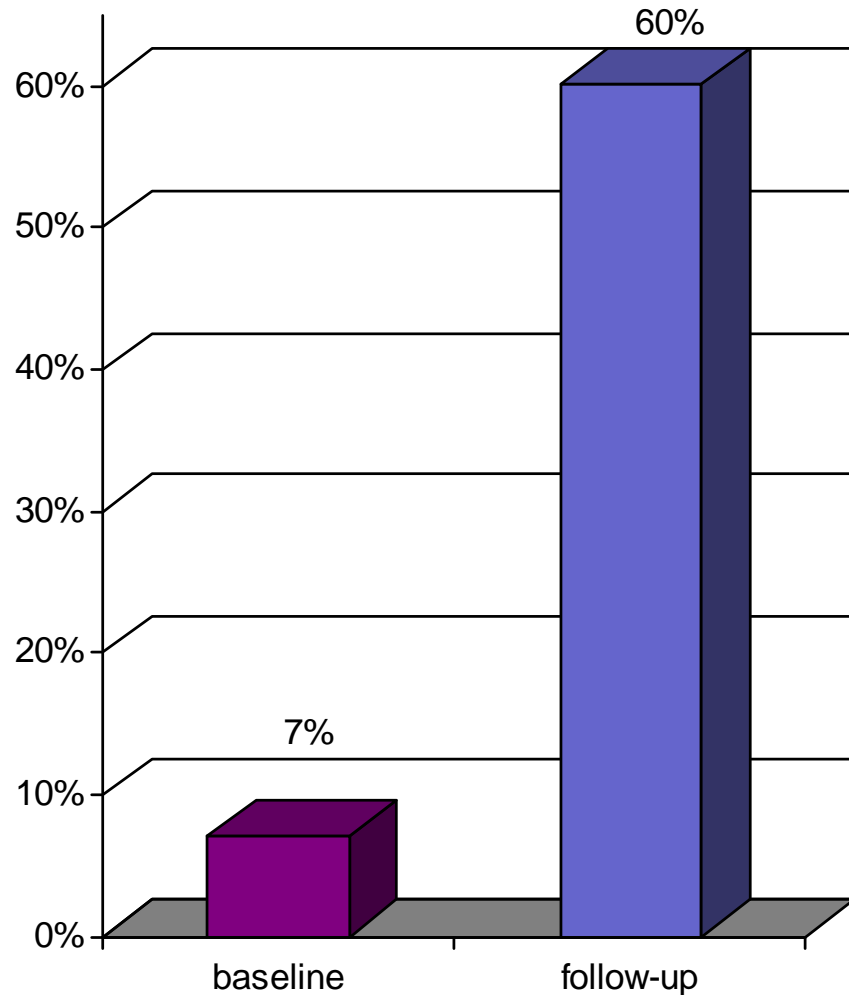


# Savings to the health care system

- Reduced ED visits @ \$500 average cost
- Reduced hospitalizations @ \$7,000 average cost
- Reduced cost per medically underserved inner-city pediatric patient with asthma per year = **\$4,525**
  - Calculation based on reduced percentage of hospital/ED users and reduced mean number of hospitalizations/ED visits per user at baseline compared to follow-up. Cost-of-illness economic model used with 2004 dollars not further adjusted for health care inflation.
- Grant, Bowen, Neidell, Prinz, Redlener. *J Health Care for Poor & Underserved*. 2010

# Impact of care coordination: Access to specialists

- Services included:
  - Reminders
  - Transportation
  - Facilitate scheduling
  - Navigational assistance at point of service



*Redlener, Grant & Krol. Advances in Pediatrics. 2005.*

# Conclusions

- First requirement of medical home: timely access to comprehensive services
- Alternative care models provide an enhanced medical home
  - Mobile medical clinics
  - School-based and school-linked clinics
- Quality and continuity of care are not compromised
  - Essential to maintain clinical and community linkages
- Cost-effectiveness of pediatric medical home model has been established -- for children with asthma
  - Willson CF. *N C Medical Journal*. 2005.

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