

Emergency Department Visits for Asthma in Montana, 2010-2013

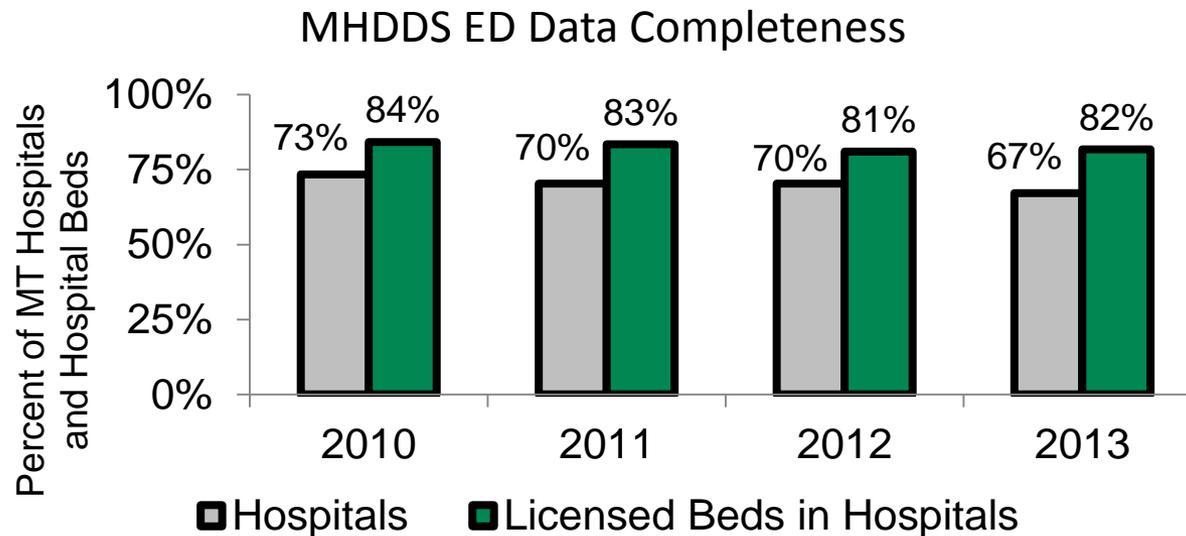
Outline

- **Overview of the Database**
 - Source, Contents, Limitations
- **What**
 - Severity, Cost, Payer
- **Who**
 - Age, Sex
- **When**
 - Year, Seasonality
- **Where**
 - Geography, MACP Activities

Overview of the Database

- **Source**
 - Montana Hospital Discharge Data System (MHDDS)
 - Montana Hospital Association is owner of the data
- **Years Available:** 2010-2013
- **Limitations**
 - Not identified
 - Persons with multiple ED visits in a year would have multiple records in the dataset (data are for visits, not persons)
 - No way to count the number of ED visits per person
 - Dataset does not include residents of MT who visit an ED in another state
 - Dataset does not include data from all hospitals in Montana
 - Reporting is voluntary
 - Underestimate of all ED visits in the state

Overview of the Database



Of 63 hospitals in the state, 43 (67%) submitted ED data in 2013. These 43 hospitals had 2620 of the 3206 licensed beds in the state (82%).

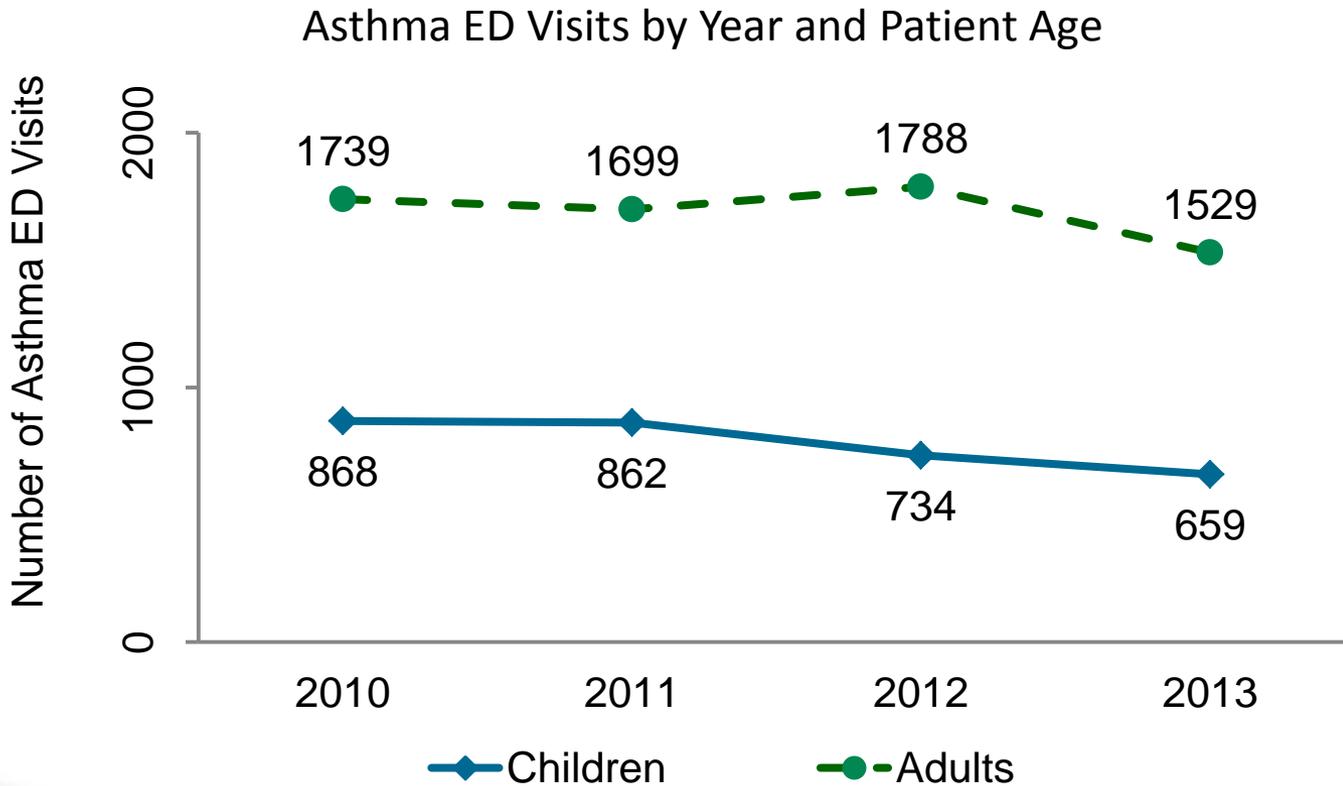
Overview of the Database

Example of Data (Fabricated)

| ID | Patient's County of Residence | Patient's ZIP Code of Residence | Age | Sex | Admission Date | Discharge Date | Discharge Status | Payer | Primary Diagnosis | Secondary Diagnosis 1 to 8 | Primary CPT Code | Secondary CPT Code 1 to 5 | Total Charge |
|----|-------------------------------|---------------------------------|-----|-----|----------------|----------------|------------------|------------|-------------------|----------------------------|------------------|---------------------------|--------------|
| 1 | Flathead | 59903 | 5 | M | 9/5/2013 | 9/5/2013 | Home/Self-Care | Medicaid | 493.00 | 786.07 | 99282 | . | 1548 |
| 2 | Missoula | 59802 | 15 | F | 4/25/2010 | 4/25/2010 | Home/Self-Care | Commercial | 493.92 | . | 99284 | . | 2342 |
| 3 | Hill | 59501 | 3 | F | 7/13/2011 | 7/13/2011 | Transferred | Medicaid | 493.00 | . | 99283 | J2930 | 189 |
| 4 | Gallatin | 59717 | 42 | M | 8/1/2013 | 8/1/2013 | Expired | Other | 493.01 | 496.01 | 99282 | . | 447 |

