More Efficient Asthma Education During a Short Office Visit:

Results from the PACE Study

Michael D. Cabana, MD, MPH

San Francisco Asthma Network Forum
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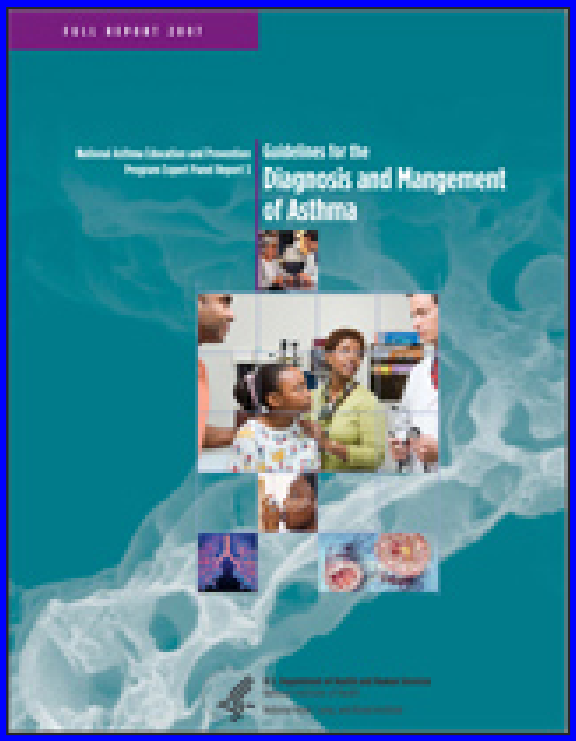
Department of Pediatrics, Epidemiology and Biostatistics and the Institute for Health Policy Studies, University of California, San Francisco (UCSF) *Funded by the Robert Wood Johnson Foundation (Princeton, NJ) and the National Institutes of Health (HL 070771)*

NIH Asthma Guidelines



- Measures of Assessment and Monitoring
- Control of Contributing Factors
- Pharmacologic Therapy
- Education for a Partnership in Asthma Care

Education for Partnership in Asthma Care

- The family will manage asthma on a daily basis
- The best management plan is not effective if the patient doesn’t adhere to the regimen
- Adherence is closely linked to clinician communication and patient education

Asthma Adherence Studies

Jonasson et al 2000	Inhaled budesonide Placebo by dose count		Adherence Adherence
Bender et al 2000	Inhaled steroid by child/mother report by canister weight by electronic doser		 Adherence Adherence Adherence

Asthma Adherence Studies

Jonasson et al 2000	Inhaled budesonide Placebo by dose count	48% 32%	Adherence Adherence
Bender et al 2000	Inhaled steroid by child/mother report by canister weight by electronic doser	 80% 69% 50%	 Adherence Adherence Adherence

Barriers to Effective Communication

ARTICLE

Barriers Pediatricians Face When Using Asthma Practice Guidelines

Michael D. Cabana, MD, MPH; Beth E. Ebel, MD; Lisa Cooper-Patrick, MD, MPH; Neil R. Powe, M

Objective: To
the 1997 Nati
(NHLBI) asthm

Methods: We
barriers to the
NHLBI guideli
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Participants:
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Nineteen (90%
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Results: We id
adherence. Typ
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Psychiatry (Dr Ra
Robert Wood Johns
Scholars Program
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(RI

ARTICLE

Reasons for Pediatrician Nonadherence to Asthma Guidelines

Michael D. Cabana, MD, MPH; Cynthia S. Rand, PhD; Oren J. Becher, MD; Haya R. Rubin, MD, PhD

Background: The 1997 National Heart, Lung, and Blood Institute (NHLBI) asthma guidelines include recommendations on how to improve the quality of care for asthma.

Objective: To identify barriers to physician adherence to the NHLBI guidelines.

Design: Cross-sectional survey.

Participants: A national random sample of 829 primary care pediatricians.

Main Outcome Measures: Self-reported adherence to 4 components of the NHLBI guidelines (steroid prescription, instructing peak flow meter use, screening and counseling patients with asthma for smoking, and screening and counseling parents for smoking). We also collected information on physician demographics, practice characteristics, and possible barriers to adherence. We defined adherence as following a guideline component more than 90% of the time.

Results: The response rate was 55% (456/829). Most of the responding pediatricians were aware of the guidelines (88%) and reported having access to a copy of the guidelines (81%). Self-reported rates of adherence were between 39% and 53% for the guideline components. After controlling for demographics and other barriers, we found that nonadherence was associated with specific barriers for each guideline component: for corticosteroid prescription, lack of agreement (odds ratio [OR], 6.8; 95% confidence interval [CI], 3.2-14.4); for peak flow meter use, lack of self-efficacy (OR, 3.4; 95% CI, 1.9-6.1) and lack of outcome expectancy (OR, 4.7; 95% CI, 2.5-8.9); and for screening and counseling of patients and parents for smoking, lack of self-efficacy (OR, 3.8; 95% CI, 1.7-6.2 and OR, 2.8; 95% CI, 1.3-5.9, respectively).

Conclusions: Although pediatricians in this sample were aware of the NHLBI guidelines, a variety of barriers precluded their successful use. To improve NHLBI guideline adherence, tailored interventions that address the barriers characteristic of a given guideline component need to be implemented.

Arch Pediatr Adolesc Med. 2001;155:1057-1062

From the Departments of Pediatrics (Drs Cabana and Becher), Medicine (Drs Rubin and Rand), and Psychiatry (Dr Rand), and the Robert Wood Johnson Clinical Scholars Program (Drs Cabana and Rubin), Johns Hopkins School of Medicine; and the Department of Health Policy and Management, Johns Hopkins School of Hygiene and Public Health (Dr Rubin), Baltimore, Md. Dr Cabana is currently affiliated with the Child Health Evaluation and Research Unit at the Division of General Pediatrics, University of Michigan Health System, Ann Arbor.

