

Major Challenges & Opportunities in Asthma: The Research Perspective

What is Not Known?

How Can it be Addressed by Partnerships?

How Can Primary Care Specialists Respond?

Burden of Asthma in Wisconsin, 2010

- Asthma diagnosis in 14% adults, 10% children (2009)
- Racial disparities
 - African Americans 22% (2004-2009)
 - Hospitalized 5 x rate of whites
 - Mortality 4 x rate of whites
 - Native Americans have ↑ hosp. rates
- Milwaukee County
 - Highest hospitalization and ED visit rates
- Menominee Co. 2nd highest rates

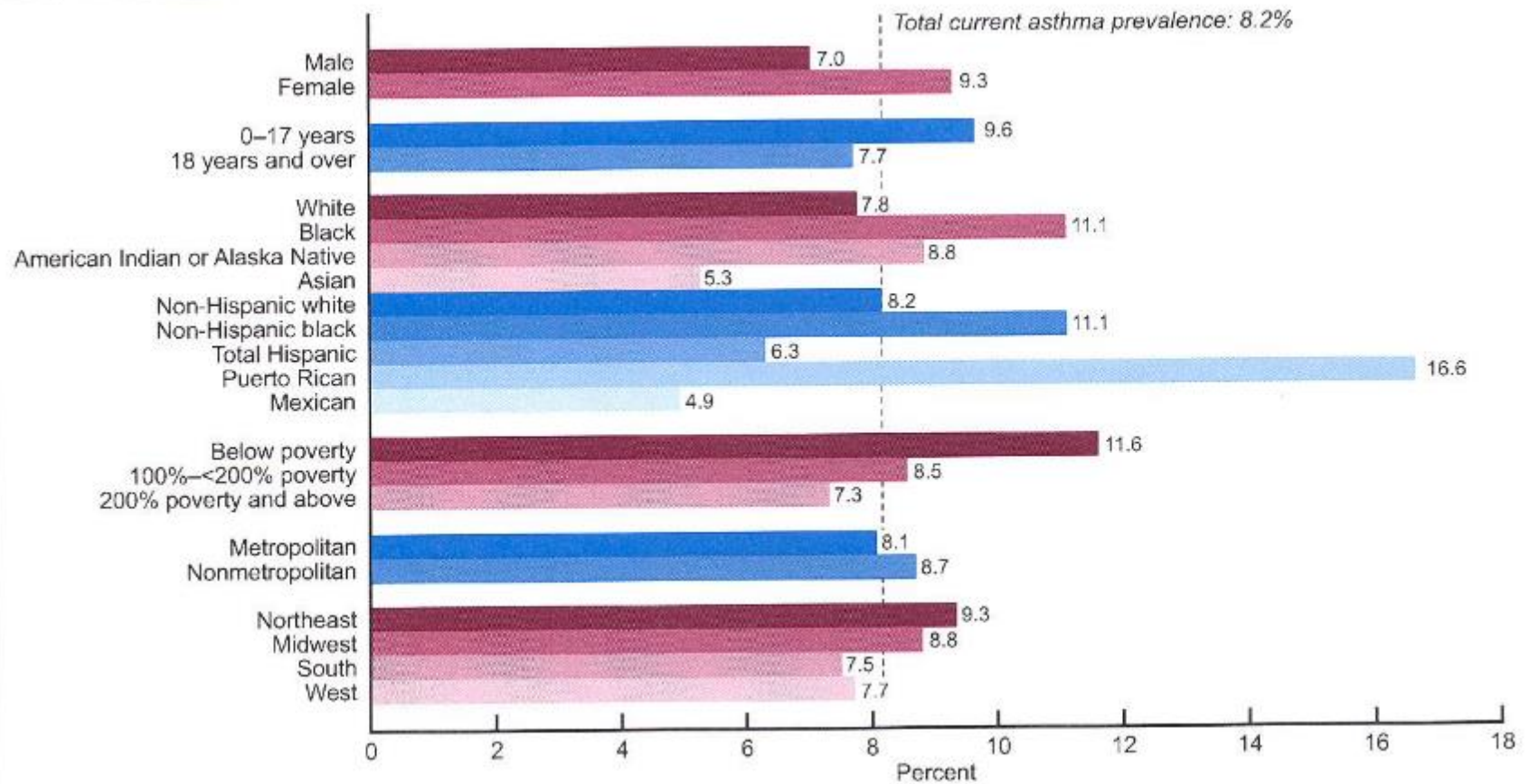
<http://www.dhs.wisconsin.gov/eh/Asthma/facts.htm>