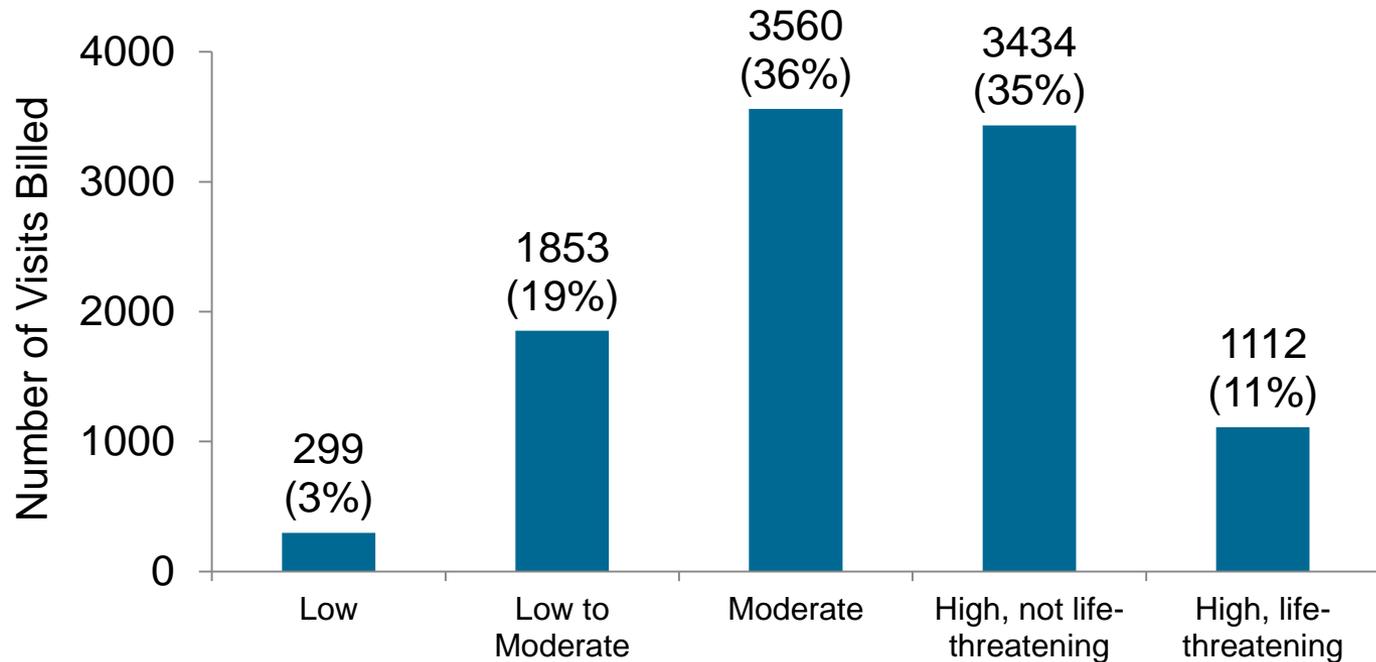
Asthma ED Visit: ED visit with an asthma primary diagnosis (ICD-9 493.00 –493.99)

What: ED Visits with Primary Diagnosis Asthma



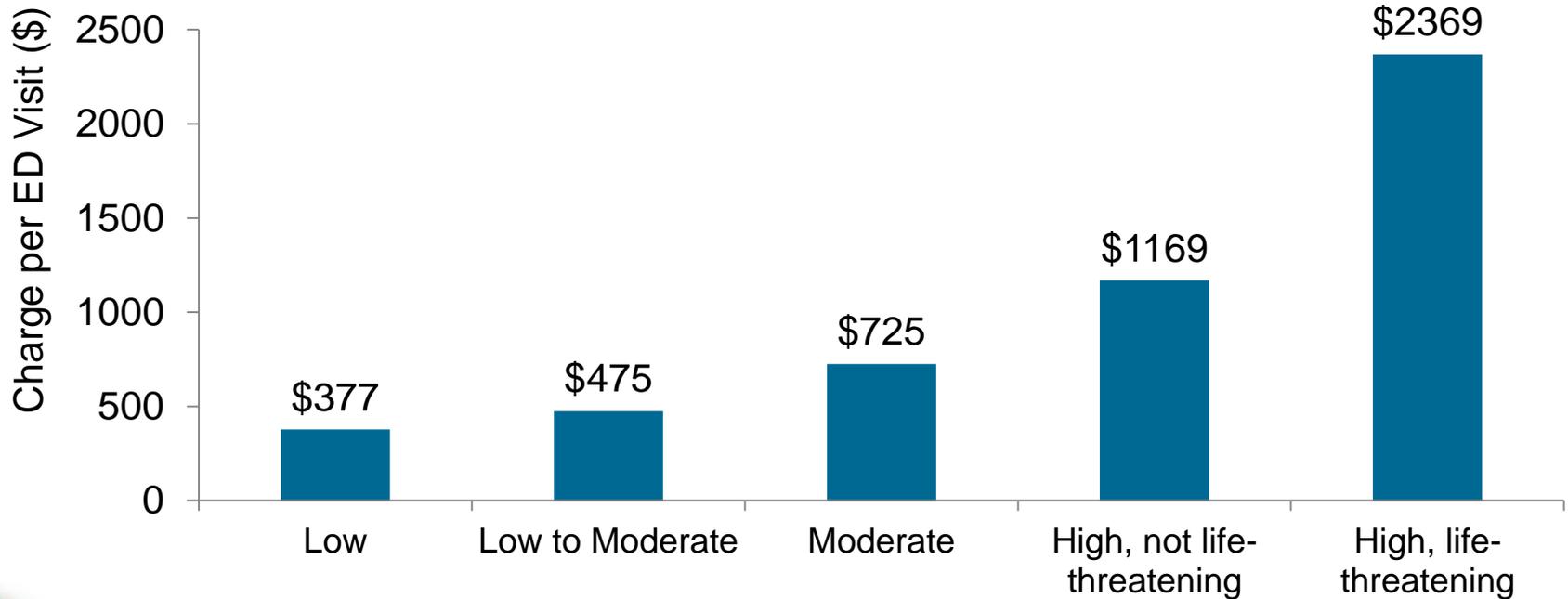
What: ED Visits with Primary Diagnosis Asthma

Evaluation and Management Codes:
ED Visit Severity (N = 9878)



