

# Program Development, Implementation, and Evaluation

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AIR PREP COURSE  
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# The problem of chronic illness

133 million American live with at least one chronic illness



Causes 7 in 10 deaths each year in the United States

More than 75% of health care costs are due to chronic conditions

# The problem of chronic illness

“...it is not a question of knowing how to treat heart disease, diabetes or mental illness...we know how. We’re just not doing it. People are literally dying, waiting for the practice of medicine to catch up with medical knowledge. More than 57,000 people will die this year because there is a huge gap between what we know and what we do.” Margaret O’Kane (2003)

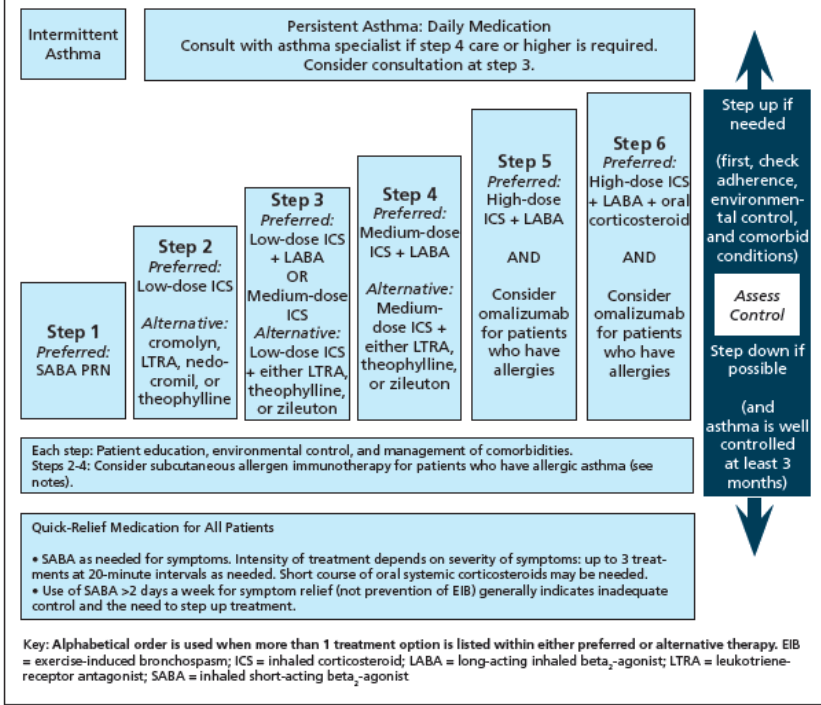
# The asthma care paradox



Our understanding of the pathogenesis of asthma has improved

Our understanding of the steps to control asthma has improved

FIGURE: STEPWISE APPROACH TO ASTHMA TREATMENT<sup>9</sup>



# The asthma care paradox



Our understanding of the pathogenesis of asthma has improved

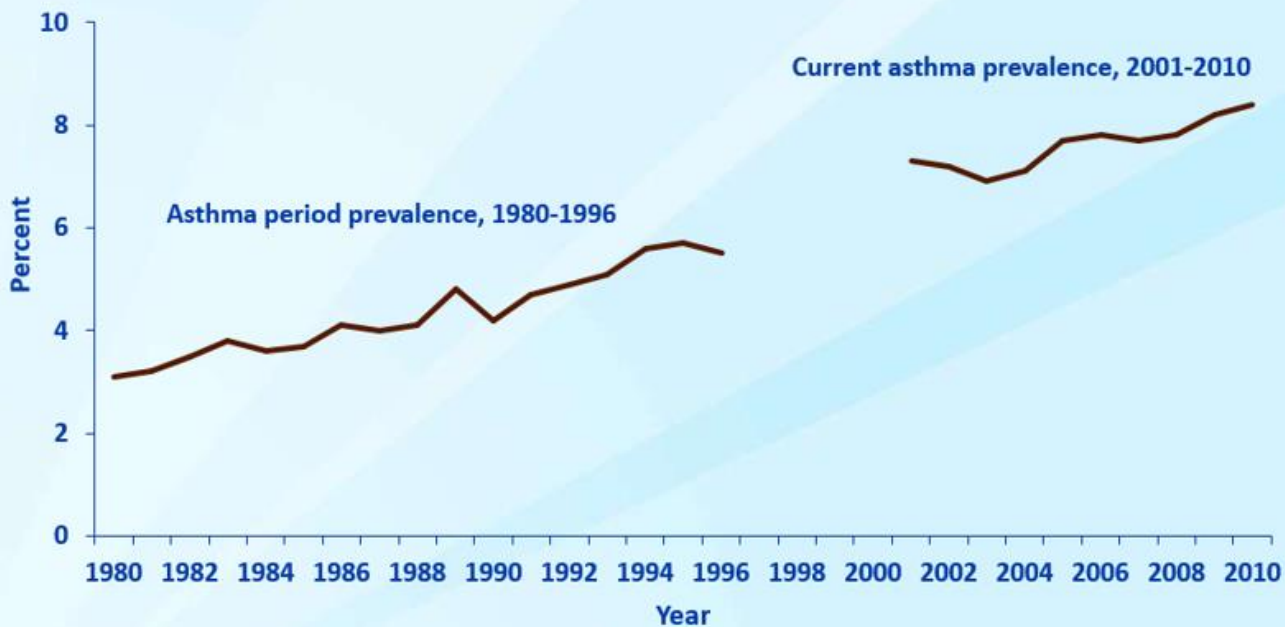
Our understanding of the steps to control asthma has improved

Morbidity and mortality from asthma around the world is still high

# The asthma care paradox



## Asthma Period Prevalence and Current Asthma Prevalence: United States, 1980-2010



The percentage of the U.S. population with asthma increased from 3.1% in 1980 to 5.5% in 1996 and 7.3% in 2001 to 8.4% in 2010.

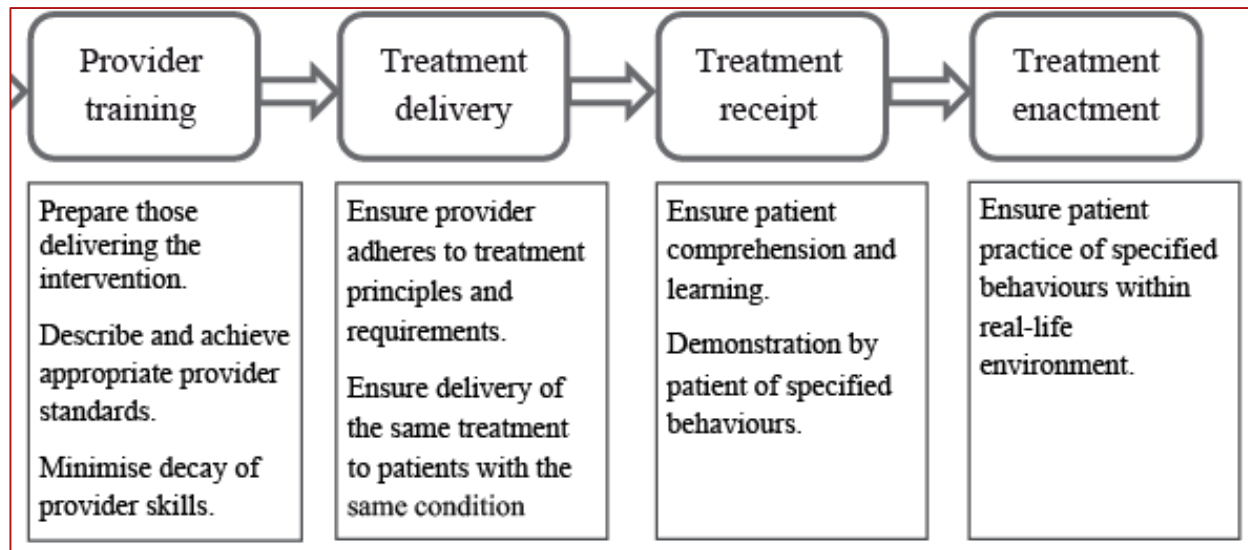
# Two possible explanations

Not recognizing the symptoms and/or seriousness of asthma



# Two possible explanations

There is a breakdown in either the delivery or the receiving of therapy

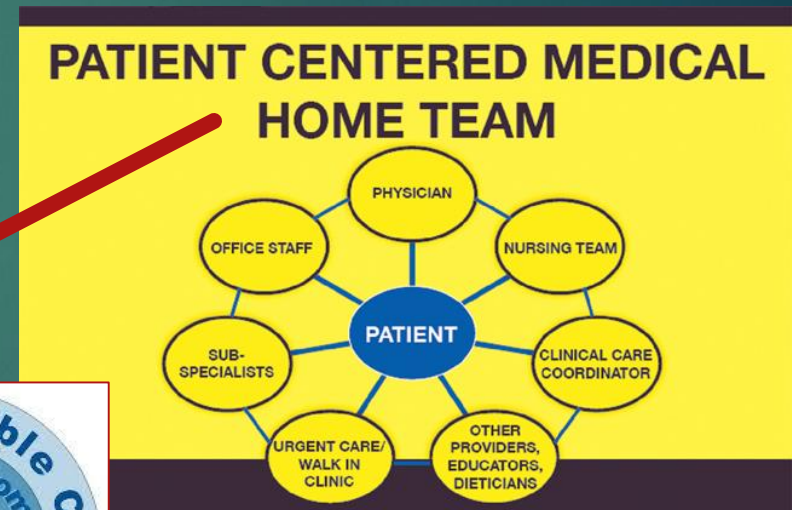
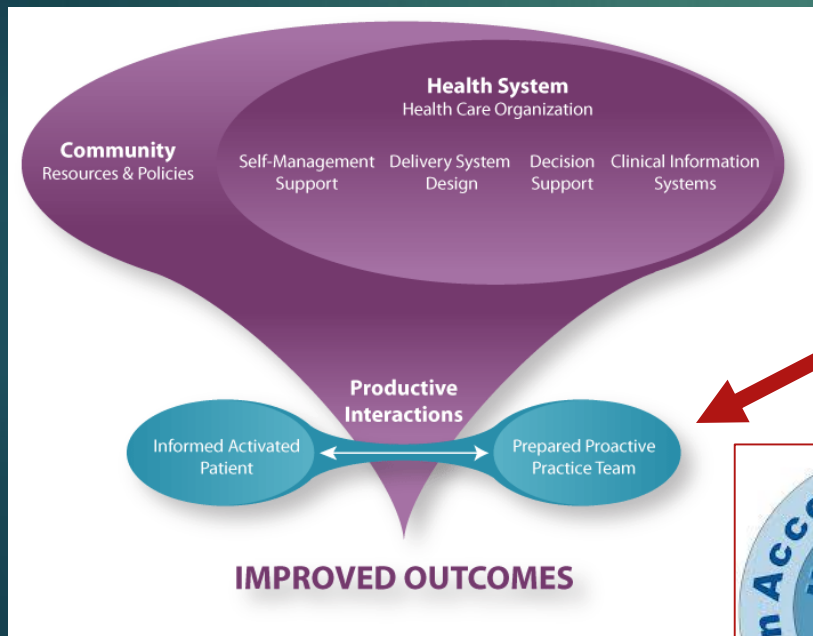




# Two possible solutions

## Chronic Care Model

## Patient-Centered Medical Home



# Two possible solutions

**A PCMH is a smaller version of the ACO – a primary physician strives to provide patients with better coordination of care, access to services, prevention, quality and safety within the practice**

**An ACO is larger and can serve a larger population of people– it looks to have multiple primary care providers and practices work together. In essence, an ACO is like a PCMH “neighborhood.”**