Burden of Asthma in Wisconsin, 2010

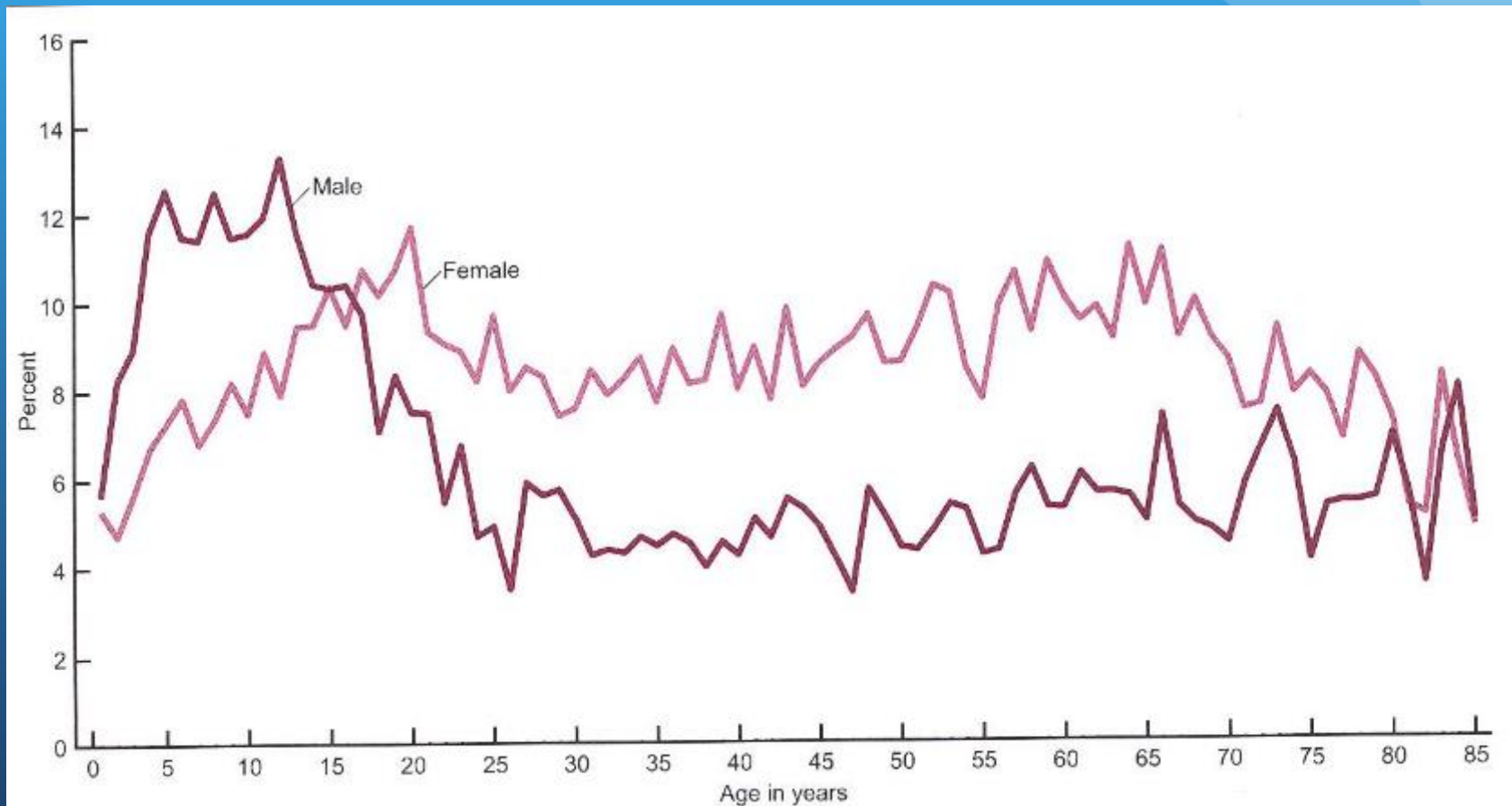
Age & Gender

- Children < 5 yrs. of age have highest hosp. & ED rates
- Males more severely impacted during childhood; females have more frequent adverse asthma outcomes in adulthood
- Lifetime asthma prevalence 14.5% in females vs 12.9% males
- Medical management of asthma in WI falls short of NAEPP Guidelines