What: ED Visits with Primary Diagnosis Asthma

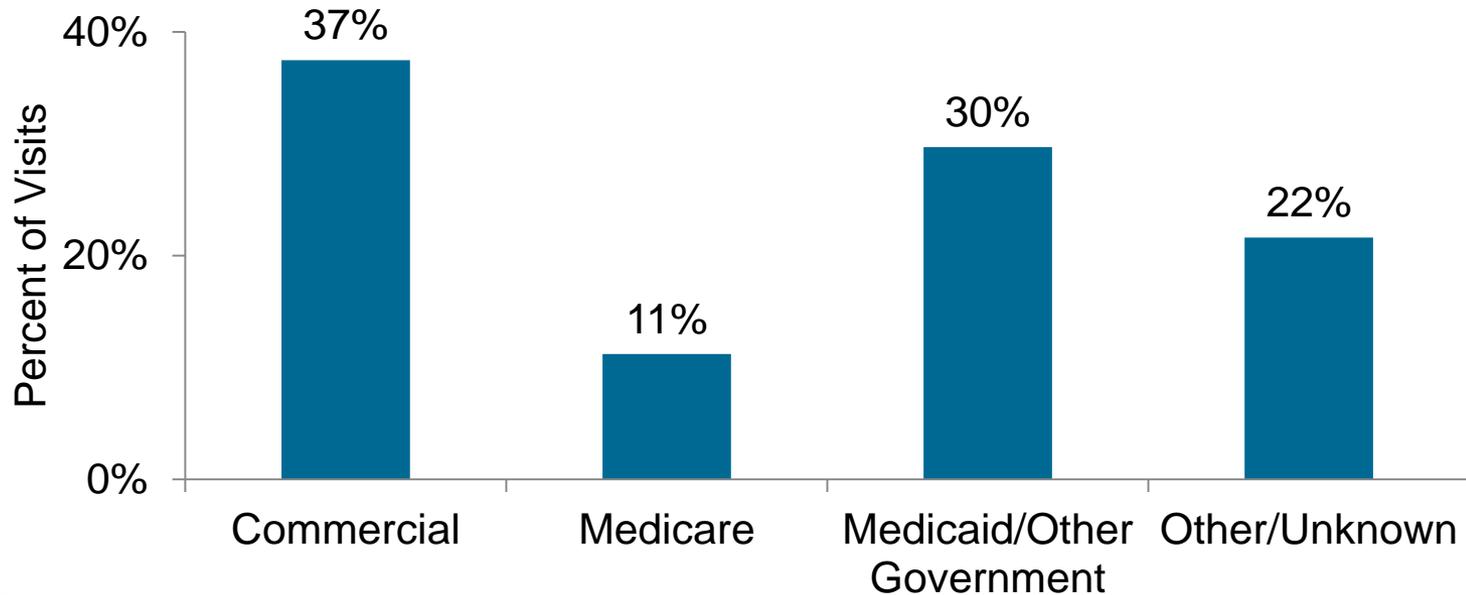
Average Total Charge by ED Visit Severity



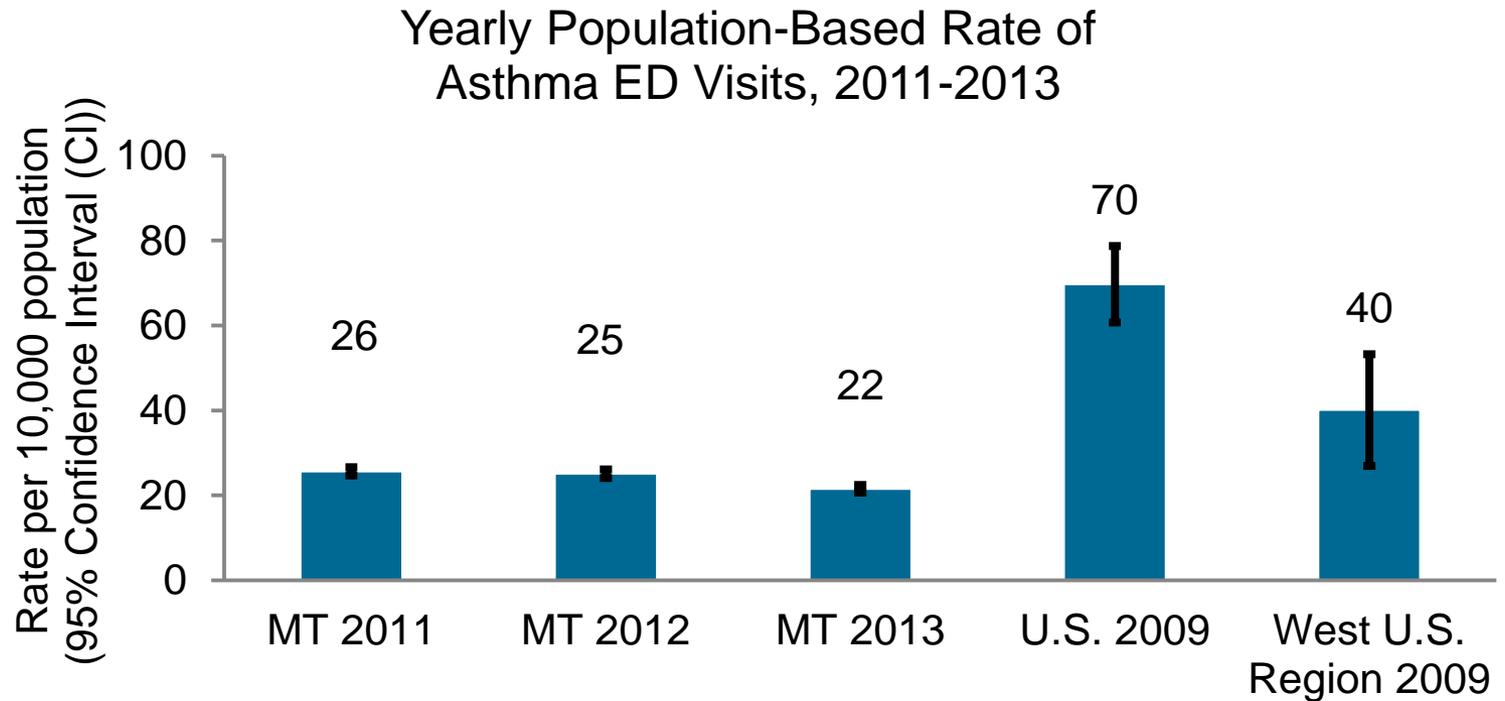
Average Total Charge: \$1019

What: ED Visits with Primary Diagnosis Asthma

Asthma ED Visits by Payer Class



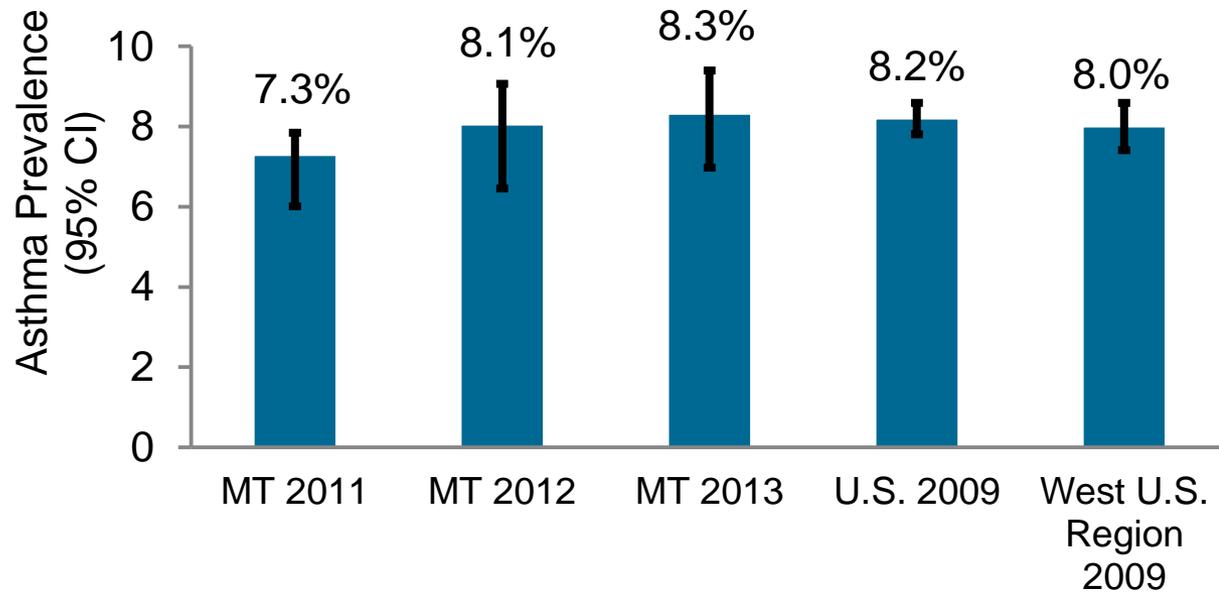
When: Trends over Time



National estimates are from the National Hospital Ambulatory Medical Care Survey.¹