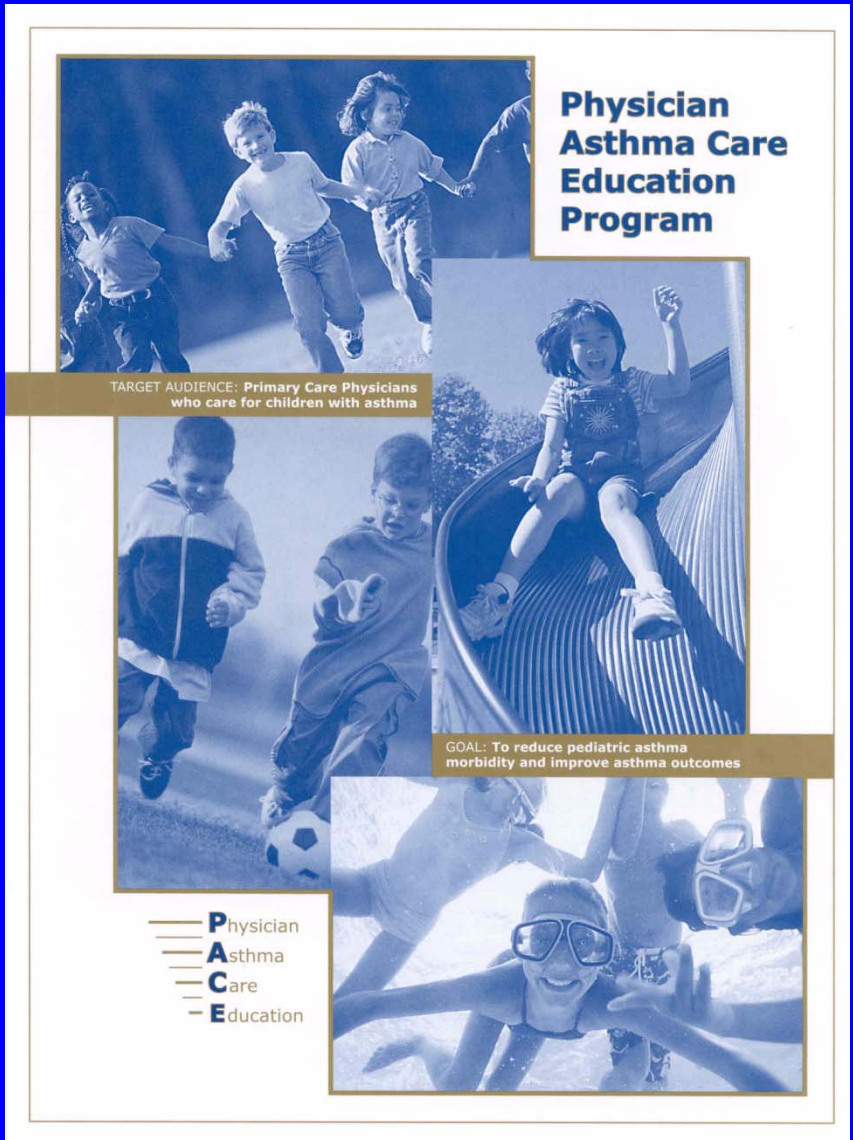
THE 1997 National Heart, Lung, and Blood Institute (NHLBI) guidelines for the diagnosis and management of asthma are intended to "bridge the gap between current knowledge and practice"[1(p1)] and improve the quality of care for asthma. Although physician guideline adherence is crucial in translating evidence-based recommendations into improved outcomes, poor adherence is well documented.[2-6]

Previous studies have noted barriers to physician adherence to the guidelines, such as poor attitudes about and lack of familiarity or agreement with the NHLBI guidelines.[7-10] Additional hypothesized barriers include economic disincentives, patient noncompliance, and inadequate time or resources.[11,12] Focus groups suggest that physicians encounter different barriers to using different components of asthma guidelines.[13]

Finkelstein et al[2] surveyed 429 primary care physicians and noted that despite widespread guideline awareness there was still poor adherence, as demonstrated by underuse of written asthma action plans and follow-up visits. Although lack of guideline awareness did not seem to be a barrier to adherence, "remaining barriers may prevent their full adoption."[2]

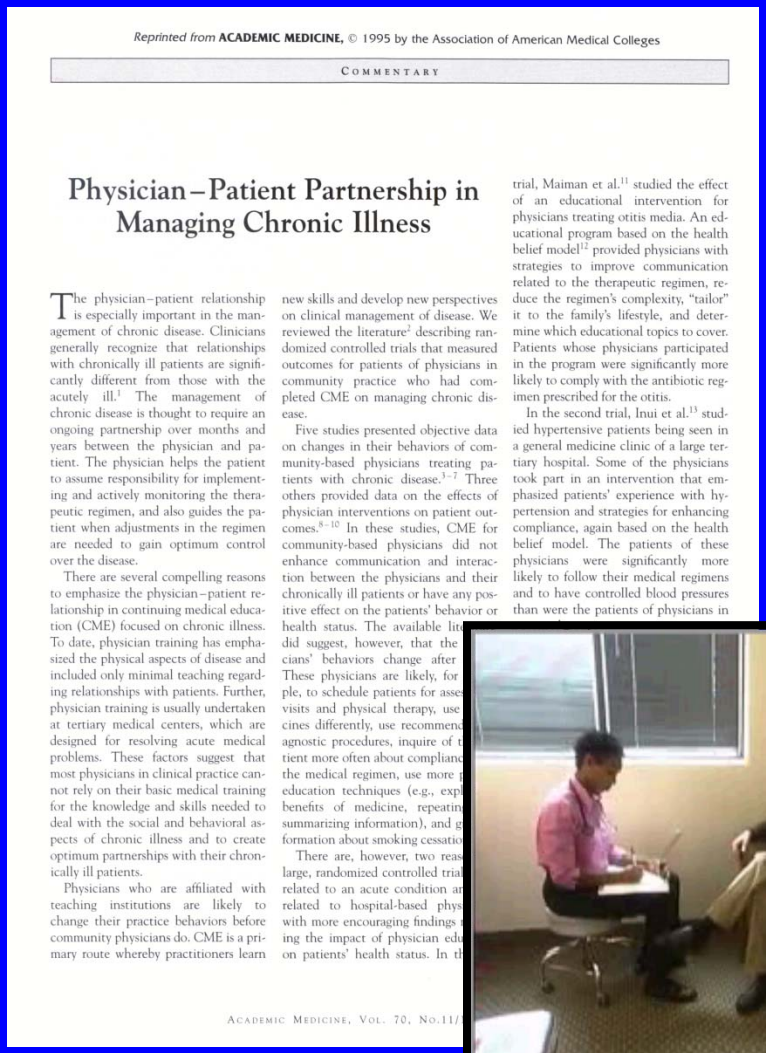
The purpose of this study was to measure barriers, not including lack of awareness, that affect knowledge, attitudes, and adherence to 4 different components of the NHLBI asthma guidelines. By understanding which barriers are associated with different guideline components, strategies can be identified to improve physician guideline adoption and thus improve pediatric asthma care.