<b>IV. ORGANIZATIONAL ISSUES</b>	<b>5</b>	<b>10</b>	<b>3</b>	<b>18</b>
<b>A. Needs Assessment</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>
1. Identify outcome indicators				
2. Obtain information (e.g., methods, data sources) about the asthma population and healthcare providers				
3. Use findings to make recommendations				
<b>B. Program Development</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>5</b>
1. Identify resources e.g., <ul style="list-style-type: none"> <li>• funding</li> <li>• facilities</li> <li>• personnel</li> </ul>				
2. Prioritize program features based on resources and characteristics of the target population (e.g., asthma severity, risk factors)				
3. Compare evidence-based solutions to program needs				
4. Create goals of program and specific objectives to meet those goals				
5. Select teaching methods and settings that will best meet objectives for the target population				
<b>C. Program Implementation</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>
1. Ensure safety and privacy of individuals with asthma e.g., x HIPAA x OSHA x infection control				
2. Maintain a program database				
3. Coordinate training for program staff				
<b>D. Program Evaluation</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>4</b>
1. Select validated program evaluation tools				
2. Assess program processes e.g., <ul style="list-style-type: none"> <li>• adherence (e.g., attendance, diary completion) of participant</li> <li>• the influence of the program on participants' knowledge, skills, and / or attitudes (e.g., confidence, outcome expectations)</li> <li>• procedure and task implementation</li> </ul>				
3. Assess program outcomes e.g., <ul style="list-style-type: none"> <li>• key outcomes (e.g., quality-of-life, functional status, asthma control, healthcare utilization, participant satisfaction)</li> <li>• measures for key program outcomes</li> <li>• program effectiveness</li> </ul>				
4. Use findings to assess program impact and need for modifications				



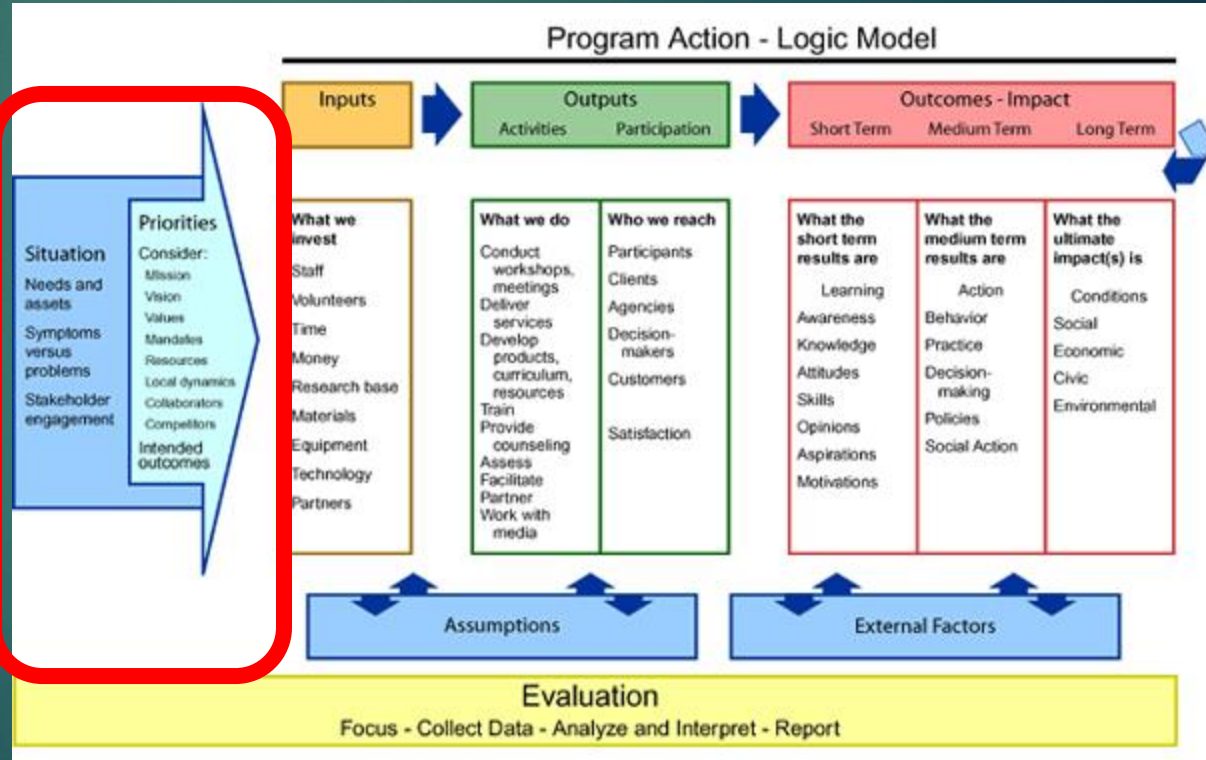
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1. Identify outcome indicators				
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3. Use findings to make recommendations				

# Needs Assessment



# Needs assessment

A Needs assessment



# Needs assessment

Figure2

## Strategic flow for an asthma plan

### Generic Asthma Plan - to be adjusted for local and national needs

Purpose: to promote health, support people with asthma!

#### Background

- ▶ **NEW BODY OF KNOWLEDGE**
  - Disability caused by asthma can be prevented
- ▶ **EPIDEMIOLOGY**
  - Morbidity ↑
  - Prevalence ↑
- ▶ **ECONOMY**
  - Costs ↑
- ▶ **EVIDENCE**
  - Implementation of best practice is highly cost-effective both on the patient and societal levels

- ▶ **CONCLUSIONS**
  - Public health problem
  - Need for broad consensus
  - Need for action
  - Identification of key stakeholders
  - Focus on patients
  - Focus on severe asthma to stop exacerb/attacks
  - Focus on effective use of available resources and registers

#### 1-Step Action Plan

- ▶ **STRATEGIC CHOICES**
  - Practical action plan, not a consensus report
  - Strategies for: 1) those diseased, 2) general population
  - Quantitative and qualitative goals
  - Focus on primary health care and outpatients services
  - Promotion of **asthma health**
  - Asthma Control Tools for **guided self-management** to stop exacerb/attacks
  - Search for critical mass for change through education and counselling

- ▶ **GOALS, MEASURES**
  - 1-3 key messages for the public
  - 3-5 numerical goals for Health Care to reduce the burden
  - Tools to be used locally
  - Measures to follow outcomes
  - Time lines

- ▶ **ACTIVITIES**
  - Leadership, steering group (local, national)
  - Capacity building, funding
  - New internet-based networking with specialists, GPs, nurses, pharmacists
  - In diagnostic work, improving early detection
  - In treatment, improving effective use of ICS
  - Education and publicity (with NGOs)
  - Legislation (essential medication, anti-smoking)
  - Feedback, follow-up