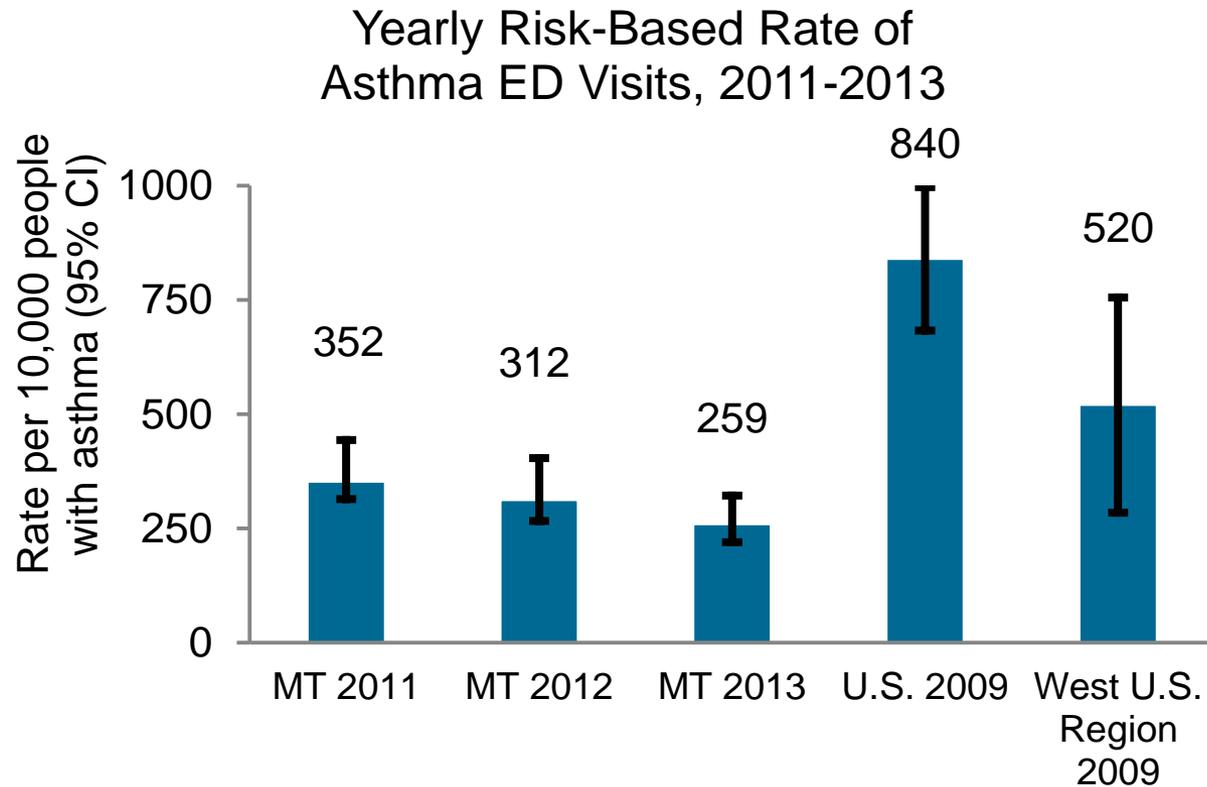
When: Trends over Time

Asthma Prevalence (Current Asthma) by Year

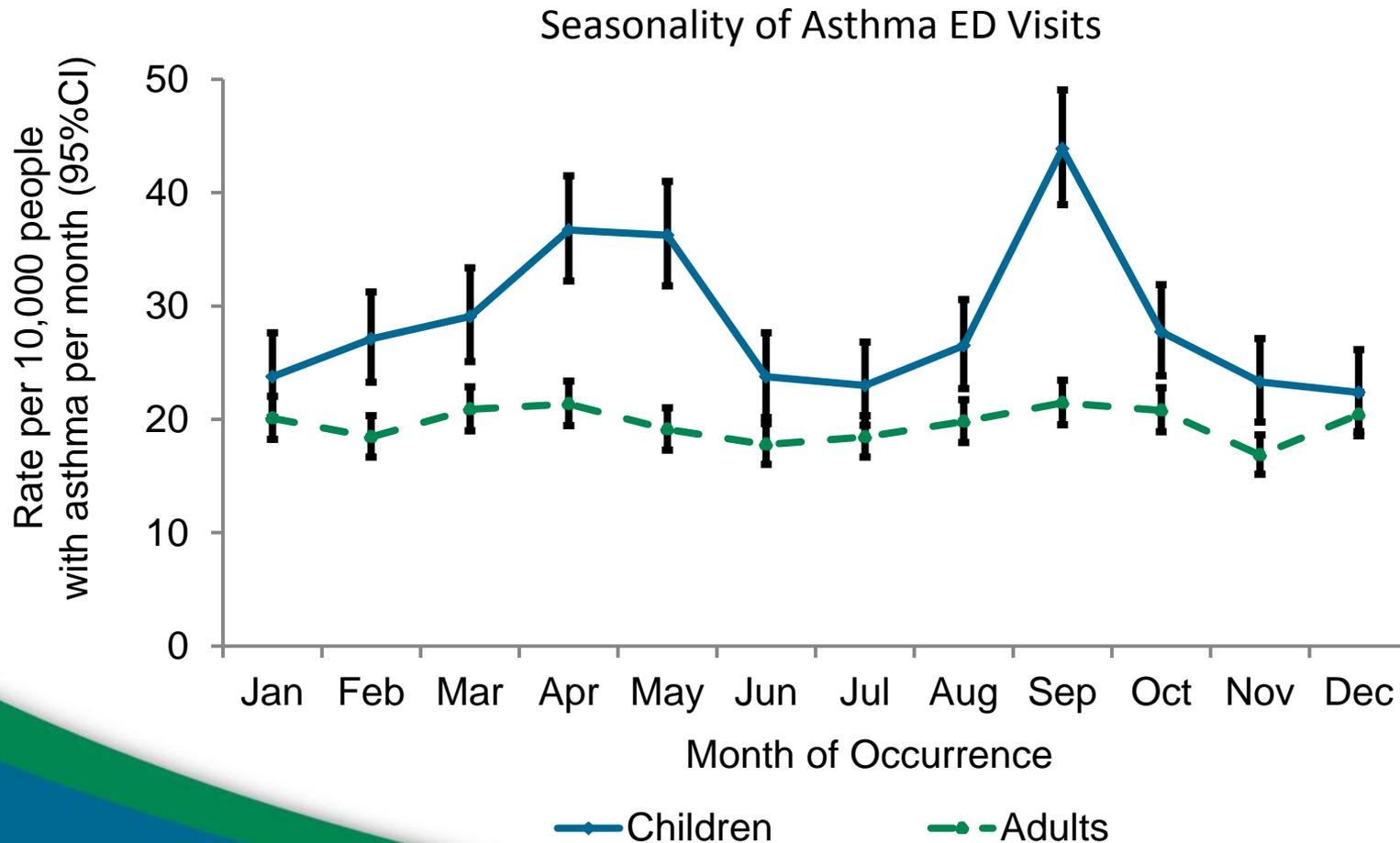


Montana prevalence estimates are from the MT BRFSS.² National prevalence estimates are from the National Health Interview Survey.¹

