

A Comparative Effective Examination of Asthma Treatments:

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Asthma Annual Roundup in the US:

- 2 million emergency room visits
- 14 million doctor visits
- Nearly 1/2 million hospitalizations
- 3,600 deaths
- Price tag \$56 billion

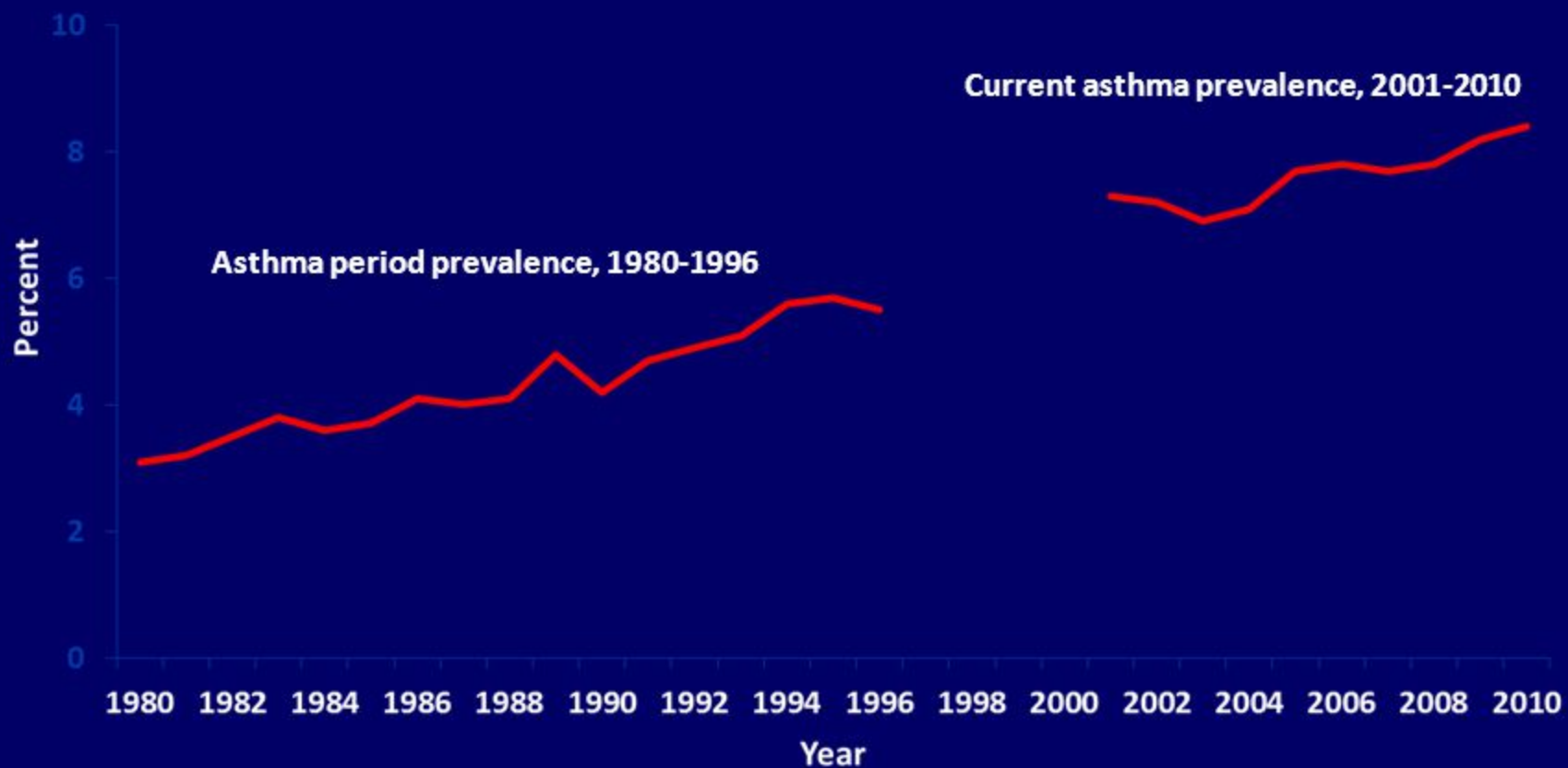