- Visit time is limited
- Providers have multiple tasks to accomplish in a single visit
- Patients may have different beliefs, concerns and goals about the treatment plan



Overview

- Methods for Improving Communication
  - Utilizing a framework
  - Communication skills
  - Key messages
- Program Development
- Controlled Trial Results



COMMENTARY

Physician–Patient Partnership in Managing Chronic Illness

The physician–patient relationship is especially important in the management of chronic disease. Clinicians generally recognize that relationships with chronically ill patients are significantly different from those with the acutely ill.[1] The management of chronic disease is thought to require an ongoing partnership over months and years between the physician and patient. The physician helps the patient to assume responsibility for implementing and actively monitoring the therapeutic regimen, and also guides the patient when adjustments in the regimen are needed to gain optimum control over the disease.

There are several compelling reasons to emphasize the physician–patient relationship in continuing medical education (CME) focused on chronic illness. To date, physician training has emphasized the physical aspects of disease and included only minimal teaching regarding relationships with patients. Further, physician training is usually undertaken at tertiary medical centers, which are designed for resolving acute medical problems. These factors suggest that most physicians in clinical practice cannot rely on their basic medical training for the knowledge and skills needed to deal with the social and behavioral aspects of chronic illness and to create optimum partnerships with their chronically ill patients.

Physicians who are affiliated with teaching institutions are likely to change their practice behaviors before community physicians do. CME is a primary route whereby practitioners learn new skills and develop new perspectives on clinical management of disease. We reviewed the literature[2] describing randomized controlled trials that measured outcomes for patients of physicians in community practice who had completed CME on managing chronic disease.

Five studies presented objective data on changes in their behaviors of community-based physicians treating patients with chronic disease.[3–7] Three others provided data on the effects of physician interventions on patient outcomes.[8–10] In these studies, CME for community-based physicians did not enhance communication and interaction between the physicians and their chronically ill patients or have any positive effect on the patients' behavior or health status. The available lit
did suggest, however, that the
cians' behaviors change after
These physicians are likely, for
ple, to schedule patients for asse
visits and physical therapy, use
cines differently, use recommen
agnostic procedures, inquire of t
tient more often about compliand
the medical regimen, use more
education techniques (e.g., exp
benefits of medicine, repeatin
summarizing information), and g
formation about smoking cessatio

There are, however, two reas
large, randomized controlled trial
related to an acute condition a
related to hospital-based phys
with more encouraging findings
ing the impact of physician edu
on patients' health status. In t

trial, Maiman et al.[11] studied the effect of an educational intervention for physicians treating otitis media. An educational program based on the health belief model[12] provided physicians with strategies to improve communication related to the therapeutic regimen, reduce the regimen's complexity, "tailor" it to the family's lifestyle, and determine which educational topics to cover. Patients whose physicians participated in the program were significantly more likely to comply with the antibiotic regimen prescribed for the otitis.

In the second trial, Inui et al.[13] studied hypertensive patients being seen in a general medicine clinic of a large tertiary hospital. Some of the physicians took part in an intervention that emphasized patients' experience with hypertension and strategies for enhancing compliance, again based on the health belief model. The patients of these physicians were significantly more likely to follow their medical regimens and to have controlled blood pressures than were the patients of physicians in

- Specific techniques have been shown to enhance physician communication

Strategies

- Non-verbal attentiveness
- Addressing immediate concerns
- Reassuring messages

GOAL/PURPOSE

- *Reassuring patients so they pay attention to what is being said.*

Strategies

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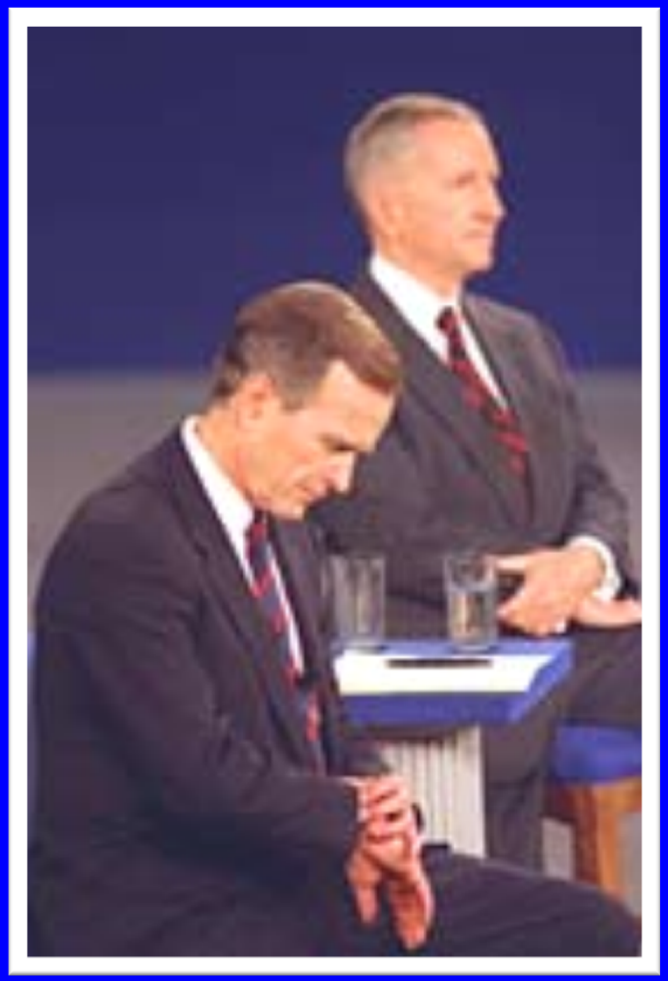
- Addressing immediate concerns
- Reassuring messages

GOAL/PURPOSE

- *Reassuring patients so they pay attention to what is being said.*

Second US Presidential Debate
October 15, 1992



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- *Reassuring patients so they pay attention to what is being said.*

Strategies

- Non-verbal attentiveness
- Addressing immediate concerns
- Reassuring messages

Strategies

- Interactive conversation
- Eliciting underlying fears

GOAL/PURPOSE

- *Improving the exchange of information needed for diagnosis and treatment decisions*

Strategies

- Interactive conversation
- Eliciting underlying fears

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informa
healthcare

Parents' Specific Concerns about Daily Asthma Medications for Children

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Specific concerns from 706 parents regarding their children's (M age = 8.0, SD = 3.9) use of daily asthma medications were systematically identified and organized. 270 (38.2%) of 706 parents expressed a total of 470 concerns (M = 1.74, SD = 0.93; Range 1–5), including concerns about side effects (48.9%; e.g., growth retardation); aspects of the regimen (29.3%; e.g., medication amount); and "steroid" use (10.4%). Independent predictors of parental concern included use of inhaled corticosteroids (OR = 1.60, 95% CI 1.07–2.40), nasal corticosteroids (OR = 1.70, 95% CI 1.21–2.38), and alternative therapies (OR = 1.84, 95% CI 1.32–2.56). Providers should be prepared to address a wide range of medication concerns, especially those related to side effects.