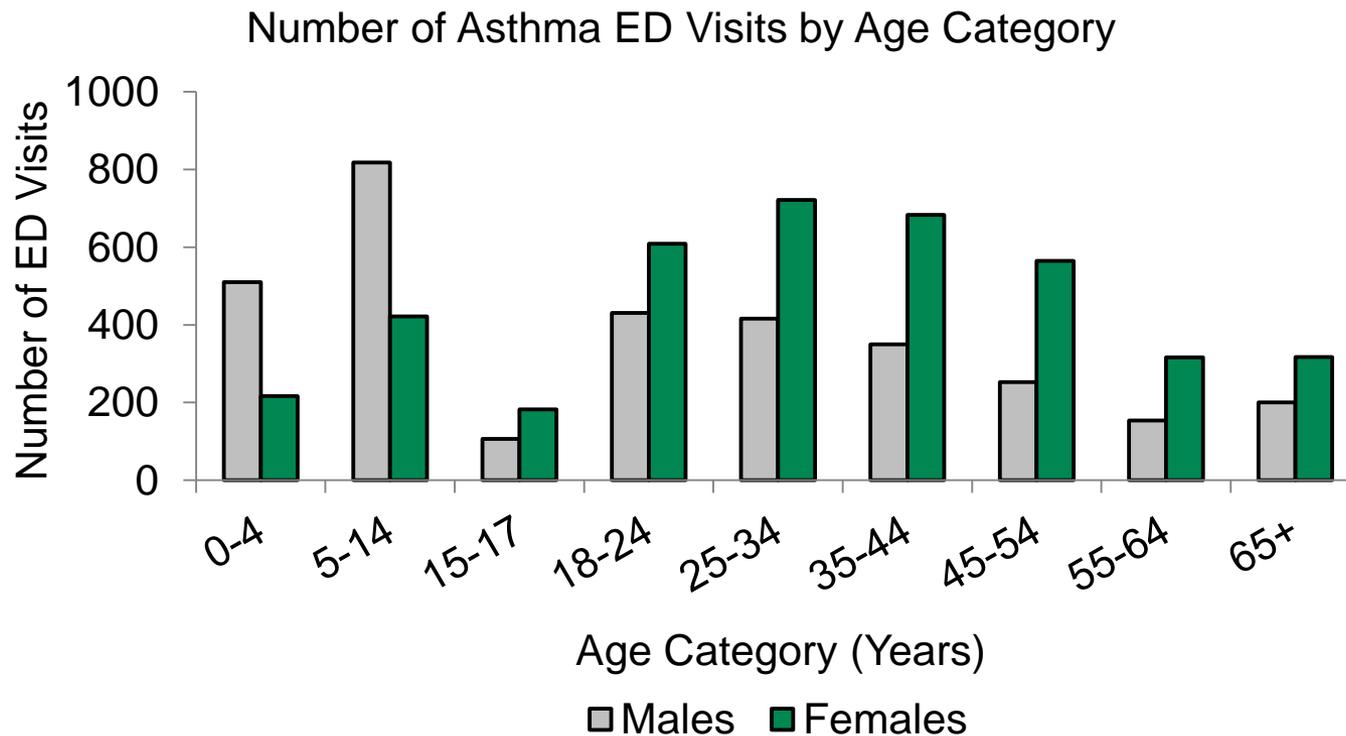
When: Trends over Time



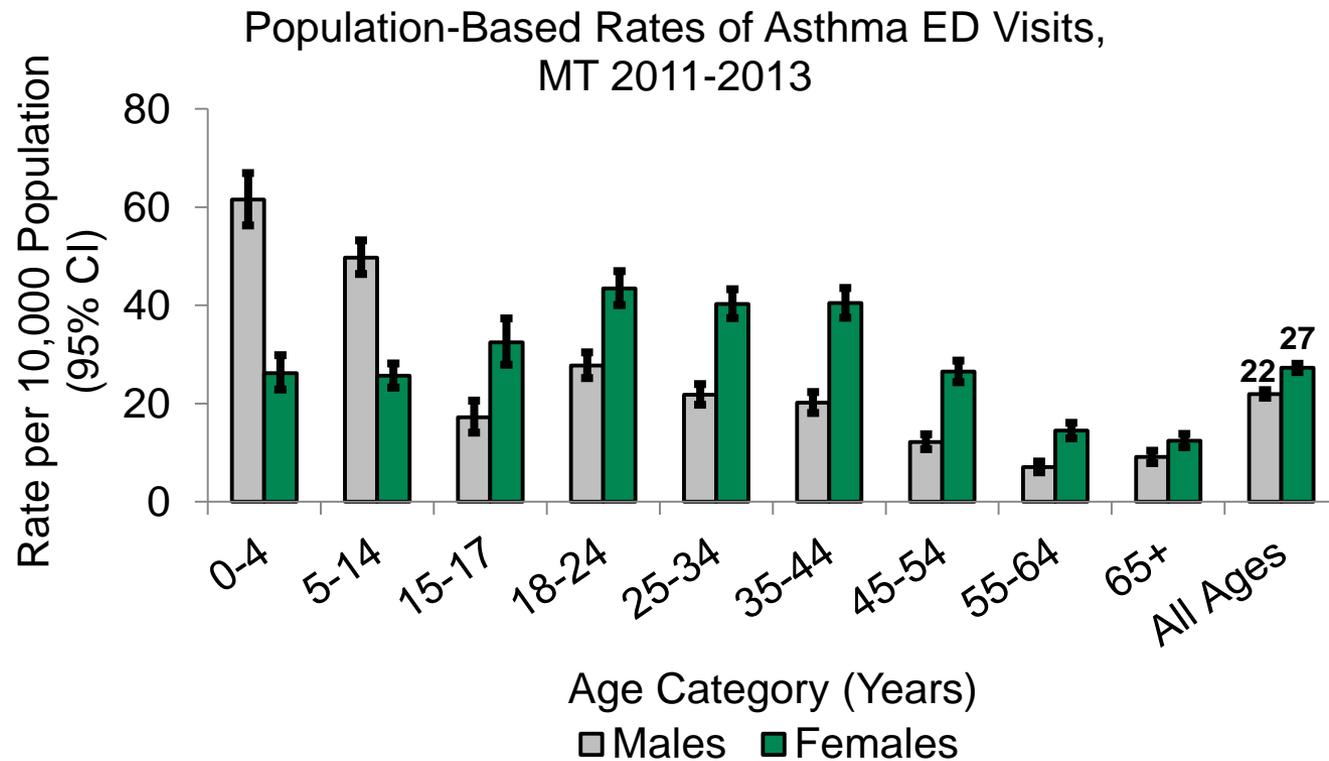
When: Trends over Time



Who: Age and Sex Distribution

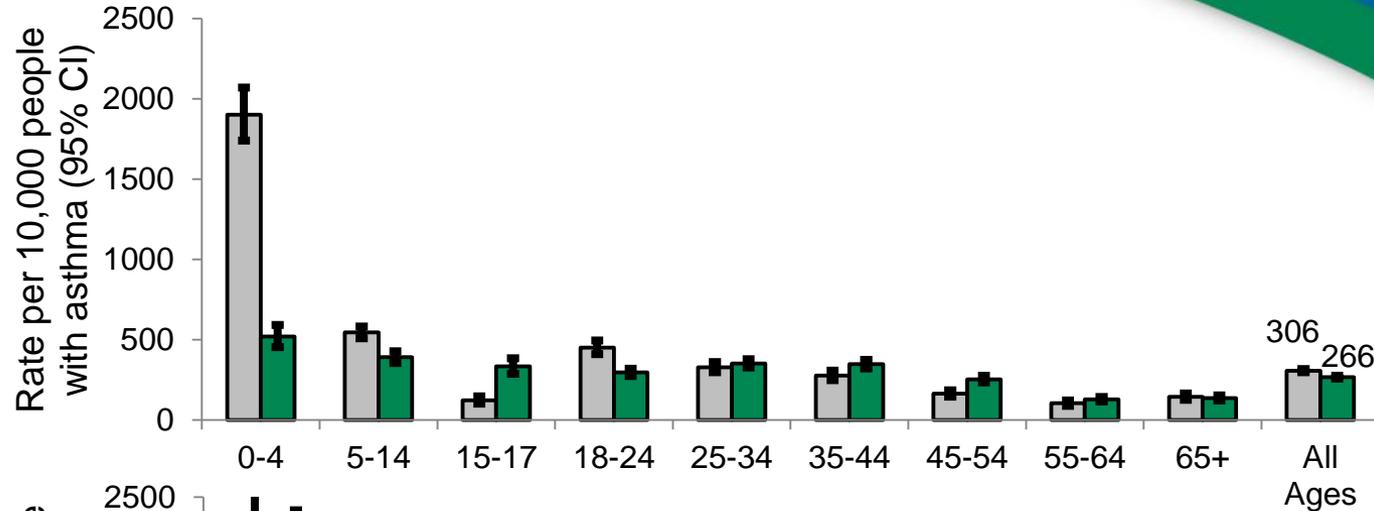


Who: Age and Sex Distribution