aafa.org



Asthma and Allergy
Foundation of America

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



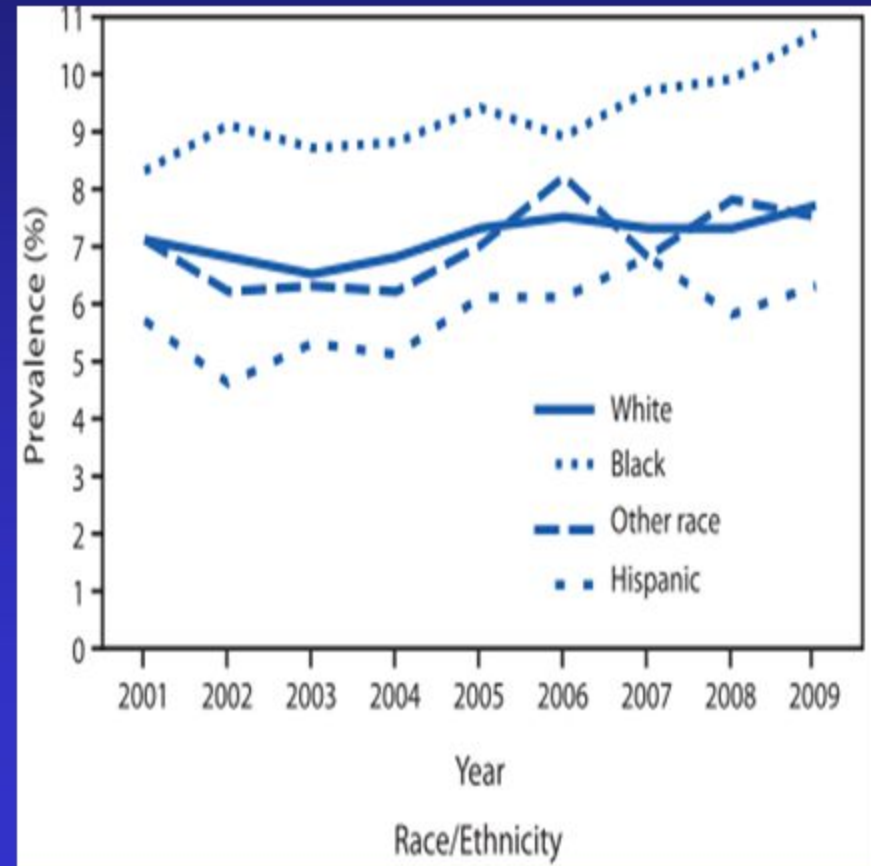
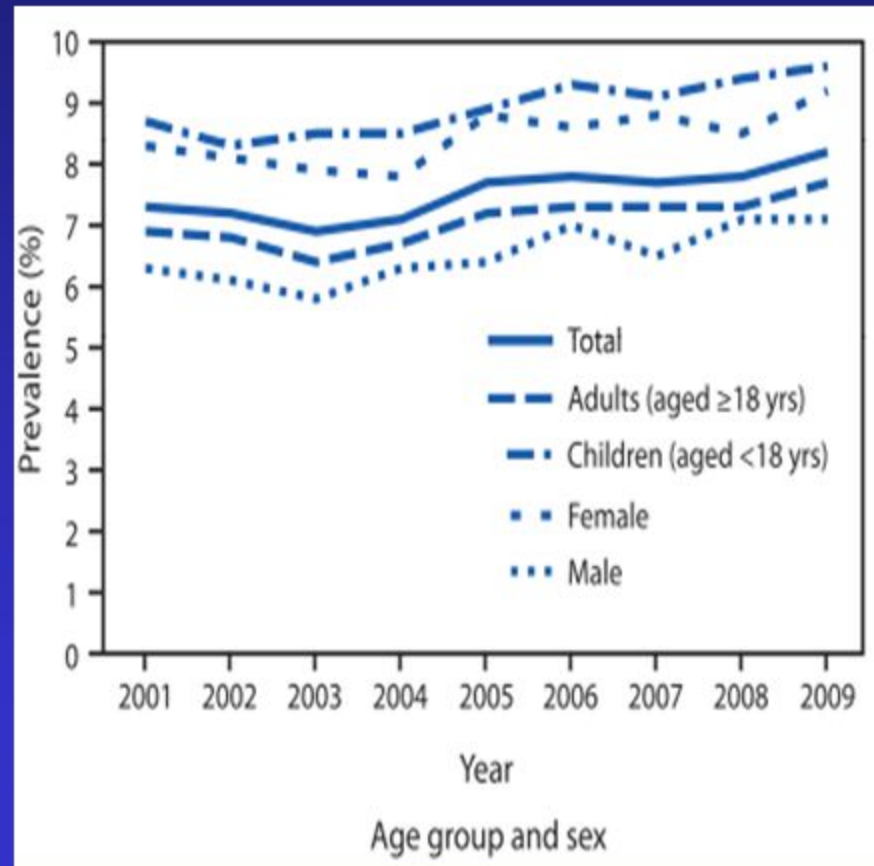
The percentage of the U.S. population with asthma increased from 3.1% in 1980 to 5.5% in 1996 and 7.3% in 2001 to 8.4% in 2010.