Keywords Medication concerns, children, asthma, parents, daily controller medications

INTRODUCTION

Daily inhaled corticosteroids are safe and effective in the control of pediatric asthma symptoms and, consequently, are emphasized in the NHLBI practice guidelines (1). Once prescribed, however, asthma treatment regimens can be effective

mostly unspecified medication concerns originally identified in chronically ill adult patients.

These studies do not provide a comprehensive look at the range and frequency of parents' asthma medication concerns, a necessary prerequisite for valid assessment of the

Fear/Concern	N	Examples of Parental Concerns
Concerns about susceptibility and need for medication	**6**	
Accuracy of asthma diagnosis (1)		*"Not asthma, but bronchitis"*
Necessity of medications (5)		*"Does she need it?"*
Cost and Convenience	**9**	
Concerns about ability to give medications	**19**	
Compliance of child to take medicine (9)		*"[Child] doesn't always remember to take it."*
'Steroid" concerns	**49**	*"The fact that it's a steroid."*
Concerns about the medication or medication regimen	**138**	
Duration of medication use (25)		*"Will he have to be on them all the time?*
Frequency of medication use (23)		*"He takes medicines too often."*
Amount of medication; too much (16)		*"Seemed like pretty severe medicine for daily use."*
Amount of medication; too little (3)		*"We should be looking at a more intense medicine."*
Side Effects	**233**	
Long-term or unknown (101)		*"Long term side effects. What are they?"*
Impact on height or growth (34)		*"When on [the medicine], she didn't grow"*
Hyperactivity, jitteriness (14)		*"He is jittery", "More hyper"*
Side effects, in general (12)		*"I am concerned about possible side-effects."*
Effect on lungs, pneumonia, respiratory infections (12)		*"Is it hurting her lungs?"*
Ambiguous	**16**	

Strategies

- Tailoring messages
- Planning for decision making
- Goal setting

GOAL/PURPOSE

- *Preparing patients to carry out the treatment at home*

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Asthma Action Plan Examples

Asthma Action Plan

Name	Date
Primary Care Provider	Medical Record #

Phone Numbers

Clinic: Day	Night/Weekend
Taxi or friend	
Pharmacy	

The colors of a traffic light will help you use your asthma medicines.

Green means **Go Zone!** Use preventive medicine.

Yellow means **Caution Zone!** Add quick-relief medicine.

Red means **Stop Zone!** Get help from a doctor.

Personal Best Peak Flow _____

GO — **ACTION:** Use these daily preventive anti-inflammatory medicines:

You have *all* of these:
- Breathing is good
- No cough or wheeze
- Sleep through the night
- Can work and play

Peak flow from _____ to _____

MEDICINE	HOW MUCH	HOW OFTEN
For asthma with exercise, take:		

CAUTION — **ACTION:** Continue with your medicine, as above, and **ADD**.

You have *any* of these:
- First signs of a cold
- Exposure to known trigger
- Cough
- Mild wheeze
- Tight chest
- Coughing at night

Peak flow from _____ to _____

MEDICINE	HOW MUCH	HOW OFTEN

Call your primary care provider.

DANGER — **ACTION:** Take these medicines until you talk to your doctor:

Get help from a doctor now! Do not be afraid of causing a fuss.
Your doctor will want to see you right away. It's important!

Your asthma is getting worse fast:
- Medicine is not helping
- Breathing is hard and fast
- Nose opens wide
- Ribs show
- Can't talk well

Peak flow below _____

MEDICINE	HOW MUCH	HOW OFTEN

If you cannot contact your doctor, go directly to the emergency room. DO NOT WAIT.
Call an ambulance (911) if necessary.

Make an appointment with your primary care provider within two days of an ER visit or hospitalization.

The City of New York Department of Health
Rudolph W. Giuliani, *Mayor* Neal L. Cohen, MD, *Commissioner*
Website: http://www.ci.nyc.ny.us/health

New York City Childhood Asthma Initiative
Adapted from the NHLBI
6/98

COPY FOR PATIENT

Plan de Acción para el Asma

Nombre	Fecha
Proveedor de atención primaria	# Récord médico

Números de teléfono

Clínica: Día	Noche/Fin de semana
Taxi o amigo	
Farmacia	

Los colores de un semáforo le ayudarán a usar sus medicinas para el asma.

Verde representa la **¡Zona de Proceder!** Use medicinas preventivas.

Amarillo representa la **¡Zona de Precaución!** Añada medicinas para alivio rápido.

Rojo significa la **¡Zona de Parar!** Busque inmediatamente ayuda de un médico.

Su mejor marca en el medidor de flujo de aire _____

PROCEDER — **ACCIÓN:** Use estas medicinas anti-inflamatorias preventivas diariamente.

Usted tiene *todos* estos:
- Respira bien
- No hay tos ni jadeo con pito
- Duerme toda la noche
- Puede trabajar y jugar

Flujo máximo de _____ a _____

MEDICINA	CUÁNTO	CADA CUANDO
Para el asma cuando practicas ejercicio, tome:		

PRECAUCIÓN — **ACCIÓN:** Continúe con su medicina como se indica arriba, y **AÑADA:**

Usted tiene *cualquiera* de estos:
- Las primeras señales de un resfriado
- Se ha expuesto a algo que provoca el asma
- Tos
- Jadeo leve/pito leve
- Pecho apretado
- Tos por la noche

Flujo máximo de _____ a _____

MEDICINA	CUÁNTO	CADA CUANDO

Llame a su proveedor de atención primaria.

PELIGRO — **ACCIÓN:** Tome estas medicinas hasta que hable con su médico.

¡Obtenga ayuda de un médico ahora mismo! No tenga miedo de causar un alboroto.
Su médico querrá verle inmediatamente. ¡Es importante!

Su asma empeora rápidamente:
- Las medicinas no ayudan
- Sus respiración es fuerte y rápido
- La nariz se abre ampliamente
- Puede ver sus costillas
- No puede hablar bien

Flujo máximo menor de _____

MEDICINA	CUÁNTO	CADA CUANDO

Si no se puede poner en contacto con su médico, vaya directamente a la sala de emergencia. NO ESPERE.
Llame a una ambulancia (911) si es necesario.

Haga una cita con su proveedor de atención primaria dentro de dos días a partir de una visita a la sala de emergencia o de una hospitalización.