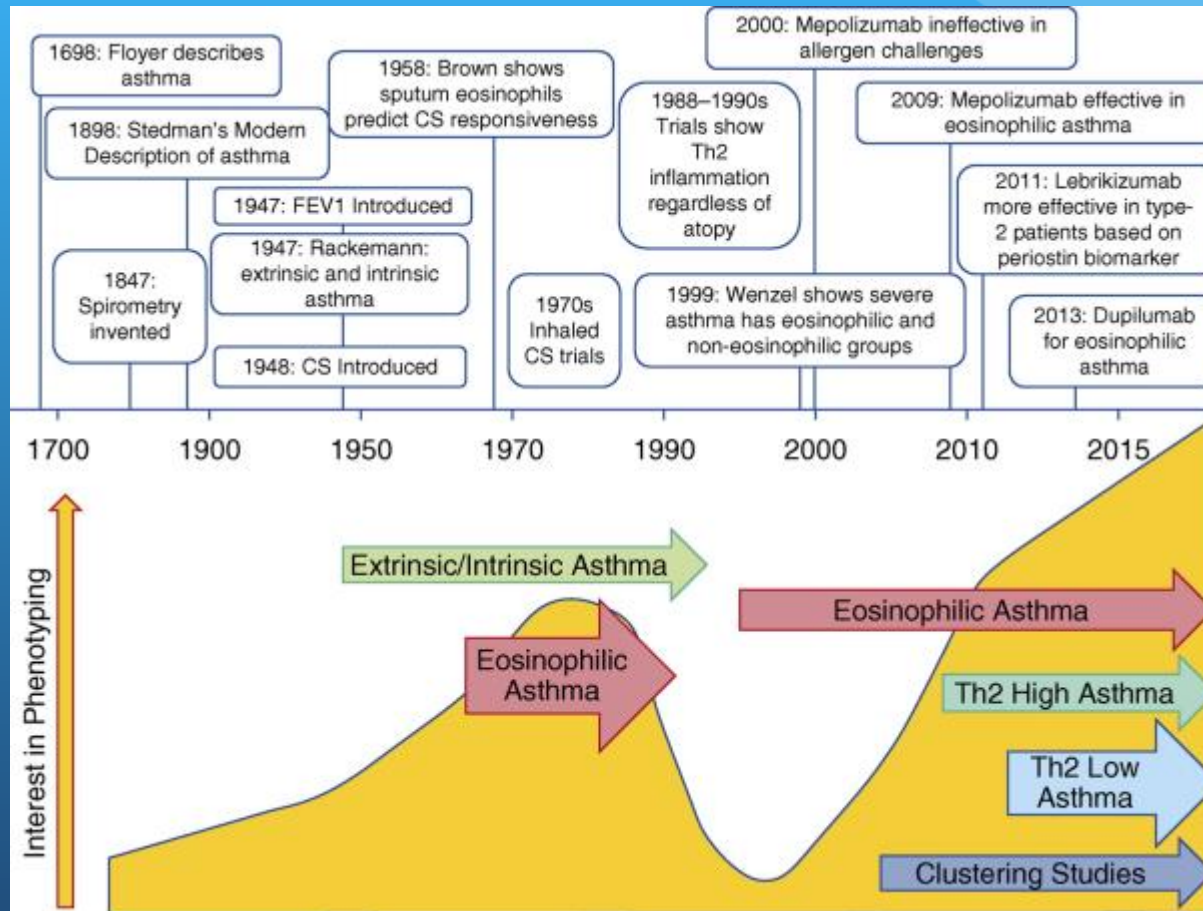
Prevalence of Current Asthma, 2009



Current Asthma, Ages 1-85 years, 2001-2009

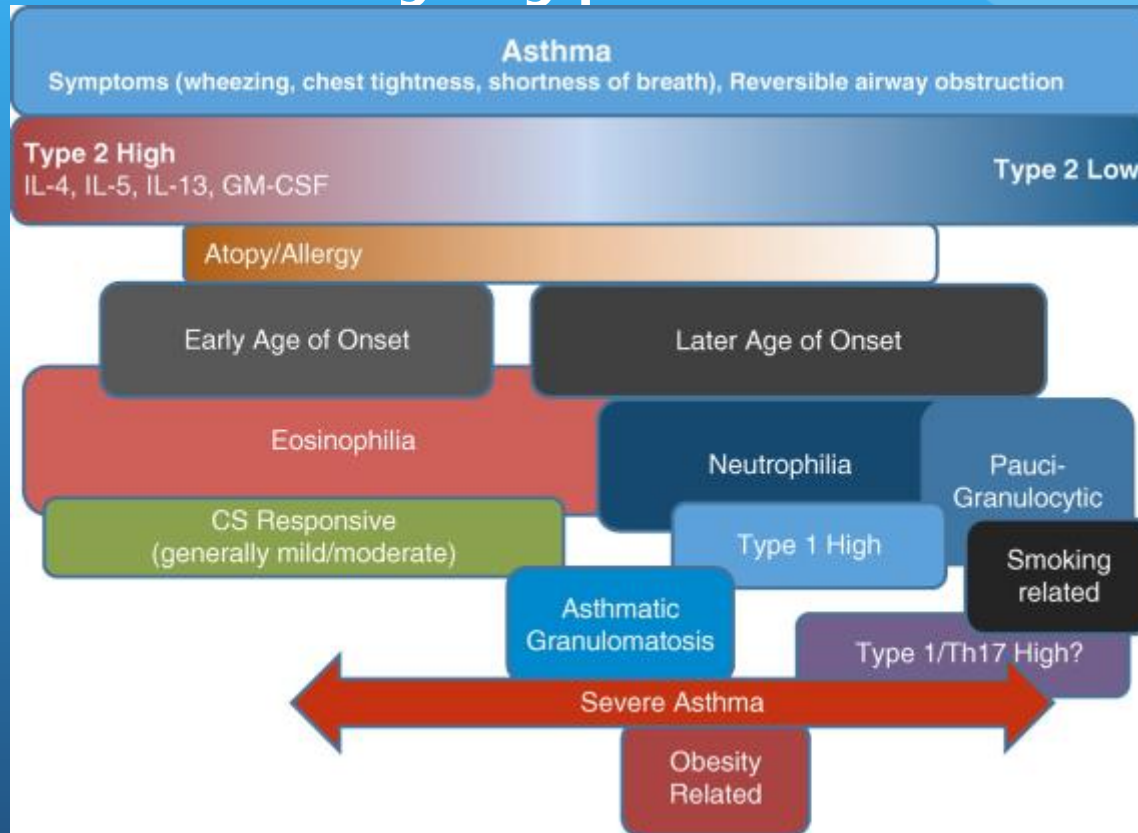


Major Understanding of Asthma & Phenotyping



A timeline showing major events in the understanding of asthma and phenotyping. The timeline is “semilogarithmic” in scale, emphasizing the growing amount of research in the field with time. *Arrows* below represent the emergence of various phenotype strategies. Background shows the overall changing interest in asthma phenotyping over time. CS = corticosteroids.

Asthma Phenotypes Related to Inflammatory Type



An example of current asthma phenotypes as they relate to inflammatory type (type-2 high or low) and other variables. Note that many phenotypes overlap because currently there is no clear demarcation between these groupings. Patients may exhibit clinical or pathologic features of multiple groups, emphasizing the limitations in the current understanding of phenotypes and the ability to use them routinely in clinical practice at this current stage. CS = corticosteroids; GM-CSF = granulocyte-macrophage colony-stimulating factor.

The GINA Asthma Strategy Report 2014: What's New for Primary Care?

- A new look: “What” should be done, “why”, but also “how” it can be implemented effectively
- Key content changes:
 - A new practical definition of asthma (a heterogeneous disease)
 - Practical advice for diagnosing asthma and guiding Tx
 - Assess control and risk factors PLUS “future risk”
 - Algorithm for distinguishing uncontrolled asthma and severe asthma
 - 3 components of control-based management (assess, adjust Tx, review response)

The GINA Asthma Strategy Report 2014: What's New for Primary Care? (cont'd)