Process evaluation

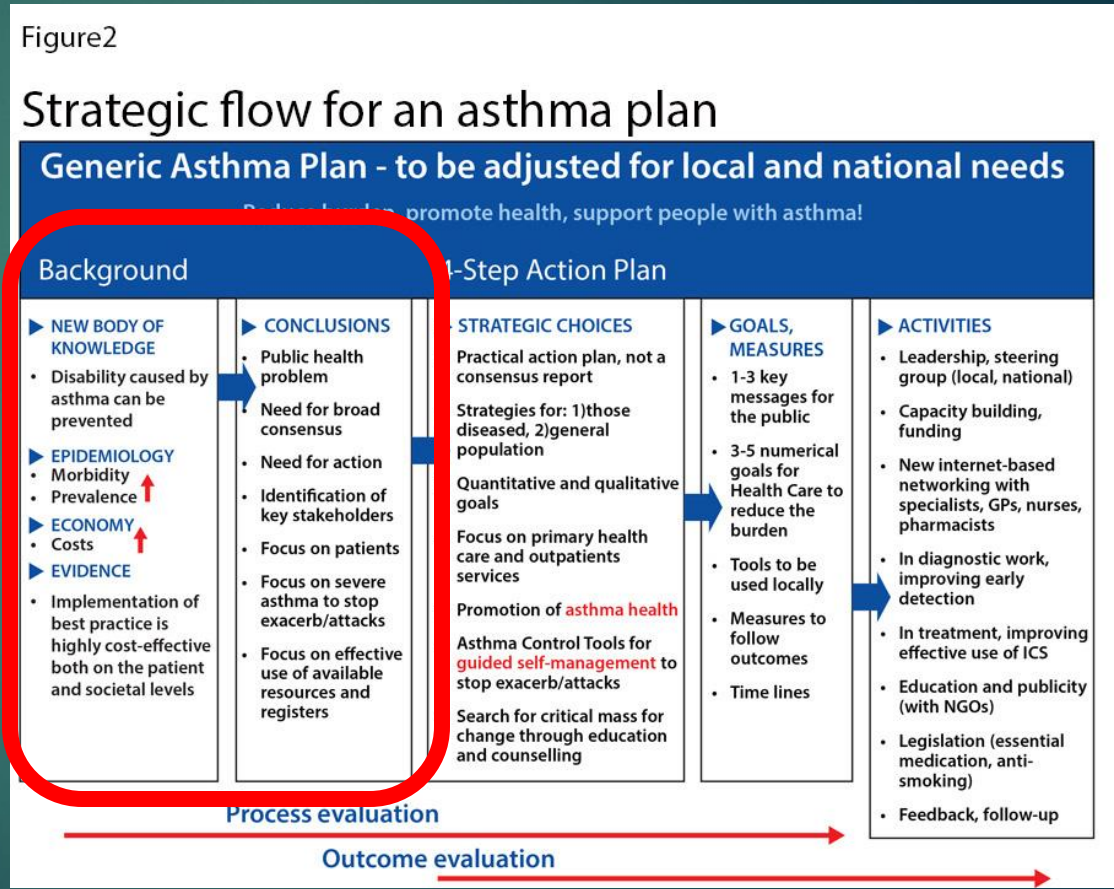
Outcome evaluation

A Needs assessment

# Needs assessment

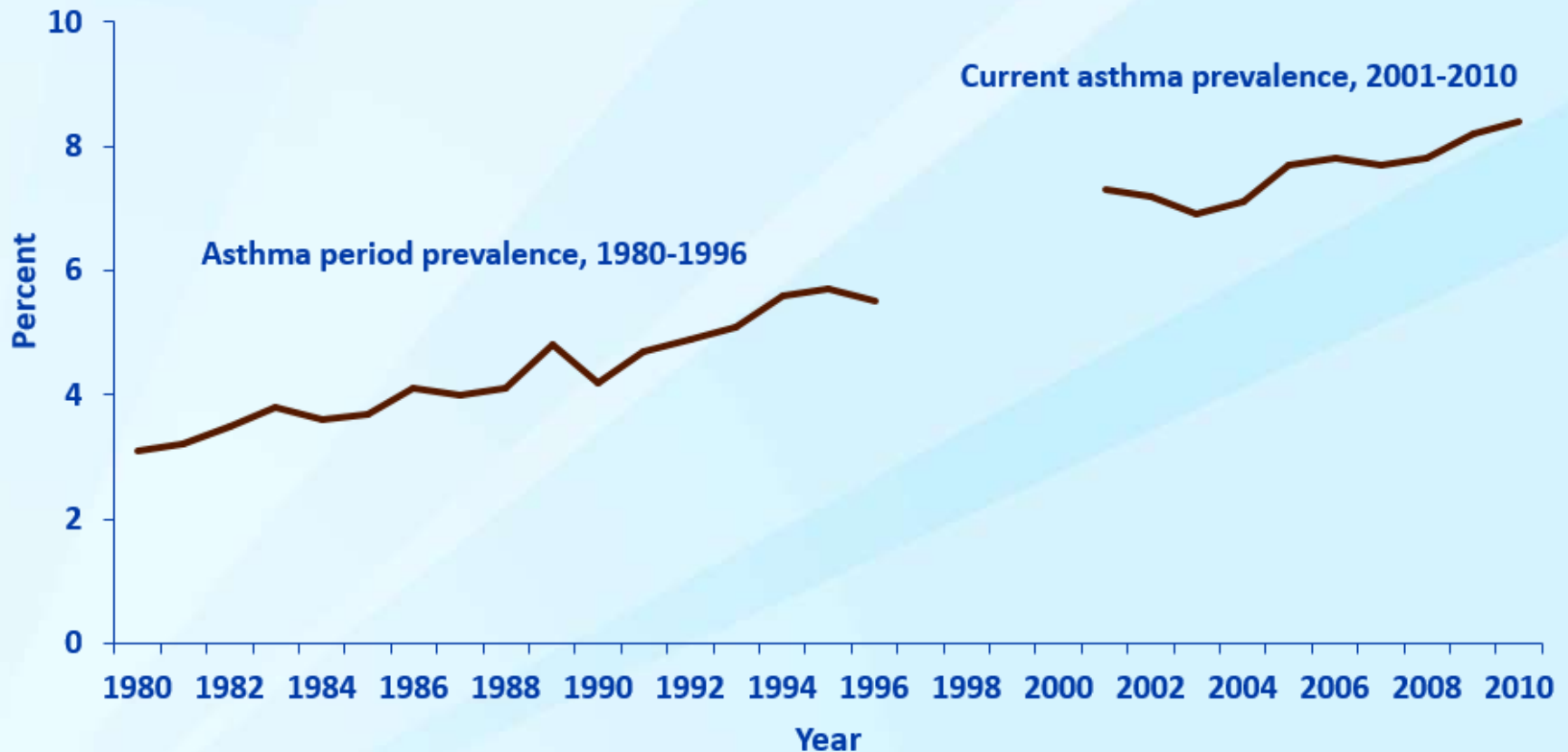
## Outcome indicators

- Prevalence of asthma
- Missed work/school days
- ED visits
- Hospitalizations
- Deaths
- Health care costs
- Lost productivity costs



# Needs assessment

## The asthma population

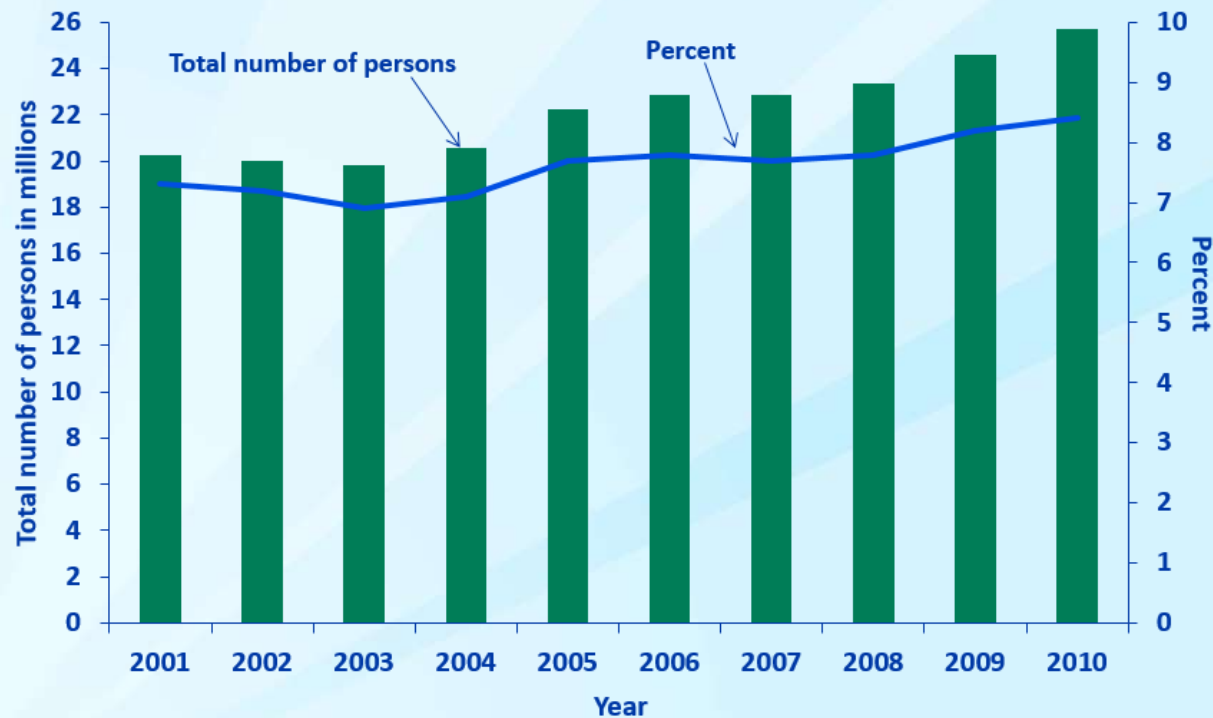




# Needs assessment

## The asthma population

**Current Asthma Prevalence: United States, 2001-2010**

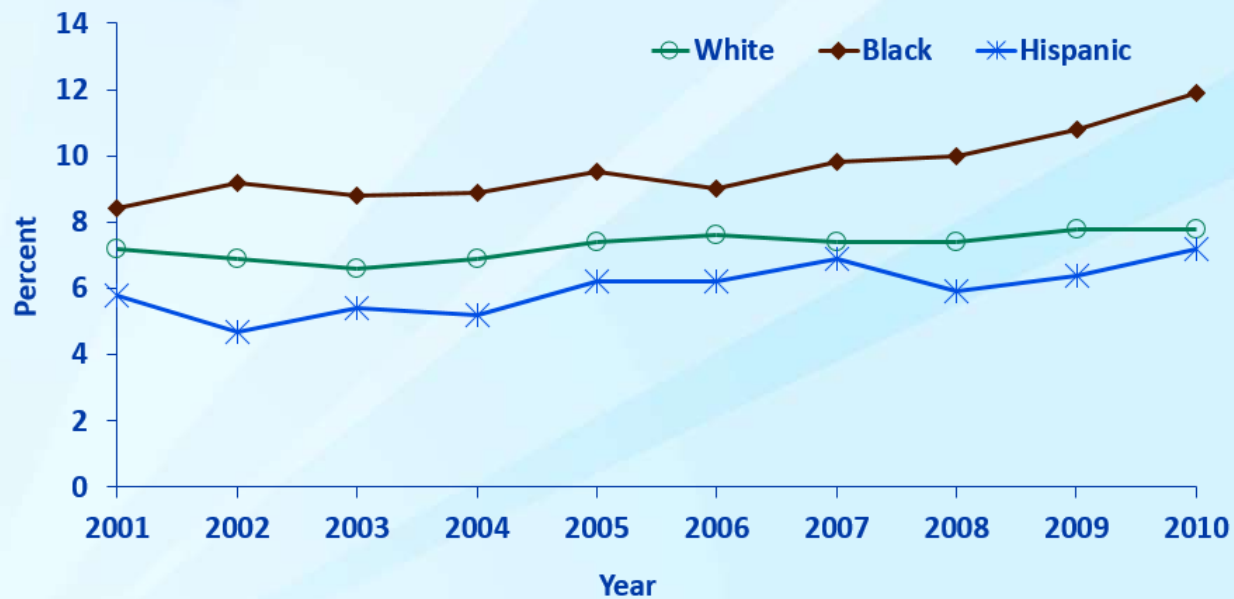


One in 12 people (about 26 million, or 8% of the U.S. population) had asthma in 2010, compared with 1 in 14 (about 20 million, or 7%) in 2001.

# Needs assessment

## The asthma population

**Current Asthma Prevalence by Race and Ethnicity:  
United States, 2001-2010**

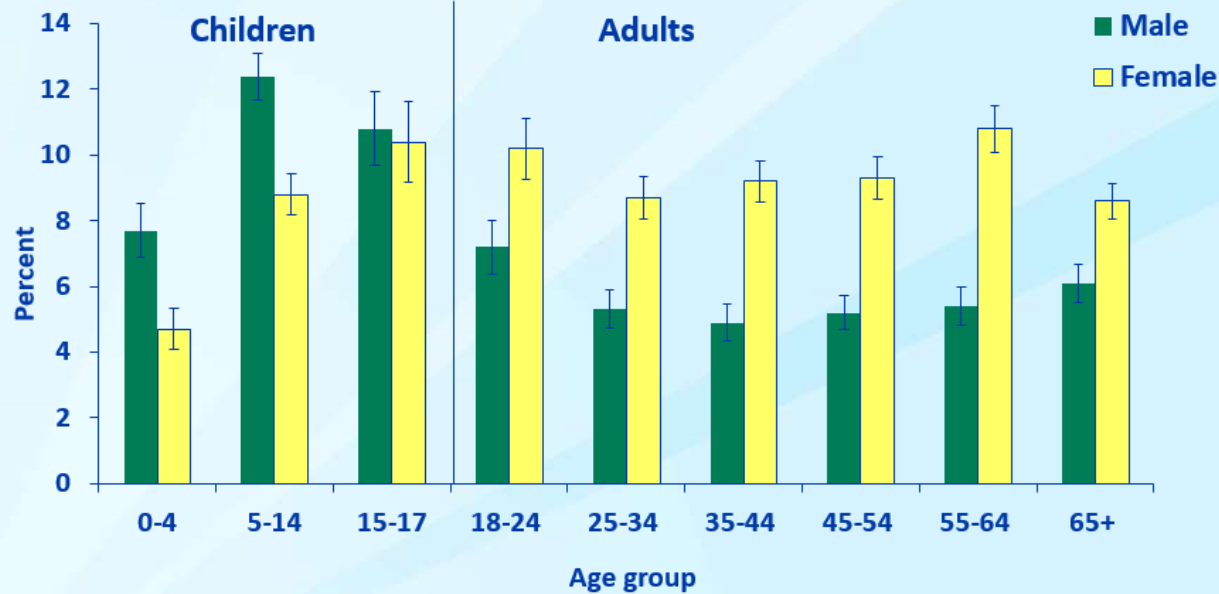


Blacks are more likely to have asthma than both Whites and Hispanics.