Departamento de Salud de la Ciudad de Nueva York
Rudolph W. Giuliani, *Alcalde* Neal L. Cohen, MD, *Comisionado*
Sitio en la web: http://www.ci.nyc.ny.us/health

Iniciativa del Asma Infantil de la Ciudad de Nueva York
Adaptado del NHLBI
6/98

COPIA PARA EL PACIENTE

Strategies

- Tailoring messages
- Planning for decision making
- Goal setting

GOAL/PURPOSE

- *Preparing patients to carry out the treatment at home*

UCSF Department of Pediatrics

New Interns ~ Starting June 2011

Strategies

- Non-verbal encouragement
- Verbal praise

GOAL/PURPOSE

- *Building self confidence needed to carry out the plan.*

Several basic asthma concepts must be understood by patients if they are to use therapies successfully and control asthma triggers

Key Educational Messages

- Group important concepts into groups of 3 to 4 key messages
- Spread out the delivery of these groups of key messages over several visits
- Reinforce key messages over time
- Use the patient medical record to keep track of which messages have been delivered

Messages

Set #1

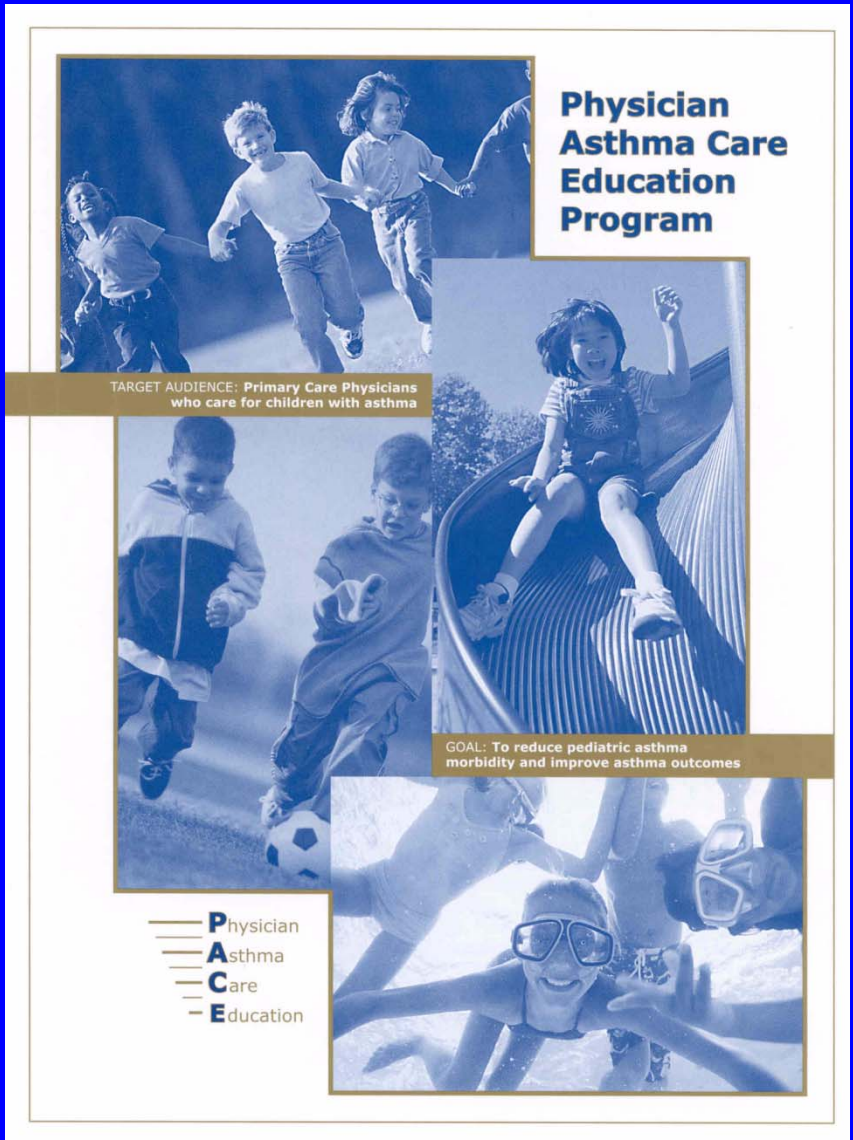
- What happens during an asthma attack
- How to take medicines
- How to respond to changes in asthma severity

Set #2

- Safety of medicines
- Goals of therapy
- Criteria for successful treatment

Set #3

- Managing asthma at school
- Identifying and avoiding triggers
- Sources of additional asthma education



Overview

- Methods for Improving Communication
  - Utilizing a framework
  - Communication skills
  - Key messages
- Program Development
- Controlled Trial Results

Program Format

- Target audience: Primary care providers
- Faculty: General pediatrician, asthma subspecialist, health educator and coding/billing expert
- Format: brief lectures, case studies, video modeling effective practices, and tools for self-evaluation and education
- Two 2.5 hour seminars one week apart