ATSDR

Asthma Incidence In The US 2001-2009

MMWR



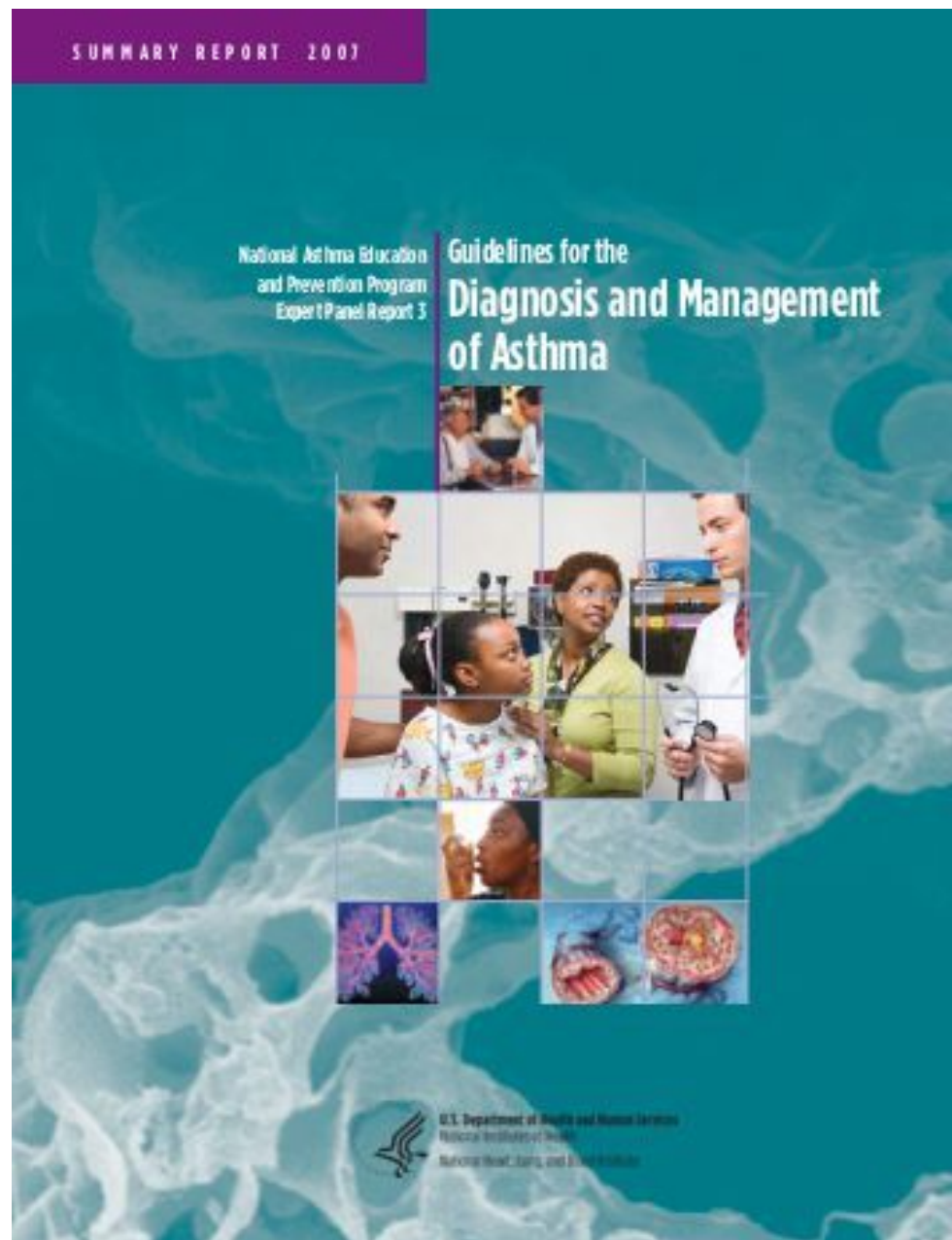
Inhaled Corticosteroids (inhaler/ICS)



VS

Leukotriene Receptor Antagonists (LTRA)





Methods of Analysis

- Basic Method of analysis
- Grading of Recommendations Assessment, Development and Evaluation (GRADE)
- Agency for Healthcare Research and Quality (AHRQ) Evidence-based Practice Centers (EPC) method

Basic Method

Evidence Category A: Randomized controlled trials (RCTs), rich body of data

Evidence Category B: RCTs, limited body of data

Evidence Category C: Nonrandomized trials and observational studies

Evidence Category D: Panel consensus judgment

Basic Method Problem

- ICS has POOR compliance rates
 - Various studies indicate true compliance is between 30-50%.
 - However, parents/patients report a compliance rate of around 70-80%
 - Improper use, patient doesn't like to use the inhaler, does not like the taste, difficult to use
- LTRA has HIGH compliance rates
 - Studies repeatedly report compliance rates 80-90% or more.