# Needs assessment

## The asthma population

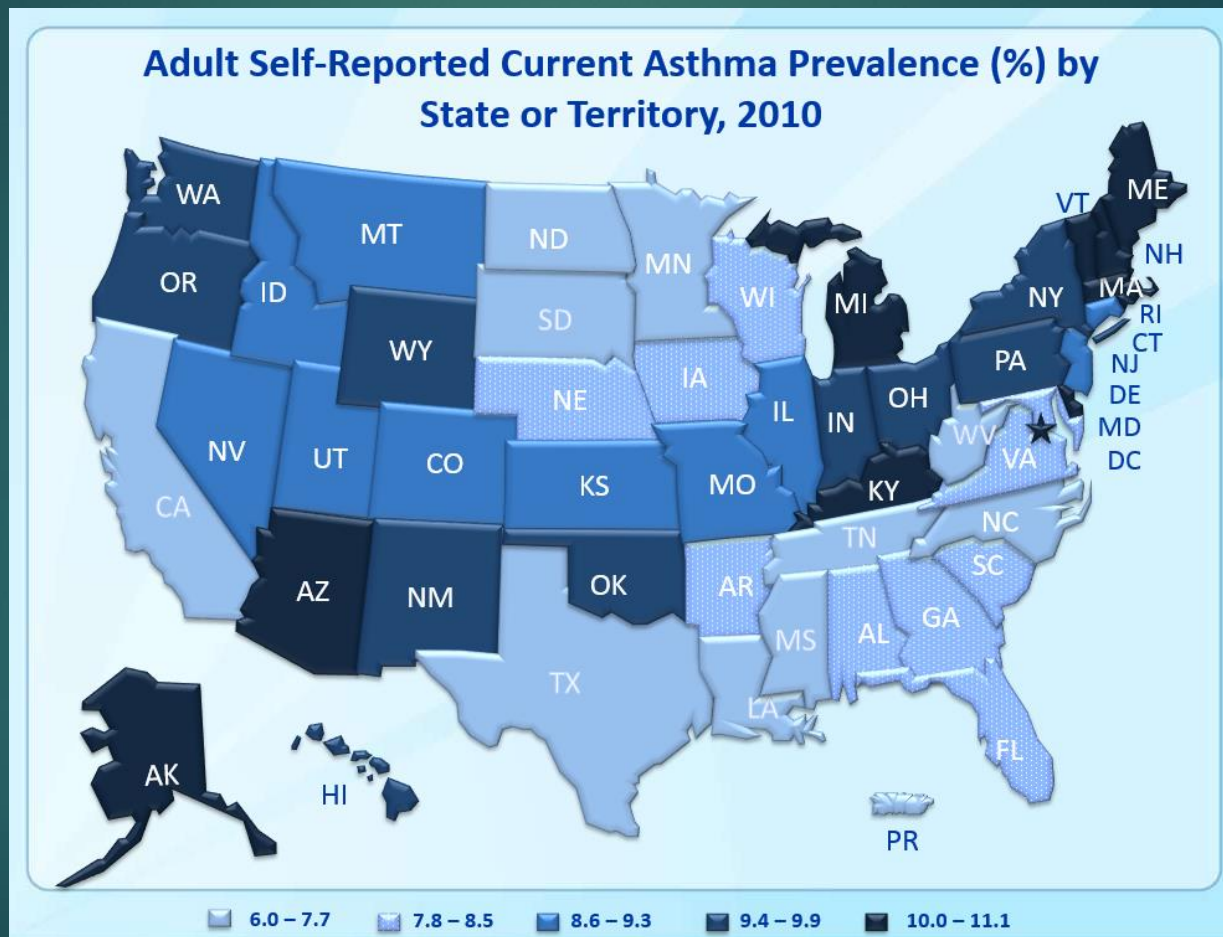
**Child and Adult Current Asthma Prevalence by Age and Sex:  
United States, 2006-2010**



Among children aged 0-14, boys were more likely than girls to have asthma.  
Boys and girls aged 15-17 years had asthma at the same rate.  
Among adults women were more likely than men to have asthma.

# Needs assessment

## The asthma population



# Needs assessment

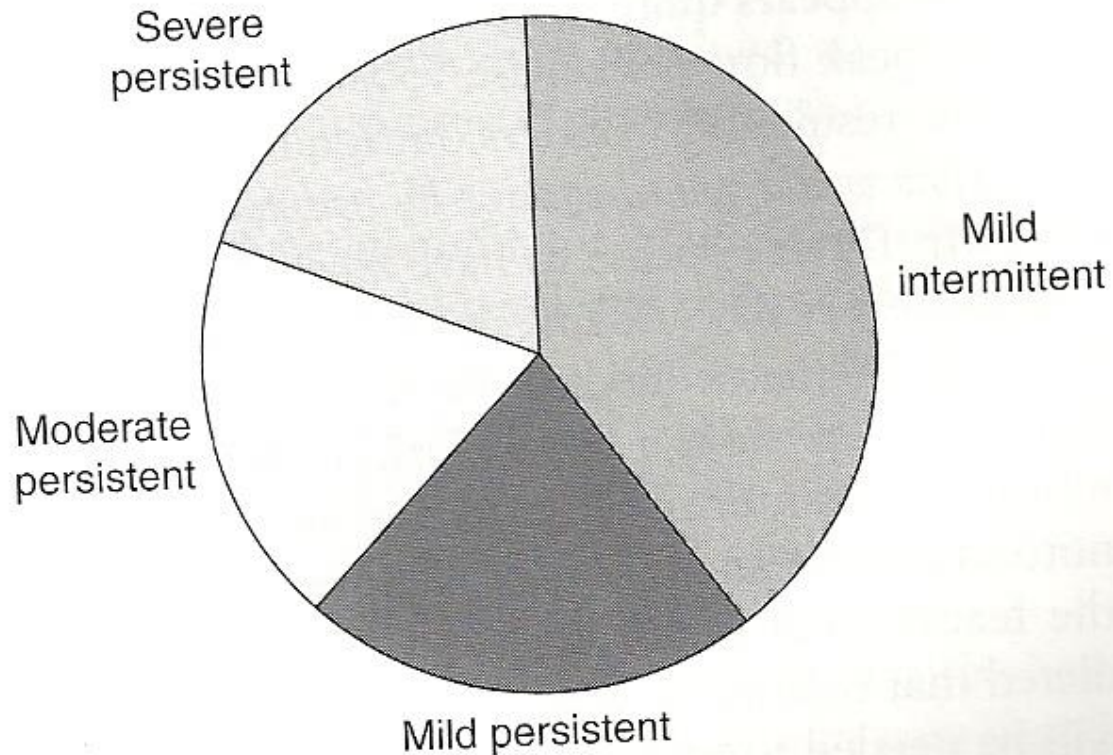
## The asthma population



Demographics  
Risk stratification  
Use of controller medications  
Use of an asthma action plan  
Use of the asthma control test  
Number of physician visits per year

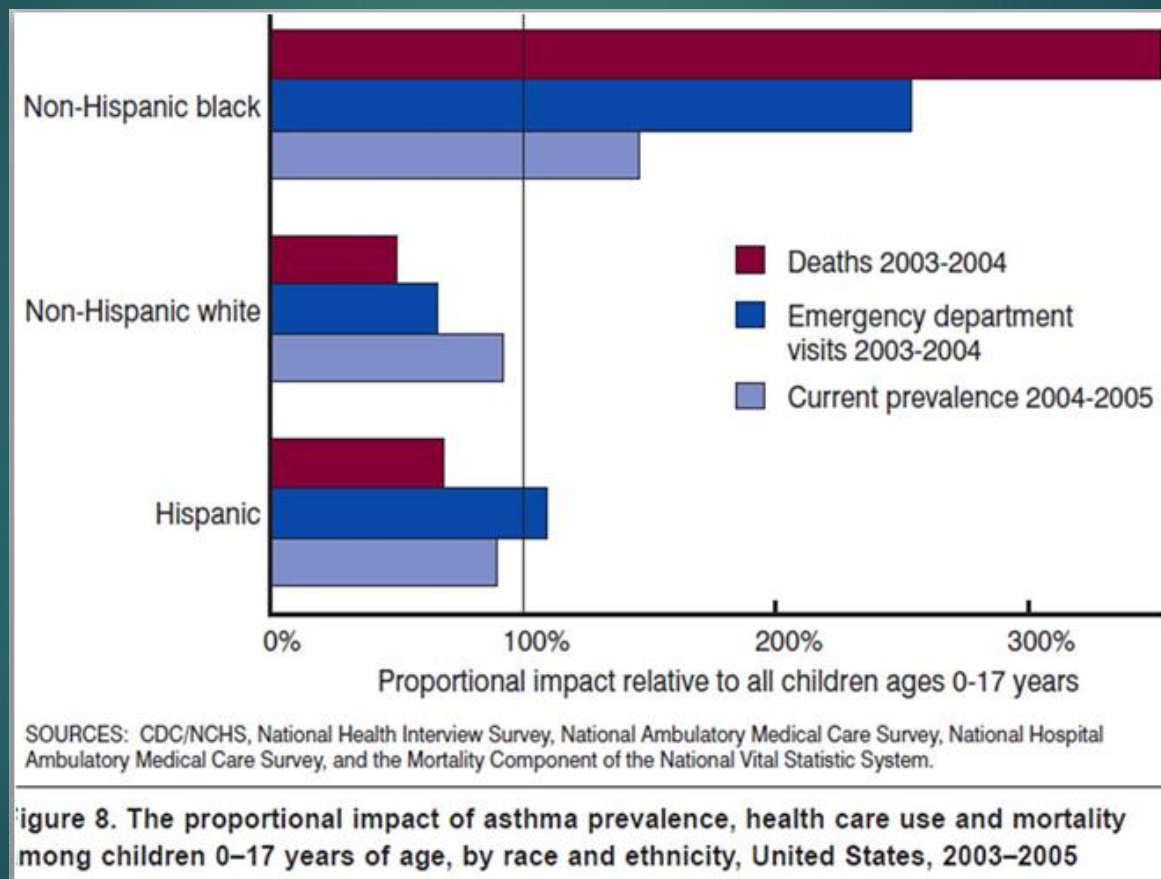
# Needs assessment

## The asthma population



# Needs assessment

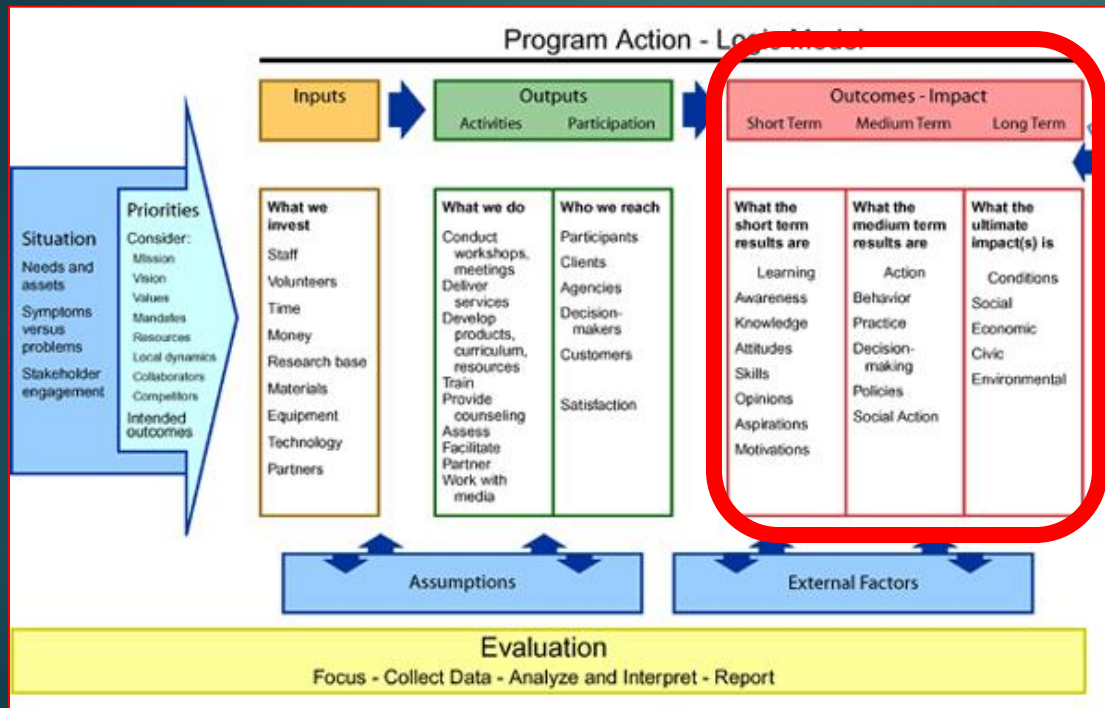
## The asthma population







# Findings become objectives



Outcomes indicators become **outcomes objectives**

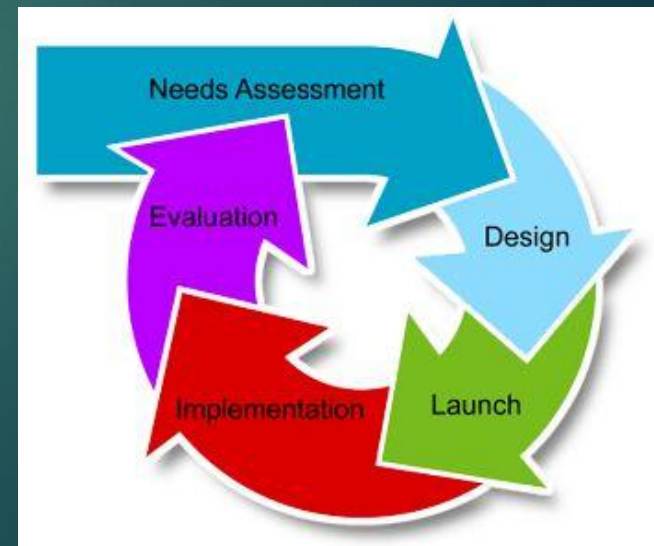
Data about the asthma population become **learning objectives**