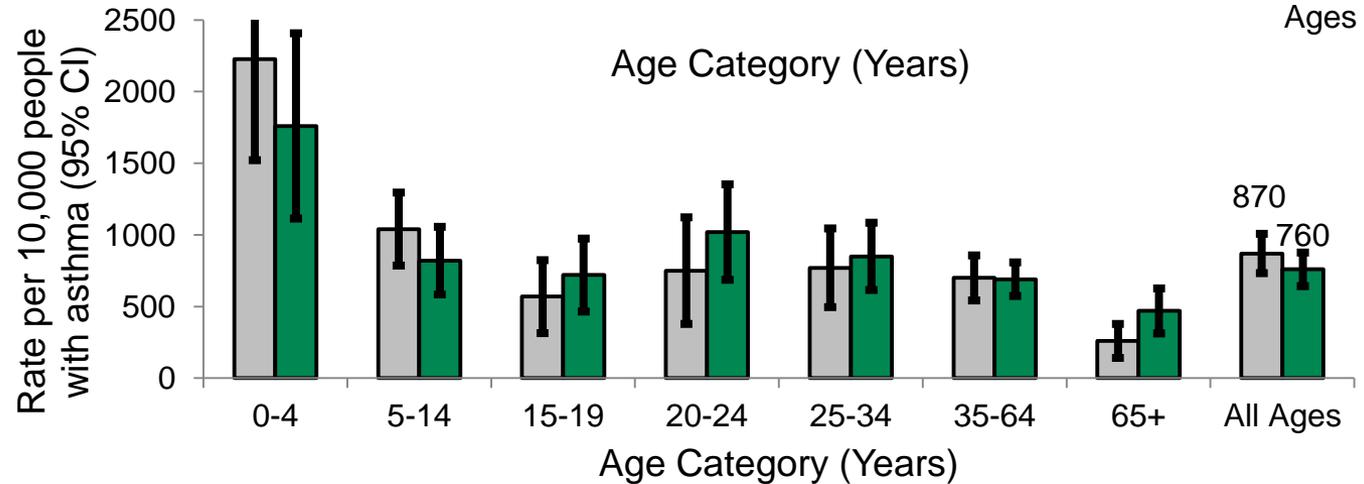


Who: Age and Sex Distribution

Risk-Based Rates of Asthma ED Visits, MT 2011-2013



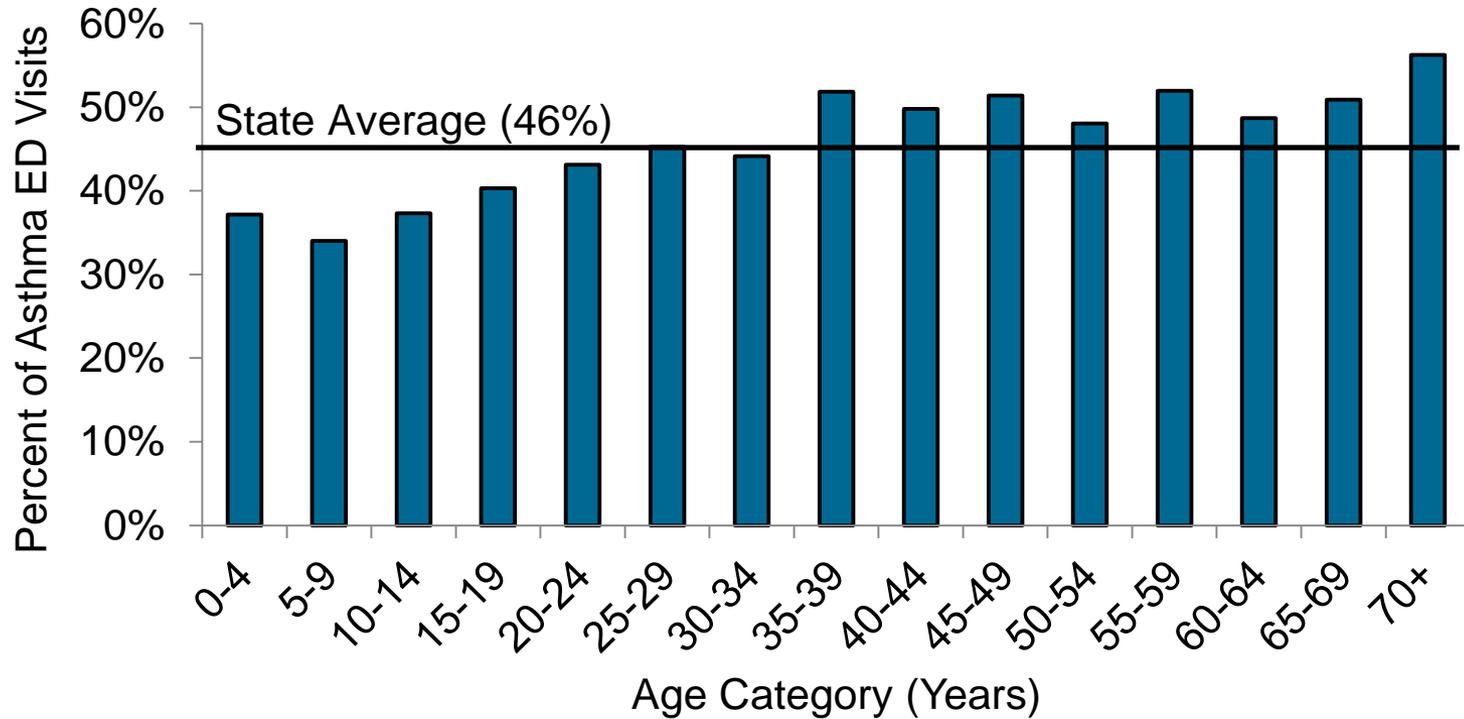
Risk-Based Rates of Asthma ED Visits, U.S. 2007-2009