Session #1

Clinical Aspects of Asthma

Communication Techniques

One Week Apart

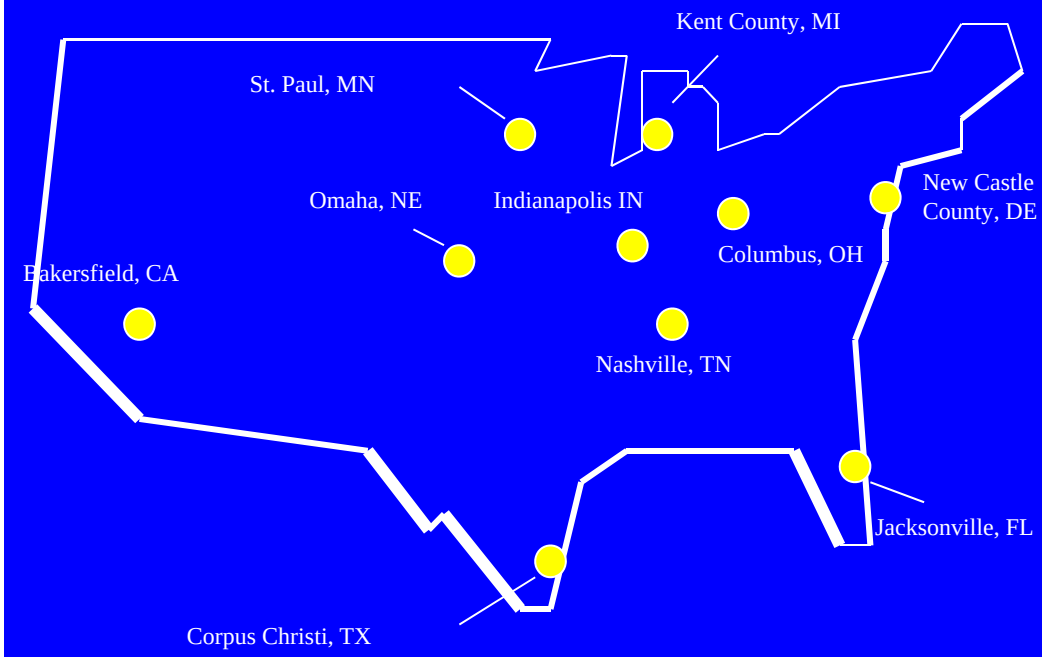
Session #2

Asthma Education Messages

Case Presentations

Documentation, Coding & Reimbursement

Methods



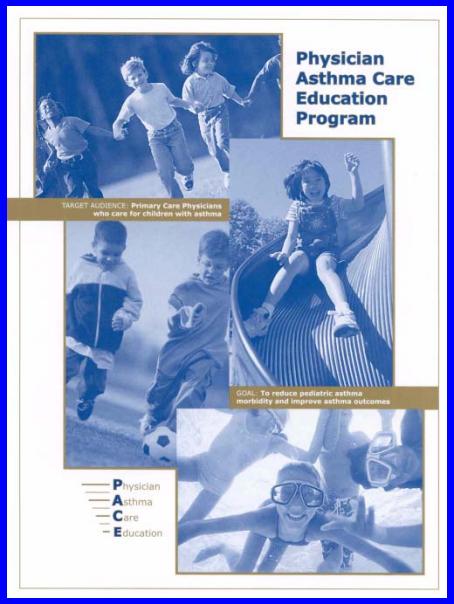
Design:
Randomized Controlled Trial in 10 sites in the United States

Randomization:
By site--to prevent contamination
10 sites matched into 5 pairs
- Population size
- Asthma prevalence
- Hispanic percentage
- African American percentage
- Climate

Subjects: Over 100 physicians with follow-up of 870 of their patients with asthma

Follow-up period: 1 year

Outcomes



Provider Confidence

Provider Counseling

Patient Symptoms

Asthma Healthcare Utilization

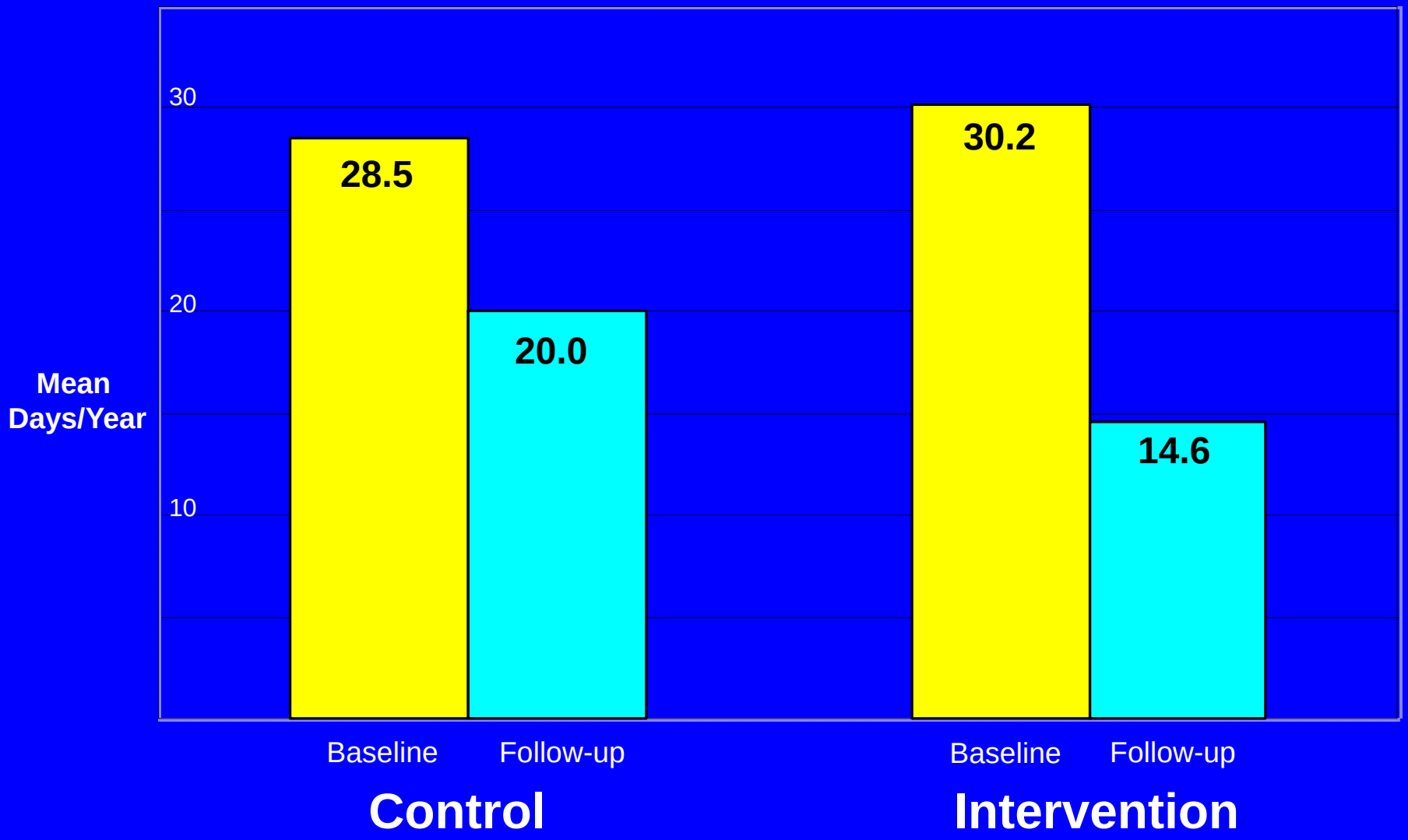
Self-administered physician questionnaires

Telephone interviews with parents of asthma patients. Healthcare utilization validated by chart audit.