- Key content changes:
 - Expanded indications for starting controller Tx
 - Tailoring asthma Tx for individuals
 - Asthma - COPD Overlap Syndrome
 - Continuum of care for worsening asthma, from early self-management, through to primary care and acute-care management
 - New approach to diagnosing asthma in children \leq age 5.

Host & Seasonal Risk Factors for Asthma Exacerbations

- How best to ID patients at risk?
- Seasonal predictors and differences
- 7 important risks
 - *Exacerbation history in previous season
 - ICS Tx step
 - FEV₁/FVC ratio
 - FENO values
 - Blood eosinophil counts
 - Allergic sensitization
- How can these risks be practically incorporated into practice and will it make a difference?

Teach SJ et al J Allergy Clin Immunol 2015; 135:1465-73

Predictors of Difficult to Control Asthma

- Definition: \geq Fluticasone 250 mcg bid +/- LABA
- Observations
 - Increased Sx and variability of these Sx over the seasons (day/night and fall/winter)
 - Increased exacerbations in fall/winter
- Distinguishing variables
 - FEV₁ reversibility
 - FEV₁ / FVC
 - FEV₁ % predicted
 - Concurrent rhinosinusitis
 - Mold sensitivity
 - Total IgE
- What would happen if all patients had FEV₁ \pm reversibility, rhinosinusitis assessment, and an allergy evaluation?

Will the GINA Asthma Strategy Report 2014 Make a Difference?

- Will it be adopted and how can we increase the odds?
- How best can the “humanomics” principle in GINA be implemented, taking into account the behavioral, social, and cultural factors that shape outcomes for individual patients?
- How can we conduct trials to identify how best to individualize Tx?
- How can both primary care specialists and patients make it happen?