Data about the healthcare community become **resource objectives**

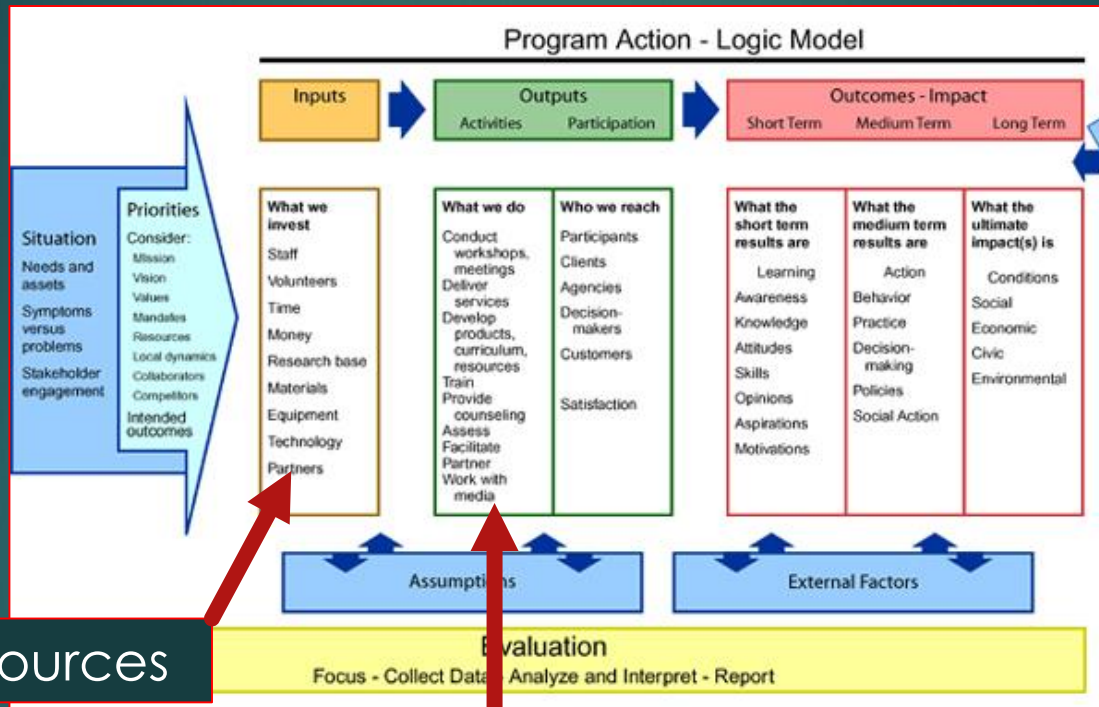


B. Program Development	1	3	1	5
1. Identify resources e.g., <ul style="list-style-type: none"><li>• funding</li><li>• facilities</li><li>• personnel</li></ul>				
2. Prioritize program features based on resources and characteristics of the target population (e.g., asthma severity, risk factors)				
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# Program Development



# Program development



Identify resources

Prioritize program features  
 Compare solutions to needs  
 Create goals and objectives  
 Select program activities

# Program development

## Identify resources—General nonprofit



# Program development

## Identify resources—General nonprofit

**TABLE 19.1. Sources of Revenue for Alternative Nonprofit Subsectors**

	Fee (%)	Private Gifts (%)	Government (%)	Investment Income (%)	Other (%)
All	50.3	13.3	31.9	2.8	1.7
Arts	34	44.5	13	5.4	3
Education	61.1	17.2	14	5.8	1.9
Environment	30.2	49.1	14.6	3.2	3
Health	56.3	4.4	35.9	1.9	1.5
Human Services	27.5	20.2	48.5	2	1.9
International	8	69	20	1.6	1.4

Source: Roeger, Blackwood, and Pettijohn, 2012.

# Program development

## Identify resources—Funds & Facilities

Revenue	
<b>Grants/Contracts/Contributions</b>	
Alticor	
Heart of West Michigan - United Way	
MSU Technical Assistance	
Spectrum Health Community Benefits	
<b>Total Grants/Contracts/Contributions</b>	
<b>Earned Income</b>	
Income Managed Care (165 asthma/COPD visits/month)	
Interest Income	
Honoraria	
<b>Total Grant/Earned Income Revenue</b>	
<b>Carryover/(Shortfall)</b>	
<b>In-Kind Revenue</b>	
Non-Reimbursed Home Visits (25/month x \$200)	
.12 Medical Director	
Administrative Oversight (Saint Mary's)	
Office Space (Saint Mary's) - 1,424 sq ft	
Computers (Saint Mary's)	
<b>Total Other/In-kind Revenue</b>	

# Program development

## Identify resources--Personnel

### Asthma Case Management Team:

- CHAP Clinical Manager / ANWM Manager
- 2 Asthma Educators/Case Managers – must be Certified Asthma Educator (AE-C) – RN or RRT – or become certified within one year (bilingual preferred)
- LMSW (Masters-prepared social worker)
- 2 Community Health Workers (CHW)
  - .75 FTE combined



# Program development

## Prioritize program features

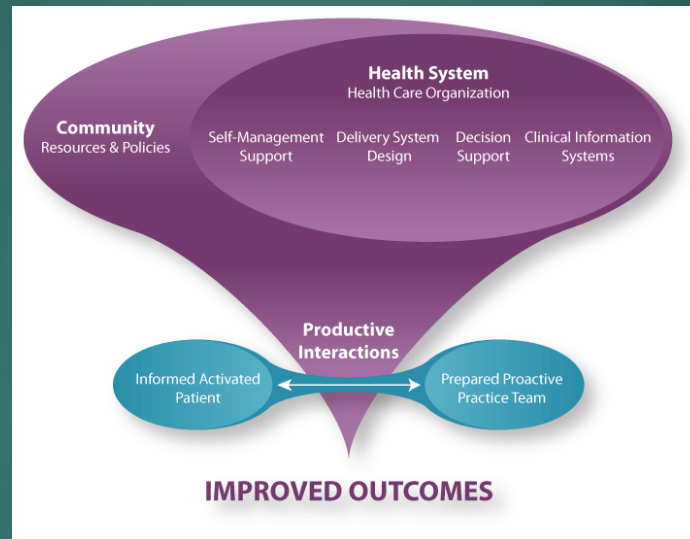
### Asthma Team Competencies

Office based training – PFT, ACT, AAP, etc  
Home based disease management  
Care coordination, including non-asthma issues  
Social support, environmental assessment  
Smoking cessation  
Asthma education  
Family/parent relationships



# Program development

## Apply solutions to needs



Using the chronic care model as a blueprint, evidence-based solutions can be applied at the system level, provider level, and patient level

# Program development

## Apply solutions to needs

### CHAP Strategies: System Level

- Integration of transition of care with inpatient setting
- Incentive Based opportunities
  - performance-based incentive
- Standardization of care with hospitals, schools, etc
- Connection to Community Programs
  - Partnership with ANWM
  - Connection with other community providers (maternal/infant health, Healthy Homes, behavioral health, basic needs, etc.)



# Program development

## Apply solutions to needs

### CHAP Strategies:

#### Provider Level

- Medical Management
  - Asthma Care Team – standardize asthma care and quality measures for CHAP sites, inpatients and schools
  - Education of high ED/IP utilizers
- Sharing Best Practices and Physician Leadership
  - Quarterly physician meetings, monthly practice manager meetings
  - Asthma Care Team meetings
  - Office site asthma care profile and office based outcomes
  - Provider education



first steps

growing every child's potential

Children's Healthcare Access Program



# Program development

## Apply solutions to needs

### CHAP Strategies:

#### Family Level

- Appropriate Resource Utilization
  - Parent education re:
    - Inappropriate ED use
    - Importance of medical home and how to contact PCP
    - No shows
    - Importance of immunizations and well-child visits
  - Intensive asthma education and home-based case management
  - Resource coordination/referral to community services
  - Free same-day/next-day transportation
  - Assistance with interpretation services



forums

growing every child's potential

Children's Healthcare Access Program



# Program development

## Create goals and objectives

Components of Severity		Classification of Asthma Severity ≥12 years of age			
		Intermittent	Persistent		
			Mild	Moderate	Severe
<b>Impairment</b>  Normal FEV <sub>1</sub> /FVC: 8–19 yr 85% 20–39 yr 80% 40–59 yr 75% 60–80 yr 70%	Symptoms	≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2x/month	3–4x/month	>1x/week but not nightly	Often 7x/week
	Short-acting beta <sub>2</sub> -agonist use for symptom control (not prevention of EIB)	≤2 days/week	>2 days/week but not daily, and not more than 1x on any day	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung function	<ul style="list-style-type: none"> <li>Normal FEV<sub>1</sub> between exacerbations</li> <li>FEV<sub>1</sub> &gt;80% predicted</li> <li>FEV<sub>1</sub>/FVC normal</li> </ul>	<ul style="list-style-type: none"> <li>FEV<sub>1</sub> &gt;80% predicted</li> <li>FEV<sub>1</sub>/FVC normal</li> </ul>	<ul style="list-style-type: none"> <li>FEV<sub>1</sub> &gt;60% but &lt;80% predicted</li> <li>FEV<sub>1</sub>/FVC reduced 5%</li> </ul>	<ul style="list-style-type: none"> <li>FEV<sub>1</sub> &lt;60% predicted</li> <li>FEV<sub>1</sub>/FVC reduced &gt;5%</li> </ul>
<b>Risk</b>  Exacerbations requiring oral systemic corticosteroids		0–1/year (see note)	≥2/year (see note) →		
		← Consider severity and interval since last exacerbation. Frequency and severity may fluctuate over time for patients in any severity category. →			
		Relative annual risk of exacerbations may be related to FEV <sub>1</sub> .			
<b>Recommended Step for Initiating Treatment</b>  (See figure 4–5 for treatment steps.)		Step 1	Step 2	Step 3 and consider short course of oral systemic corticosteroids	Step 4 or 5
		In 2–6 weeks, evaluate level of asthma control that is achieved and adjust therapy accordingly.			