GRADE and AHRQ EPC Method

Seven Domains

Risk of Internal Bias

Consistency of Finding

Directedness of Comparison

Precision of Finding

Dose-Response/Direction

Confounding

Publication Bias

Outcome Stratum	Number of Studies Included	Total Number of Study Participants	Technique Used to Address Confounding Issues	Included Studies
Composite	2	1,369	Randomized Control Trial	Price et al., 2013 Zeiger et al., 2005
Inpatient/ED/OCS	3	147,502	Causal inference techniques used	Li et al., 2014 Wu et al., 2014 Zeiger et al., 2008
	2	41,231	None	Lee et al., 2010 Blais et al., 2011
Inpatient/ED	1	56,168	Causal inference techniques used	Allen-Ramey et al., 2003
	1	960	None	Tan et al., 2009
Hospitalization	5	185,522	Causal inference techniques used	Allen-Ramey et al., 2004 Li et al., 2014 O'Connor et al., 2006 Wu et al., 2014 Zeiger et al., 2008
	4	3,542	None	Colice et al., 2008 Ducharme et al., 2012 Orsini et al., 2004 Stempel et al., 2002
ED Visit	5	185,522	Causal inference techniques used	Allen-Ramey et al., 2004 Li et al., 2014 O'Connor et al., 2006 Wu et al., 2014 Zeiger et al., 2008
	2	1,510	None	Colice et al., 2008 Ducharme et al., 2012

Outcome # Studies; #Participants	GRADE	EPC	Supports the addition of LTRA to first-line treatment
Composite			
2; 1,369	Low	Moderate	Yes
Inpatient/ED/OCS			
3;147,502	Low	Insufficient	Cannot draw a conclusion
2;41,231	Very Low	Low	Yes
Inpatient/ED			
1;56,168	Very Low	Low	Yes - with caveat
1;960	Very Low	Low	Yes
Hospitalization			
5;185,522	Low	Moderate	Yes
4;3,542	Very Low	Insufficient	Cannot Draw a conclusion
ED Visit			
5;185,522	Low	Moderate	Yes
2;1,510	Very Low	Low	Yes

Outcome	LTRA Similar or Better Outcomes	ICS Better Outcomes
Composite	(Price et al., 2013); (Zeiger et al., 2005)	
Inpatient/ED/OCS	(Blais et al., 2011); (Lee et al., 2010); (Li et al., 2014); (Wu et al., 2014)	(Zeiger et al., 2008)
Inpatient/ED visit	(Allen-Ramey et al., 2003); (Tan et al., 2009)	(Tan et al., 2009) * For adherent groups only
Inpatient/Hospitalization	(Allen-Ramey et al., 2004); (Colice et al., 2008); (Ducharme et al., 2012); (Li et al., 2014); (O'Connor et al., 2006); (Wu et al., 2014); (Zeiger et al., 2008)	(Orsini et al., 2004); (Stempel et al., 2002)
ED Visit	(Allen-Ramey et al., 2004); (Colice et al., 2008); (Ducharme et al., 2012); (Li et al., 2014); (O'Connor et al., 2006); (Wu et al., 2014); (Zeiger et al., 2008)	

Maryland Asthma Control Program

- Established in 2002 to address the burden of asthma in Maryland through planning, surveillance and intervention.
- The Plan not only refers to, but seeks to implement the guidelines
 - Disseminated the 2002 and 2007 NIH Guidelines to health providers
 - Trained community primary care providers on the 2007 NIH
 - guidelines

MACP Objectives

- OBJECTIVE 3.2
 - Apply scientific evidence and best practices to address barriers to optimal asthma management, specifically control care for disparate populations.
- OBJECTIVE 3.2.2
 - Assess the knowledge about asthma medications
- OBJECTIVE 3.2.3
 - Develop training and professional development opportunities to promote use of evidence based

Maryland Medicaid

- Li et al. (2014) and Wu et al. (2014) articles
 - Questions about practicing patterns
- Tan et al. (2009)
 - What is the compliance rate for ICS within the Maryland Medicaid population?
 - Are there interesting differences for sub-categories (race, gender, area of residence)?

Questions?