Results

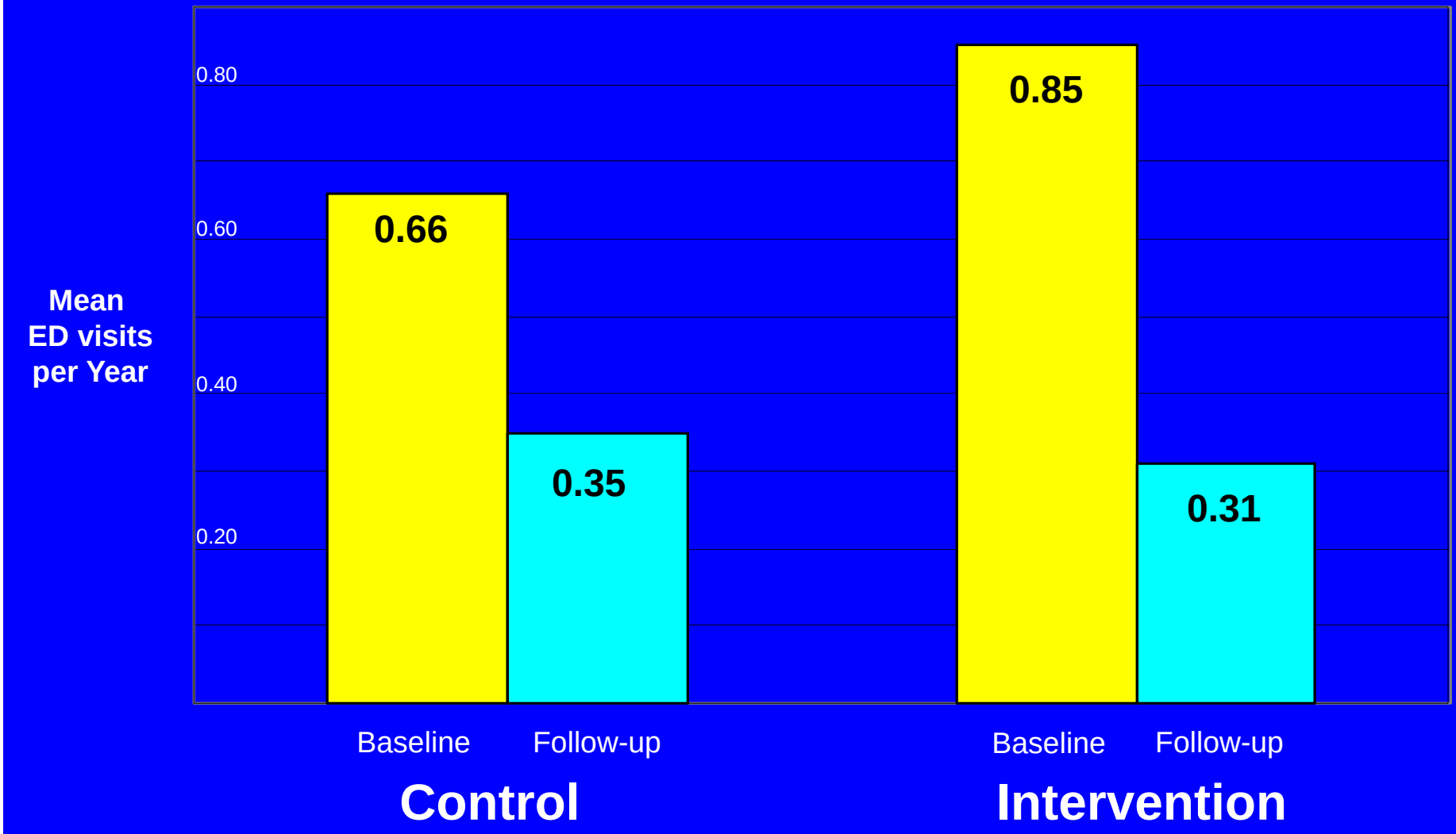
- 101 primary care providers participated
  - 48 control
  - 53 intervention
- Patients randomly selected
  - 870 of 1051 (83%) eligible parents interviewed
  - Median number of patients/provider = 7

Days Limited by Asthma Symptoms†



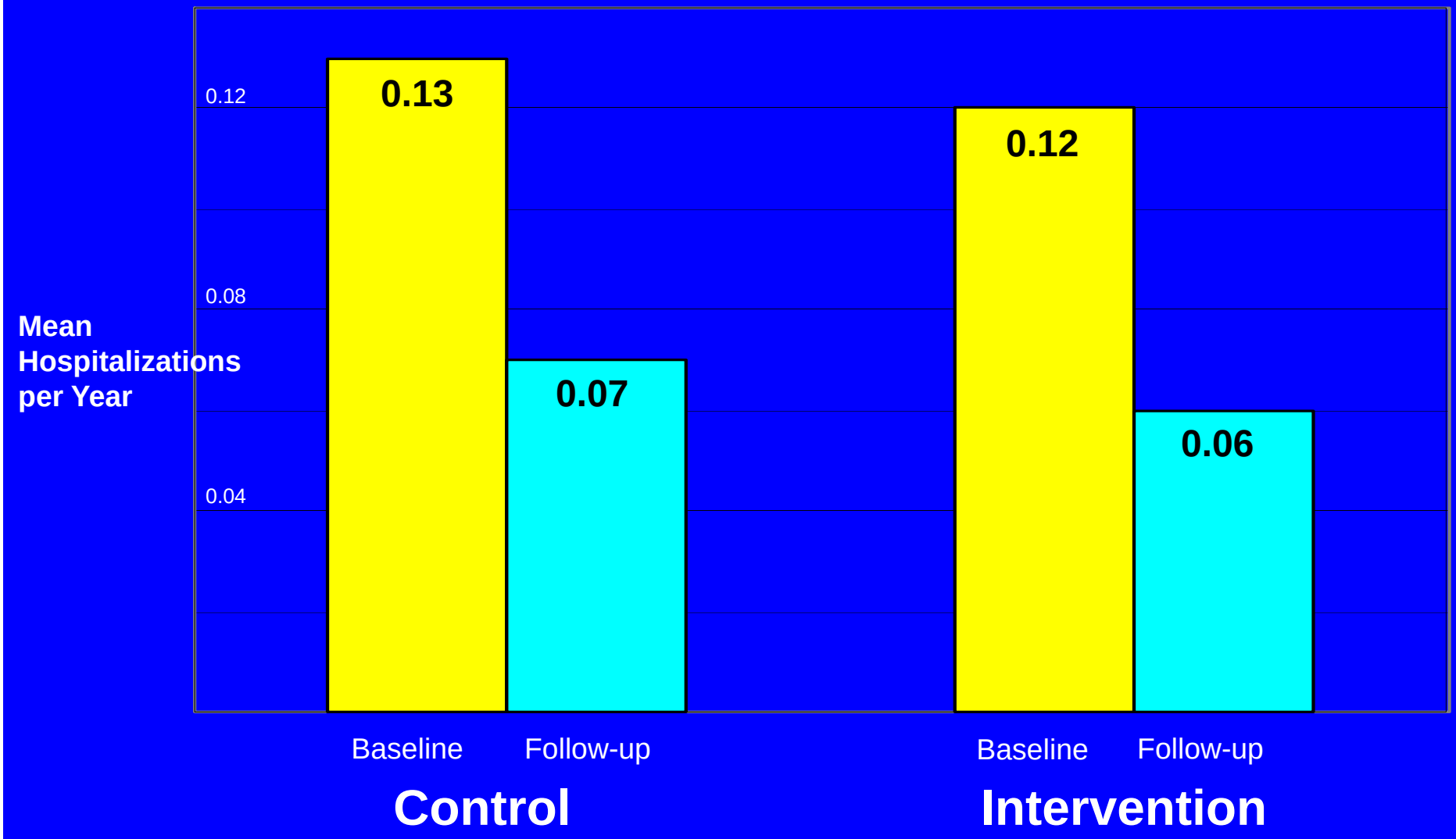
† $p < 0.05$; controlling for patient age, gender, severity of illness, tobacco exposure, insurance, baseline values and the interaction term for (group assignment) x (baseline value)