# Program development

## Create goals and objectives

### Impairment

#### Normal FEV<sub>1</sub>/FVC:

8-19 yr	85%
20-39 yr	80%
40-59 yr	75%
60-80 yr	70%

- Prevent chronic and troublesome symptoms
- Require infrequent use of inhaled short-acting beta2-agonist
- Maintain (near) normal pulmonary function
- Maintain normal activity levels
- Meet patients' and families' satisfaction with asthma care

# Program development

## Create goals and objectives



- Prevent recurrent exacerbations of asthma
- Prevent progressive loss of lung function
- Provide optimal pharmacotherapy with minimal or no adverse effects

# Program development

## Create goals and objectives

### CHAP Asthma Program Goals:

- Identify and **address systems barriers** that prevent CHAP patients from optimally managing asthma
- Increase **access to and coordination** of asthma services for children on Medicaid
- **Standardize** asthma management in Kent County
- **Reduce emergency department use and hospitalizations** related to asthma among target population





# Program development

## Select program activities

Teaching methods include

- Private sessions vs. group sessions
- Caregiver education vs. patient education
- Demonstration and return demonstration
- Education materials

# Program development

## Select program activities

Teaching settings include

- clinic/office-based education
- emergency department/hospital-based education
- educational interventions by pharmacists
- educational interventions in school settings
- community-based interventions
- home-based interventions



<b>C. Program Implementation</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>
1. Ensure safety and privacy of individuals with asthma e.g., x HIPAA x OSHA x infection control				
2. Maintain a program database				
3. Coordinate training for program staff				

# Program Implementation



# Program implementation



# Program implementation

## Training program staff—**AE-C**

1. The following U.S.\* currently licensed or credentialed health care professionals may be admitted to the examination:

Physicians (MD, DO)

Physician Assistants (PA-C)

Nurses (RN, LPN, NP)

Respiratory Therapists (RRT, CRT)

Pulmonary Function Technologists (CPFT, RPFT)

Pharmacists (RPh)

Social Workers (CSW)

Health Educators (CHES)

Physical Therapist (PT)

Occupational Therapist (OT)

2. Individuals providing direct patient asthma education, counseling or coordinating services with a minimum of 1000 hours experience in these activities.



NATIONAL  
ASTHMA EDUCATOR  
CERTIFICATION BOARD

# Program implementation

## Training program staff--**CHWs**

### Training:

- Minimum of 2 days of experiential learning (job shadowing by discipline) in Kent County
- 1 – 2 days of observation on-site
- Min. 6 hours of didactic training
  - Guideline-based asthma management
  - Home visit basics
  - Educational content
  - Educational strategies/role playing
  - Social work role/services



# Program implementation

## Maintaining a dashboard

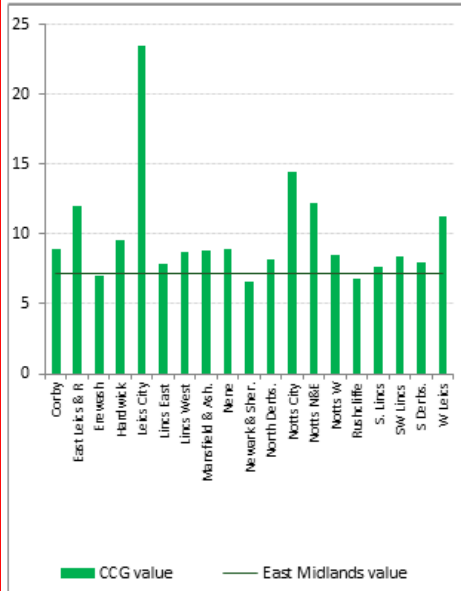


### Asthma CCG Level Snapshot

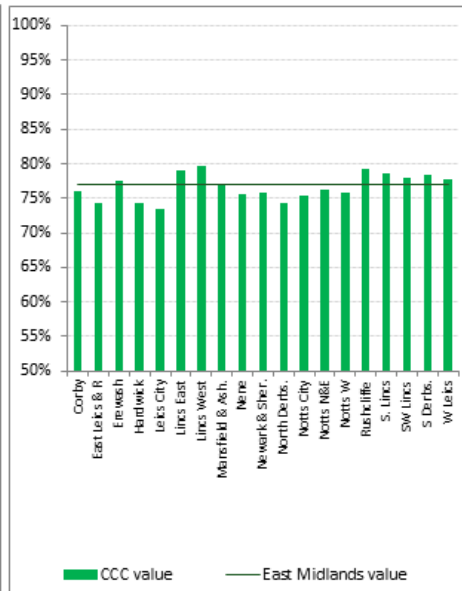
Most recent 12 months to December 2015

Note varying y-axis scales

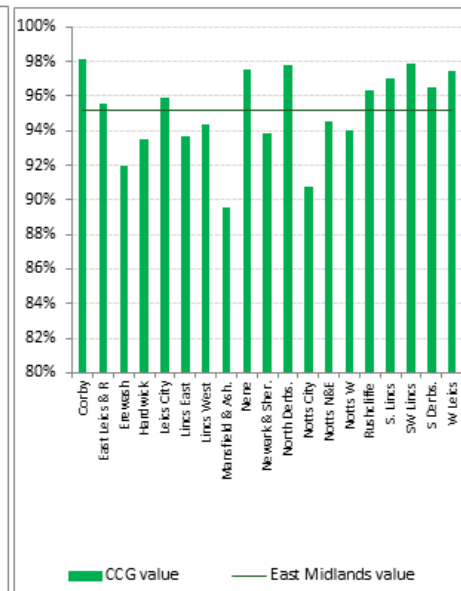
Admissions per 1,000 asthma population (adults)



AST\_003 (asthma review) achievement 2014/15



Smoking\_005 (smoking cessation) achievement 2014/15



CCG	Total admissions
NHS Corby CCG	37
NHS East Leicestershire and Rutland CCG	230
NHS Erewash CCG	45
NHS Hardwick CCG	62
NHS Leicester City CCG	463
NHS Lincolnshire East CCG	128
NHS Lincolnshire West CCG	121
NHS Mansfield & Ashfield CCG	102
NHS Nene CCG	375
NHS Newark & Sherwood CCG	53
NHS North Derbyshire CCG	157
NHS Nottingham City CCG	283
NHS Nottingham North & East CCG	125
NHS Nottingham West CCG	52
NHS Rushcliffe CCG	52
NHS South Lincolnshire CCG	79
NHS South West Lincolnshire CCG	69
NHS Southern Derbyshire CCG	270
NHS West Leicestershire CCG	263
<b>East Midlands</b>	<b>2,966</b>

# Program implementation

## Maintaining a dashboard

- Demographics: name, DOB, address, phone number, name of parent/guardian (if child), race/ethnicity, insurance status, household income, family size, zip code, address and phone number, medical home (and specialist), language spoken, other family members (names and ages)
- Date of home visit
- Who is present at home visit – client, mother, father, guardian, LMSW, CHW, interpreter, case manager
- Number of visit
- Type of visit – home visit, care conference, school visit
- Who made the visit – AE-C, LMSW, CHW
- Visit accomplished or no-show?
- Mode of transportation for family
- Marital status (of patient or parent/guardian)
- Employment status (of patient or parent/guardian)
- Referral source
- Reason for referral
- Engaged in behavioral health?
- Coordination with Dept. of Social Services?



# Program implementation

## Maintaining a dashboard

- Asthma symptoms – nasal congestion, watery eyes, coughing, SOB, wheezing, chest tightness, other symptoms
  - Symptom frequency - # days/week, # nights/week
  - Asthma trigger exposures – smoke, cold air, mold, dust, pollen, grass, trees, dogs, cats, birds, foods, GERD, ASA, NSAID, odors/fumes, respiratory infections, weather changes, roaches, other known triggers
  - Education sessions – A&P/goals, EIA, PF/symptom monitoring, triggers, meds/devices, AAP
  - Provide: spacer, pillow cover, PF meter, written information, other
  - Plan – arrange care conference, refer to Healthy Homes, refer to ANWM LMSW, administer juniper to patient/caregiver
- 
- Reason for discharge – declined services, graduated, lost eligibility, non-compliant, safety concerns, unable to contact

# Program implementation

## Maintaining a dashboard

- The following are tracked on enrollment and discharge (pre/post):

- ACT score
- Juniper score
- Flu shot – yes/no
- Asthma Action Plan – yes/no, understands AAP
- Spirometry – yes/no
- Smoke exposure? Inside or out?
- # School days missed due to asthma
- # Unscheduled office visits
- # Parental work days missed due to asthma
- # ED visits due to asthma
- # Hospitalizations due to asthma
- # Steroid bursts

- # Days/week with symptoms
- # Nights/week with symptoms
- Allergy testing
- Exercises without symptoms
- Seeing specialist
- Monitors peak flow

# Program implementation

## Maintaining a dashboard

### Outcome Dashboards:

#### Process measures

- 2 asthma visits/yr
- Annual spirometry (>5 years old)
- Annual flu shots
- Asthma Action Plan (AAP) use
- ACT use
- ETS exposure documentation
- Use of long-term control medications – adherence to regimen



# Program implementation

## Maintaining a dashboard

### Outcome Dashboards:

Outcome Measures and goals

- ED/1000
- Asthma ED visits/1000
- IP/1000
- HEDIS measures at 90%
- Cost per patient



# Program implementation

## Safety and privacy—**Flu shots**

CDC recommends a yearly flu vaccine for everyone six months of age and older

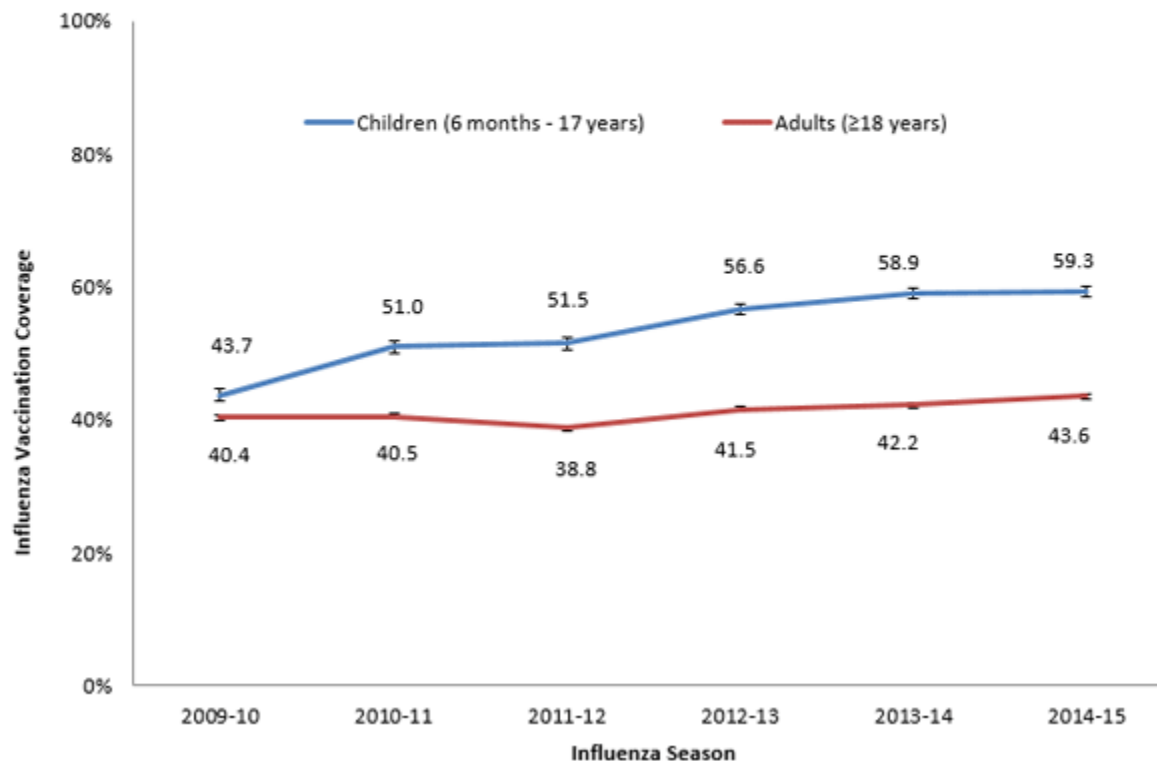
### What Does the Research Say?

