Asthma in Connecticut: Evidence-based Programs and Practices

Connecticut Department of Public Health

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Asthma Program
Asthma

- Is an obstructive, reversible, airway disease whose cause is unknown
- Can be fatal if not managed effectively
- Cannot be cured but it CAN be controlled
- Most common chronic disease of children
Asthma Prevalence

- Adult prevalence higher in New England (9.7%) than US (8.1%) during 2006
- In CT, adult prevalence increased from 7.8% in 2000 to 9.3% in 2006
- In 2005, 10.5% of children have asthma
- Priority populations: children, adult women, elderly, Hispanics, non-Hispanic Blacks, low SES, urban populations
Economic Impact

- Annually CT spends $47.3 million on hospitalizations
- Annually CT spends $13.4 million on ED visits
- Children with asthma miss an average of 7.6 days per school year compared to 2.5 days for non-asthmatic children
- Parents who stay home from work to care for asthmatic children lose an estimated $1.1 billion in income each year
Asthma Program Mission

- Reduce asthma associated morbidity
- Reduce asthma associated mortality
- Improve the quality-of-life for residents living with asthma
Triggers and action steps

**Triggers**
- Smoke, including secondhand smoke

**Action Steps**
- Do not allow smoking in the home, car or around children
- Quit if you smoke
Triggers and action steps

**Triggers**
- Dust mites

**Action Steps**
- Wash linens in hot water once a week
- cover mattresses & pillows in dust-proof covers
Triggers and action steps

Triggers

- Animal dander

Action Steps

- Keep pets outdoors or out of the bedroom and off of fabric furniture and carpets
Triggers and action steps

**Triggers**
- Pests (cockroaches, rodents)

**Action Steps**
- Store all food in airtight containers and clean all food crumbs and liquids right away
Desired Outcomes

- **Control** of symptoms
- Avoidance of asthma triggers
- Maintenance of normal activity levels
- Decrease in number of ED & hospitalizations
- Prevention of recurrent exacerbations
- Medications taken as prescribed
- Enhanced quality of life
The Keys to Control

- Objective assessment & monitoring
- Attention to environment & asthma triggers
- Proper use of medication
- Patient & family education
- Asthma Control Test
- Asthma Action Plan (written treatment plan)
Clinical Management of Asthma

Expert Panel Report 3
National Asthma Education and Prevention Program (NAEPP)
National Heart, Lung and Blood Institute, 2007

- Treatment recommendations based on:
  - Severity
  - Control
  - Responsiveness
- Provide patient self-management education
- Reduce exposure to inhaled indoor allergens to control asthma

Source: http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf
Interventions

• Consistent with “Best Practices” of the NAEPP Guidelines
INTERVENTIONS:

PEDIATRIC EASY BREATHING ©
A state-funded, regional program that trains pediatric providers in asthma diagnosis and medical management

Goals:

- Improve asthma recognition and determination of asthma severity
- Improve asthma management by primary care providers by increasing inhaled corticosteroid use and by the development of a written asthma treatment plan for every child with asthma
- Decrease asthma morbidity by decreasing the rates of ER visits, urgent care office visits and hospitalizations for asthma
4 Components

1. Survey is administered to all children seeking medical care to determine whether the child has asthma using clinical criteria.
2. For children with asthma, a provider assessment form aids providers in determining asthma severity.
3. A treatment “buffet” guides providers in choosing therapy appropriate for the patient’s asthma severity:
   - includes information about which drugs are covered by Medicaid and other MCOs
   - Drugs are grouped by equivalency and asthma severity
4. A field-tested treatment plan is given to the parent/patient that includes a daily, sick and emergency treatment plan.
Results

- Improved adherence to the NAEPP Guidelines for inhaled corticosteroid use by primary care providers to 98% compared to the national average of 20%
- The inhaled corticosteroid to bronchodilator ratio, a measure of the increased use of anti-inflammatory therapy to treat asthma in the community, has increased from 0.18 to 0.46.
  - increase in anti-inflammatory therapy has been associated with a significant decrease in the number of hospital days for children with asthma
Results

• Decrease in hospitalization
  – the number of hospital days per child per year decreased from 1.44 days/child in the year prior to implementing Easy Breathing to 0.42 days/child one year after implementing Easy Breathing (1999)
  – In the second year of enrollment, the number of hospital days further decreased to 0.19 days/child
  – This is compared to 0.12 hospital days/child/year for children without asthma in the community

• Decrease in ED visits
  – modest 30% decrease in ED utilization and a 3-fold reduction in oral corticosteroid use
Pediatric Easy Breathing©

- serve as a pay for performance model to be implemented by insurance payers since it has been evaluated and shown to provide a cost savings by reducing hospitalizations and ED visits
PUTTING ON AIRS
Putting on AIRS
(AIRS- Asthma Indoor Risk Strategies)

- CT developed In-home asthma program focusing on
  - patient/family self-management education
  - recognition and elimination/reduction of environmental and other asthma triggers

- Goal: to reduce asthma-related adverse events and improve asthma control
AIRS

- Implemented in six locations in the state
- All programs are conducted by local health districts (LHDs) using a regional approach
Target Population

- children 0-18 were the primary target, now all ages
- Referrals are received from clinicians, hospitals, school nurses, Medicaid MCOs, and self-referrals
AIRS

- Registered nurse, respiratory therapist or health educator
  - conducts a patient self-management education session, reviews medications, and follows or requests a written treatment plan from provider

- A registered sanitarian
  - conducts an environmental assessment of the home for asthma triggers and recommends how to reduce triggers
AIRS

- Follow-up
  - two weeks, three months, and six months
- During six-month follow-up
  - Patients were taught and able to demonstrate appropriate techniques of inhaler use on day of visit
  - could verbalize understanding of education provided
  - reported making one or more suggested environmental changes
Results

- **62% to 85%** reduction in asthma related emergency department visits, physician office visits, and school days missed.
  - ED visits declined by 85% (p=0.0009).
  - Asthma-related visits to physicians declined by 66% (p<0.0001).
  - Days of missed school or work due to asthma declined by 62% (p=0.0053).
  - The number of total events of all three types declined by 67% (p<0.0001).

- The analysis compares numbers of events during equal periods of time, from three to twelve months, before and after servicing of the family with the AIRS program.
Results

• Improvement in quality of life and a marked decrease in unscheduled acute care visits at 6 months following the home visit
• cost savings in health care expenditures
A Public Health Response to Asthma: Summary

• Asthma is a complex disease that is not yet preventable or curable.

• Asthma can be managed with medication, environmental changes, and behavior modifications.

• Evidence-based interventions shown to reduce ED visits and hospitalizations and improve quality of life
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QUESTIONS?

Thank you