□ Males ■ Females

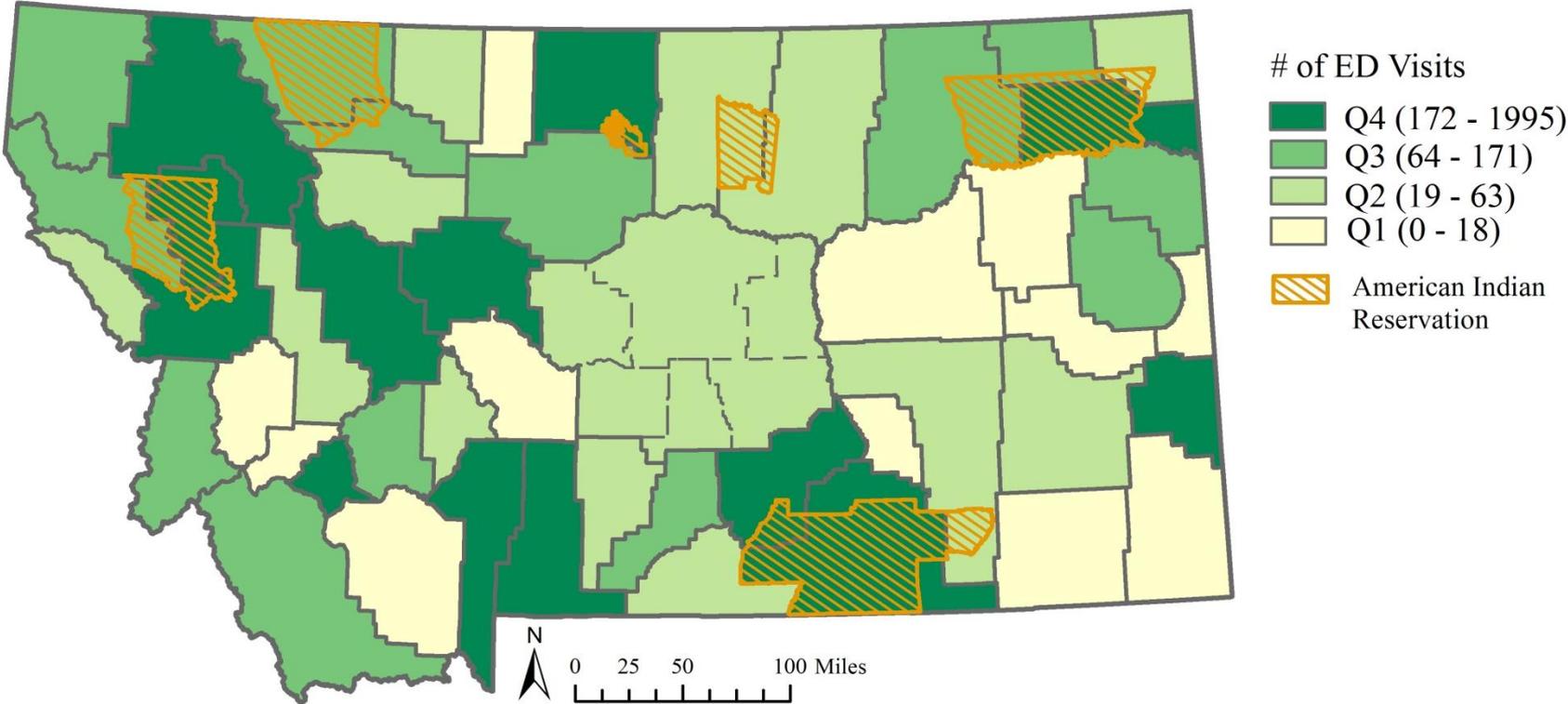
Who: Age and Sex Distribution

Proportion of Asthma ED Visits that are High Severity by Age



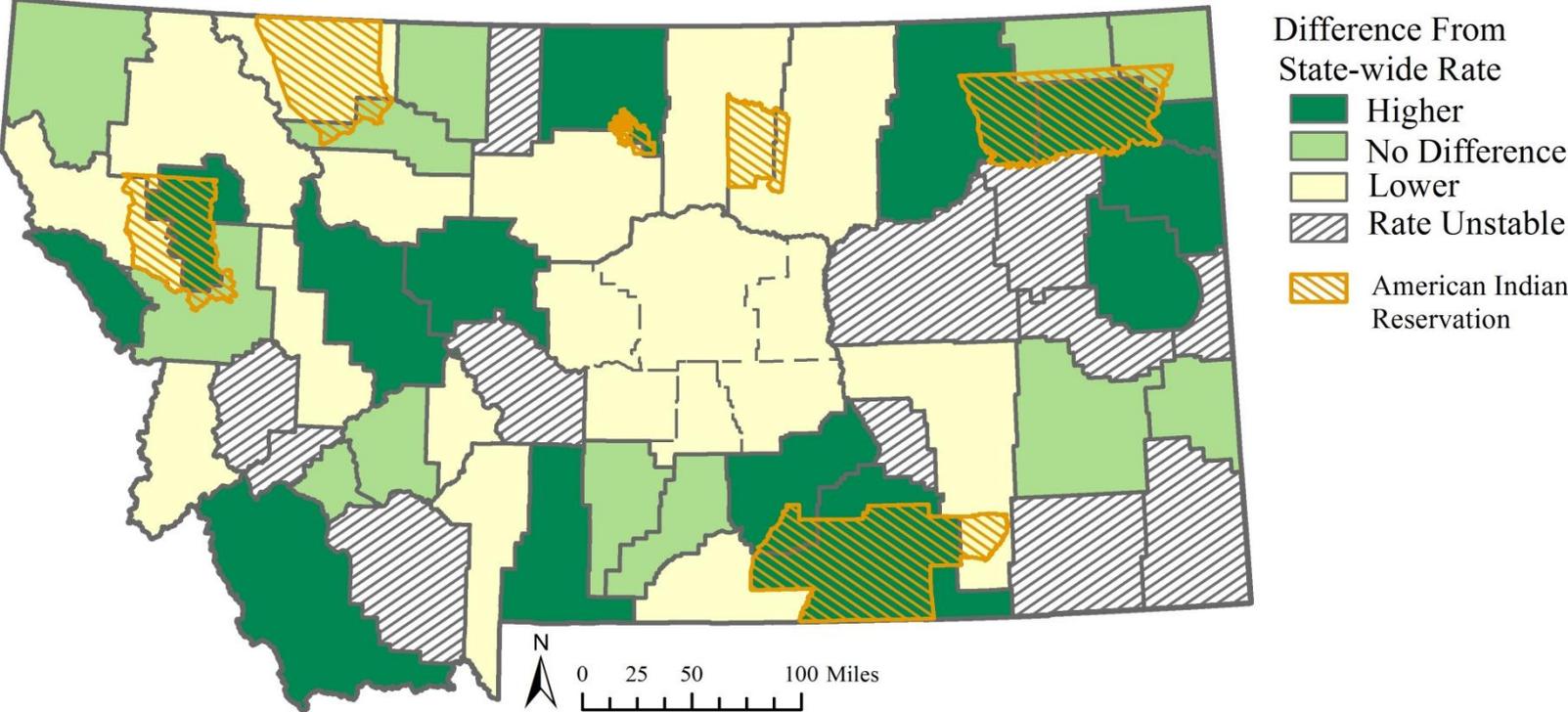
Where: Geographic Variation

Number of Asthma ED Visits by County, 2011-2013



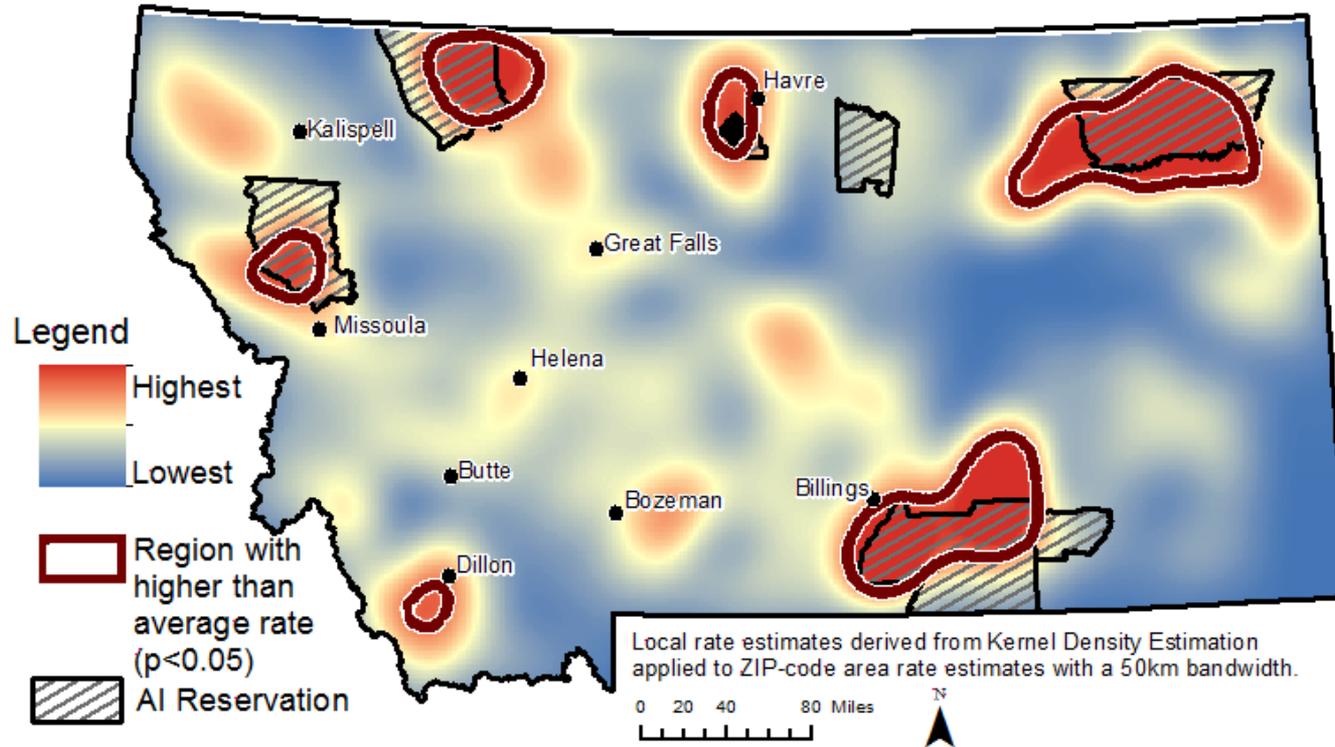
Where: Geographic Variation