Emergency Department Utilization†

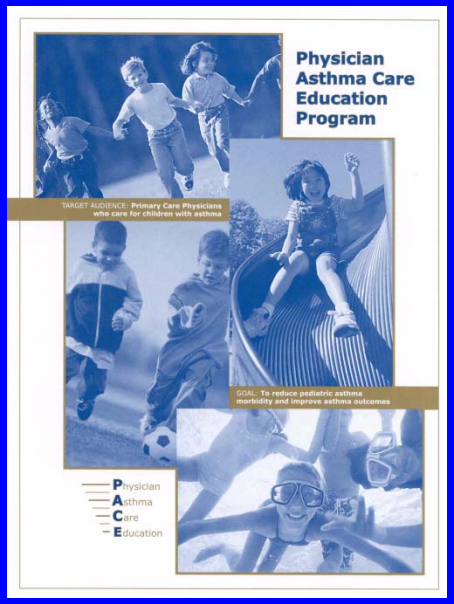


† $p < 0.05$; controlling for patient age, gender, severity of illness, tobacco exposure, insurance, baseline values and the interaction term for (group assignment) x (baseline value)

Inpatient Asthma Hospitalization



Outcomes



Provider Confidence

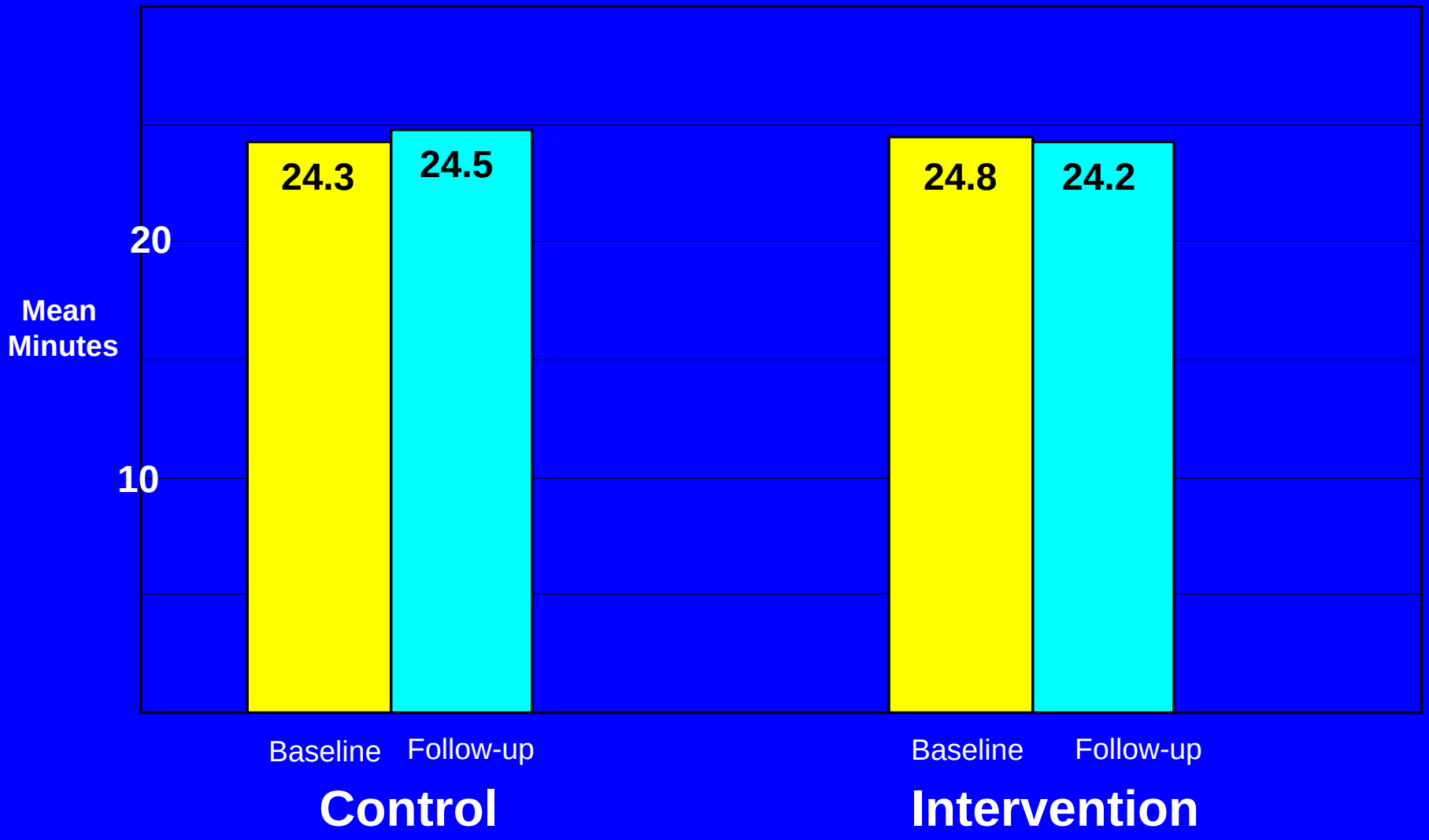
Provider Counseling

Increased Time for Patient Visit

Patient Symptoms

Asthma Healthcare Utilization

Physician-Reported Visit Length



Summary of Results

- The PACE seminar demonstrated improvement in
  - physician attitudes
  - communication behavior
  - patient outcomes
- Changes in communication do not necessarily require more time for a patient visit

Summary

- Adherence is an important barrier to achieving optimal asthma outcomes
- There are specific, evidence-based strategies to efficiently counsel patients
- Skills-based, interactive CME can be effective in improving physician adherence to guidelines

Collaborators

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