- Health care workers who get vaccinated help to reduce the following:
  - transmission of influenza
  - staff illness and absenteeism
  - influenza-related illness and death, especially among people at increased risk for severe influenza illness
- Higher vaccination levels among staff have been associated with a lower risk of nosocomial (hospital-acquired) influenza cases.
- Influenza outbreaks in hospitals and long-term care facilities have been attributed to low influenza vaccination coverage among health care workers in those facilities.
- Higher influenza vaccination levels among health care workers can reduce influenza-related illness, and even deaths, in settings like nursing homes.

# Program implementation

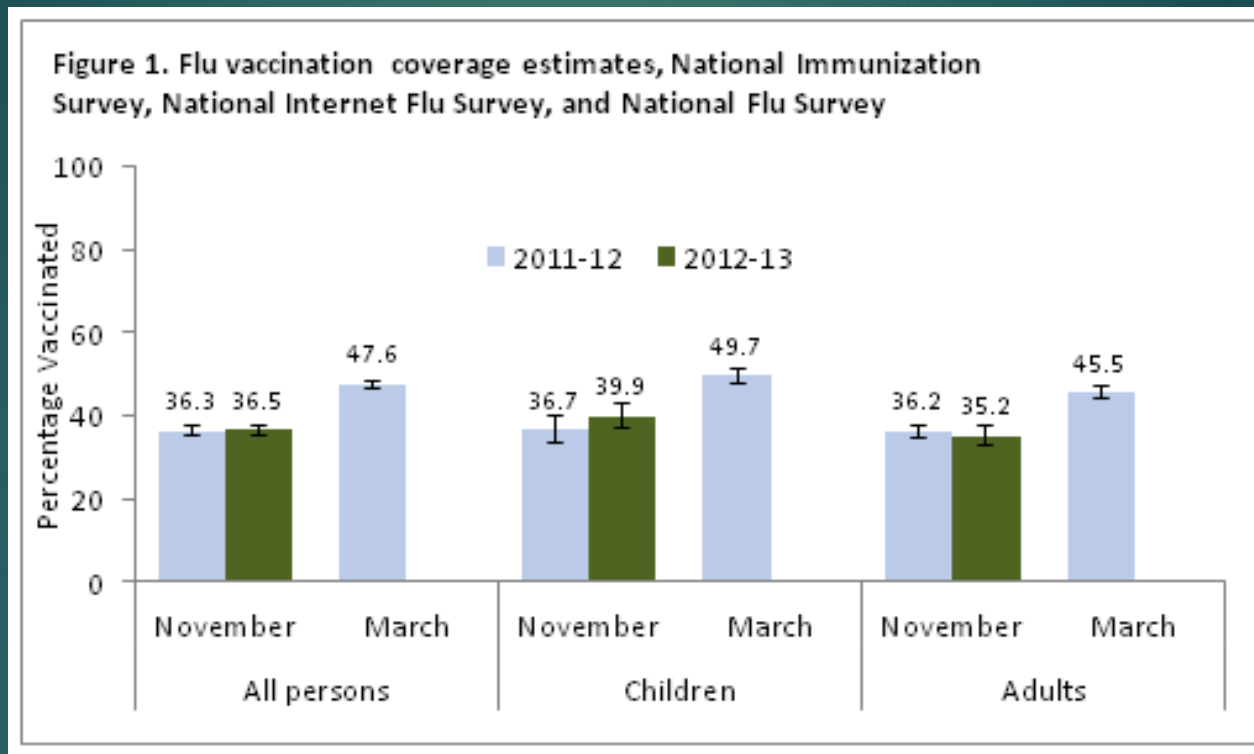
## Safety and privacy—**Flu shots**

**Figure 1. Seasonal Flu Vaccination Coverage, by Age Group and Season, United States, 2009-2015**



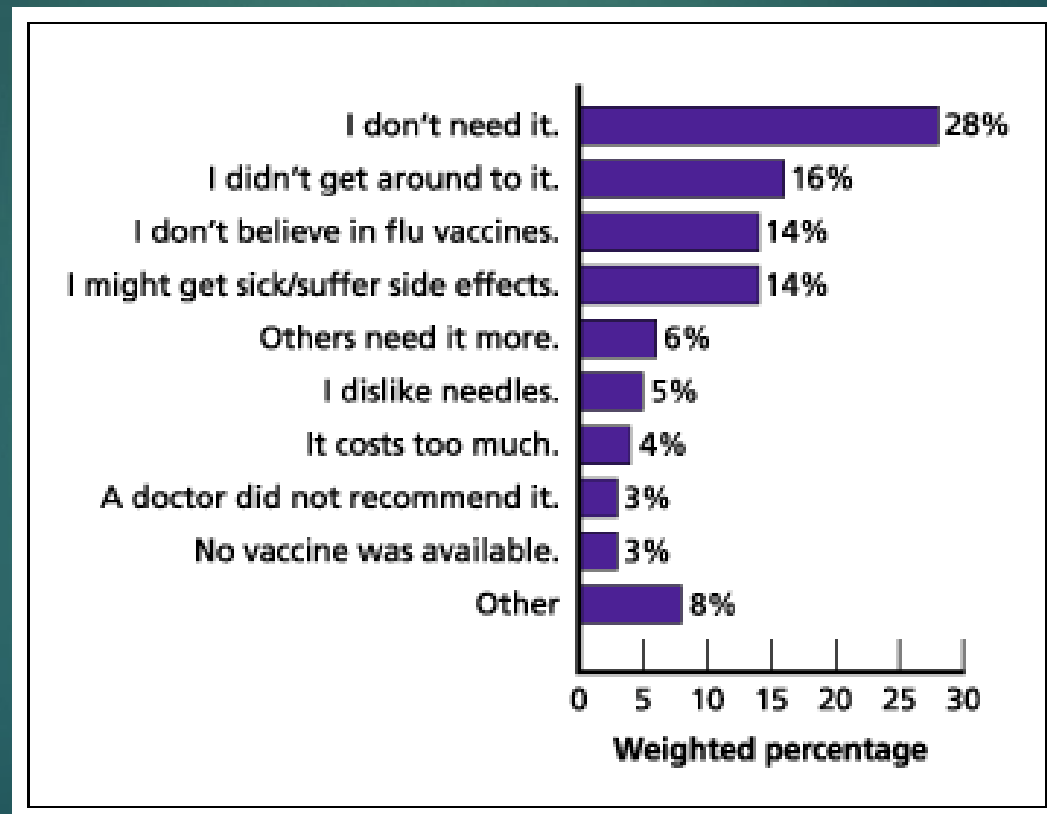
# Program implementation

## Safety and privacy—**Flu shots**



# Program implementation

## Safety and privacy—**Flu shots**

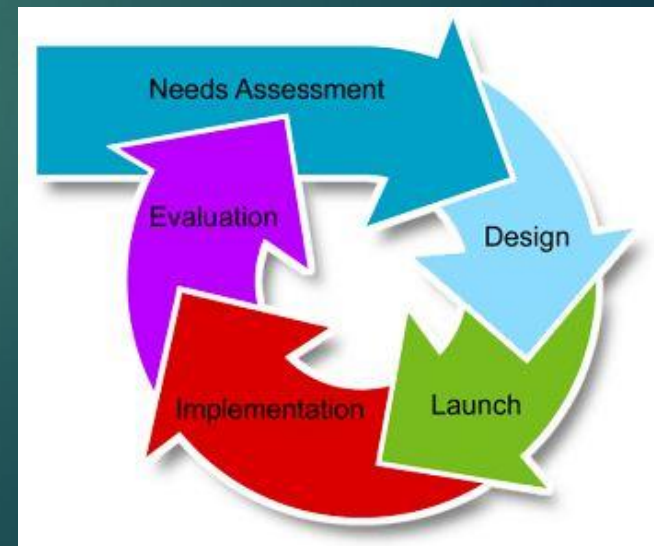






D. Program Evaluation	1	2	1	4
1. Select validated program evaluation tools				
2. Assess program processes e.g., <ul style="list-style-type: none"><li>• adherence (e.g., attendance, diary completion) of participant</li><li>• the influence of the program on participants' knowledge, skills, and / or attitudes (e.g., confidence, outcome expectations)</li><li>• procedure and task implementation</li></ul>				
3. Assess program outcomes e.g., <ul style="list-style-type: none"><li>• key outcomes (e.g., quality-of-life, functional status, asthma control, healthcare utilization, participant satisfaction)</li><li>• measures for key program outcomes</li><li>• program effectiveness</li></ul>				
4. Use findings to assess program impact and need for modifications				

# Program Evaluation



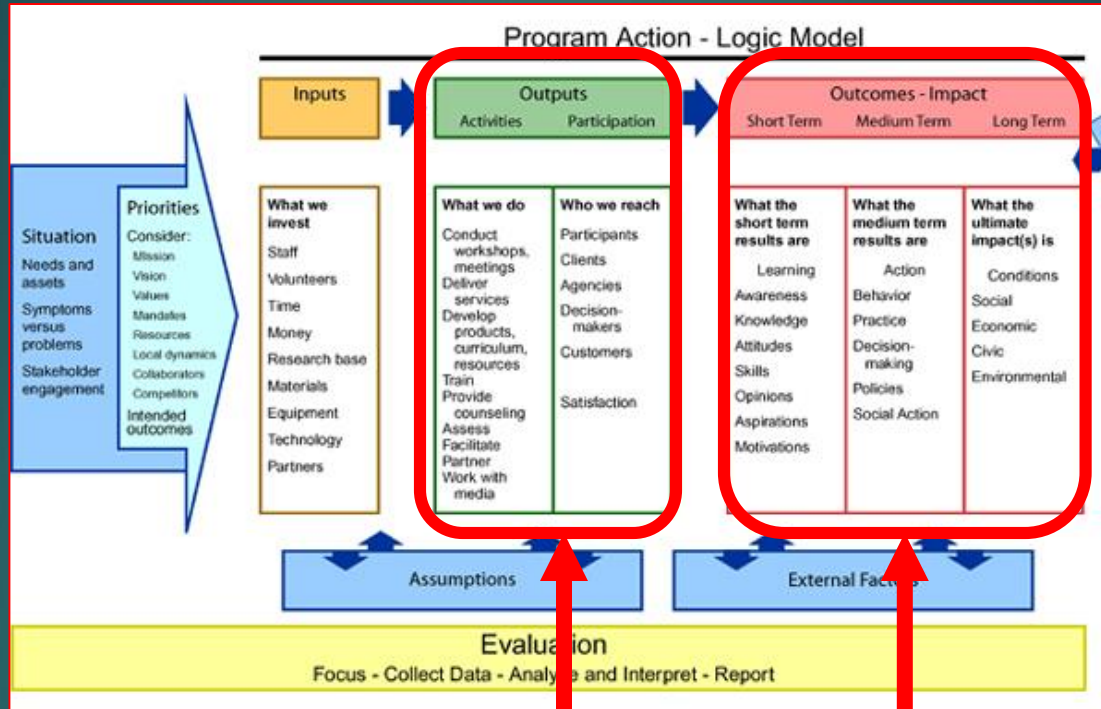
# Program evaluation



Process evaluation vs.  
outcome evaluation

Quantitative vs.  
Qualitative Methods

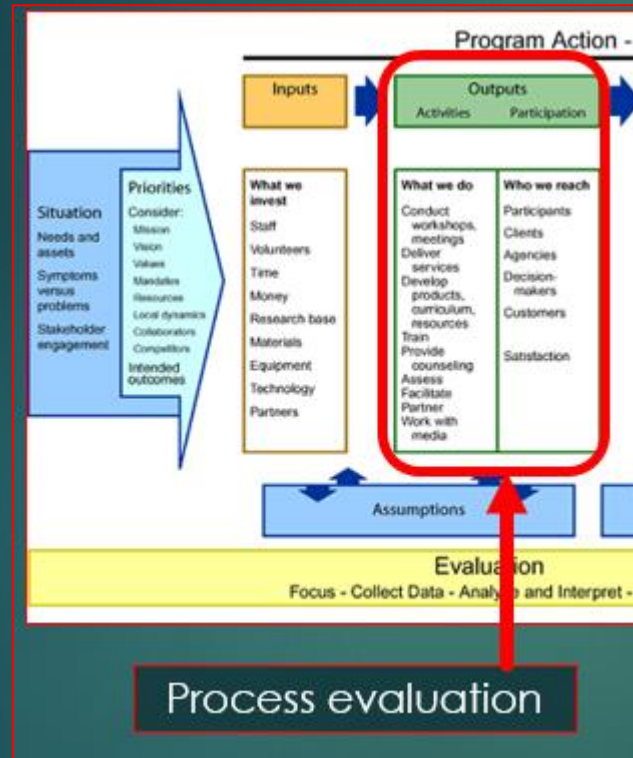
# Program Evaluation



Process evaluation

Outcome evaluation

# Program evaluation Processes



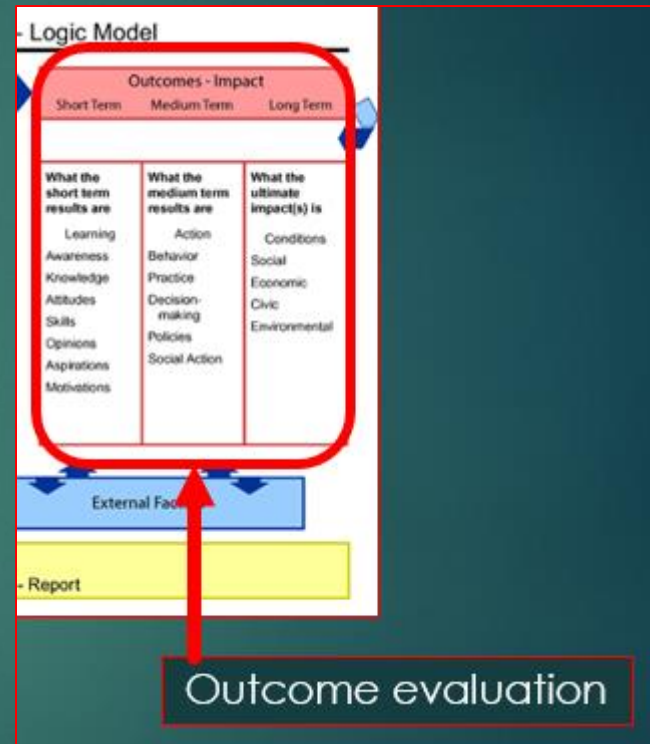
adherence of participant to the asthma management plan

procedure and task implementation by the asthma team

the influence on participants' knowledge, skills, and / or attitudes

# Program evaluation Outcomes

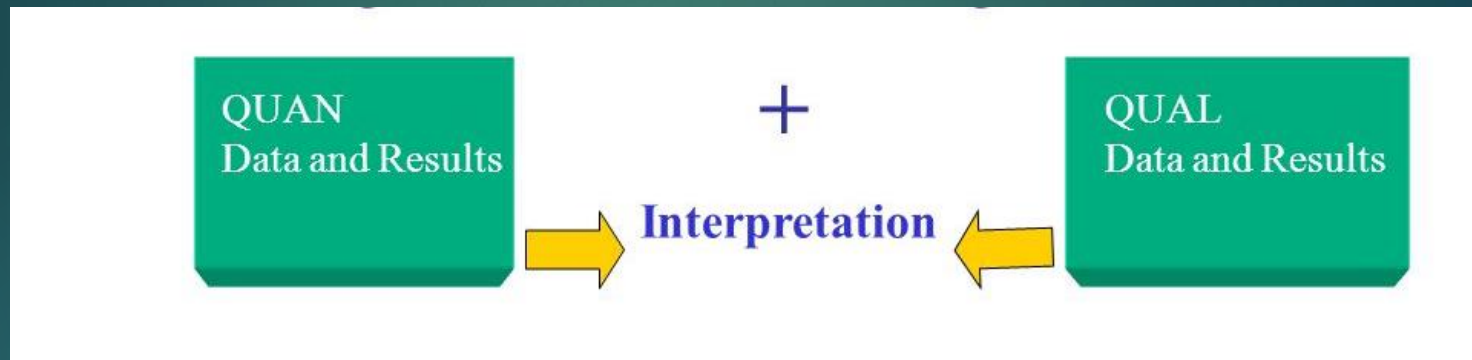
- quality-of-life
- functional status
- asthma control
- healthcare utilization
- participant satisfaction



# Program evaluation

## Select validated tools

3/10/2017



Juniper QOL surveys  
St. George Respiratory  
Questionnaire

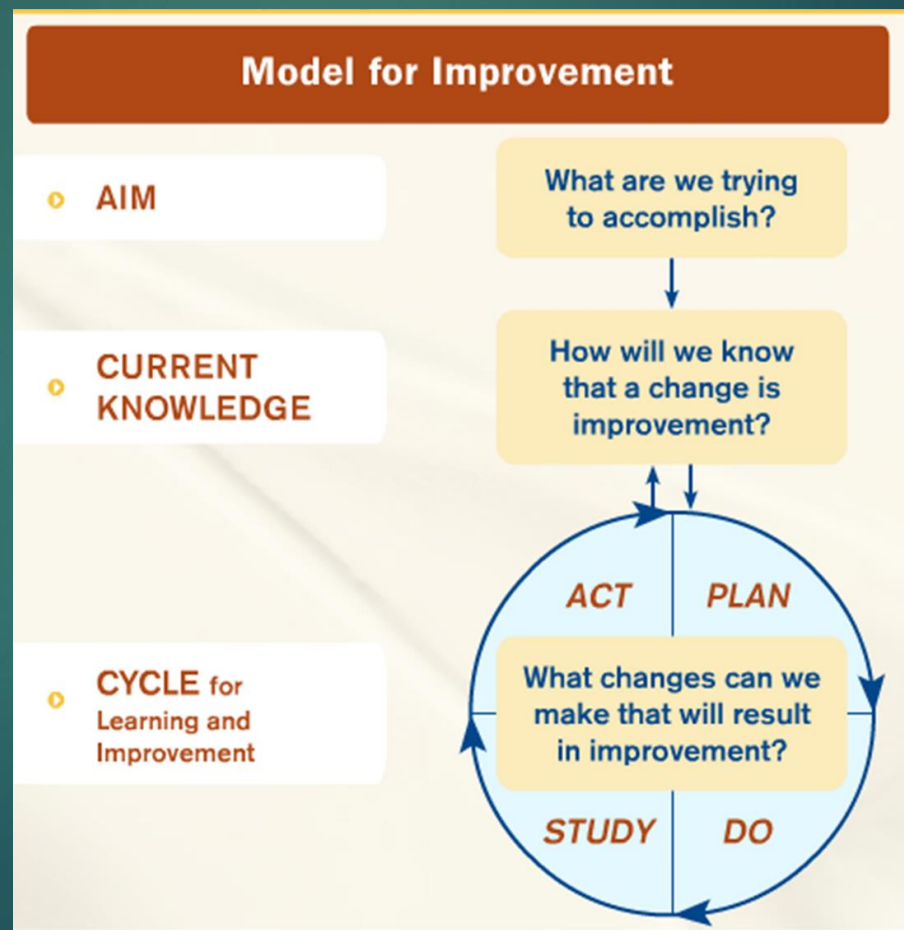
Spirometry, pulmonary  
mechanics, work days or  
school days missed

Observations: Observer's role,  
protocol, taking notes, observer  
comments, field notes, observer  
skills

Interviews: Structured, semi-  
structured, unstructured, focus  
groups

# Program evaluation

## Modifying the program



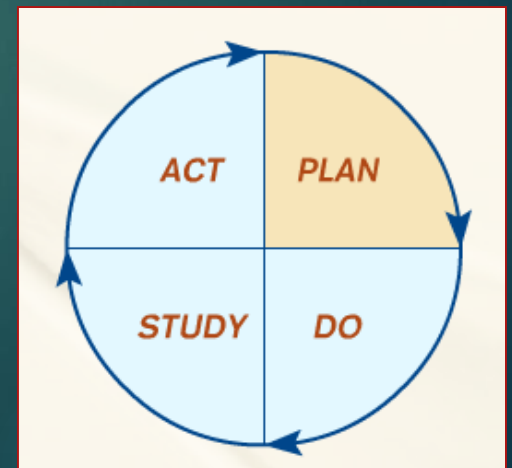
# Program evaluation

## Modifying the program

Establishing/re-establishing the aim

Determining who will do what, when, where, and why

A needs assessment might be needed to re-establish the aim





# Program evaluation

## Modifying the program

Involves executing the plan for change  
Assess the implementation of the plan for change



# Program evaluation

## Modifying the program

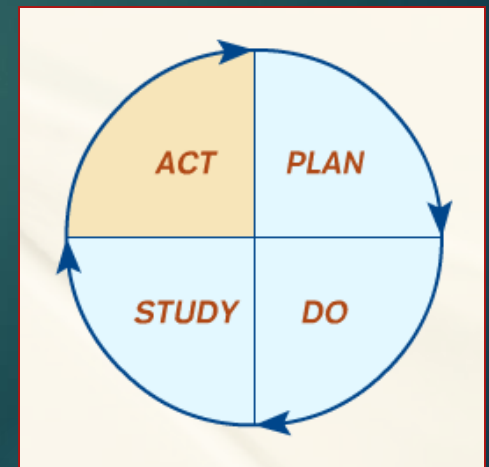
This the analysis part of the cycle  
Are observed outcomes congruent with desired outcomes  
A process and/or outcome evaluation can be used here

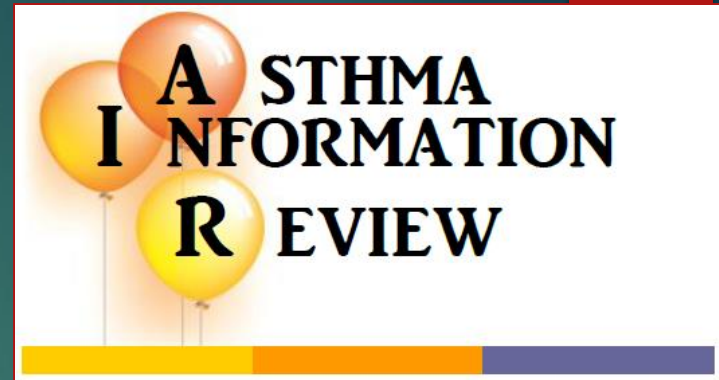


# Program evaluation

## Modifying the program

The CQI team determines what needs to be changed  
The cycle is then repeated over and over





# Program Development, Implementation, and Evaluation

JAN FIELDS  
AIR PREP COURSE  
MARCH 09, 2017