Population-Based, Age-Adjusted Rate of Asthma ED Visits, 2011-2013



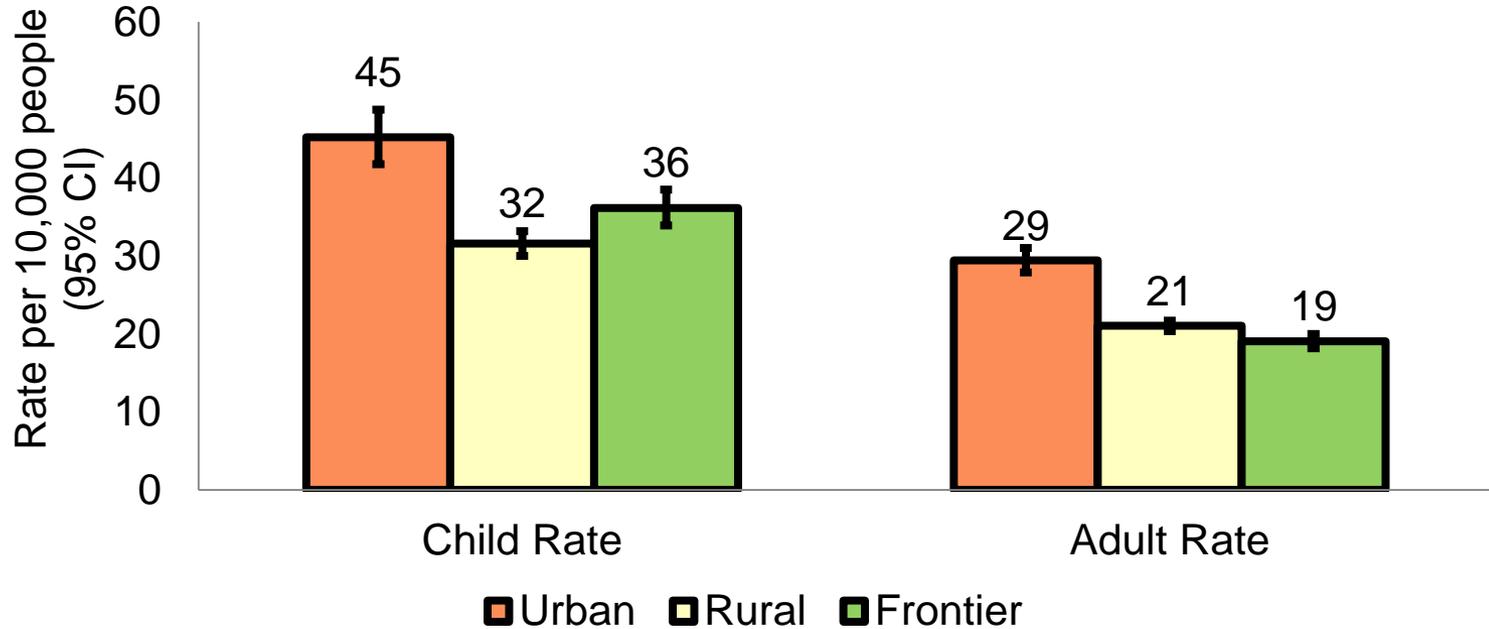
Where: Geographic Variation

Population-Based Rates of Asthma ED Visits, MT 2010-2013

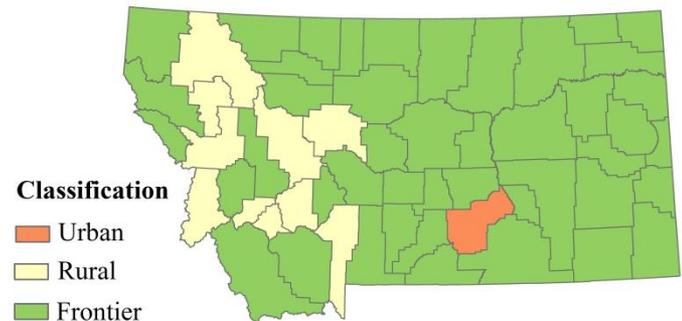


Where: Geographic Variation

Asthma ED Visits in Montana by Age and Region, 2010-2013

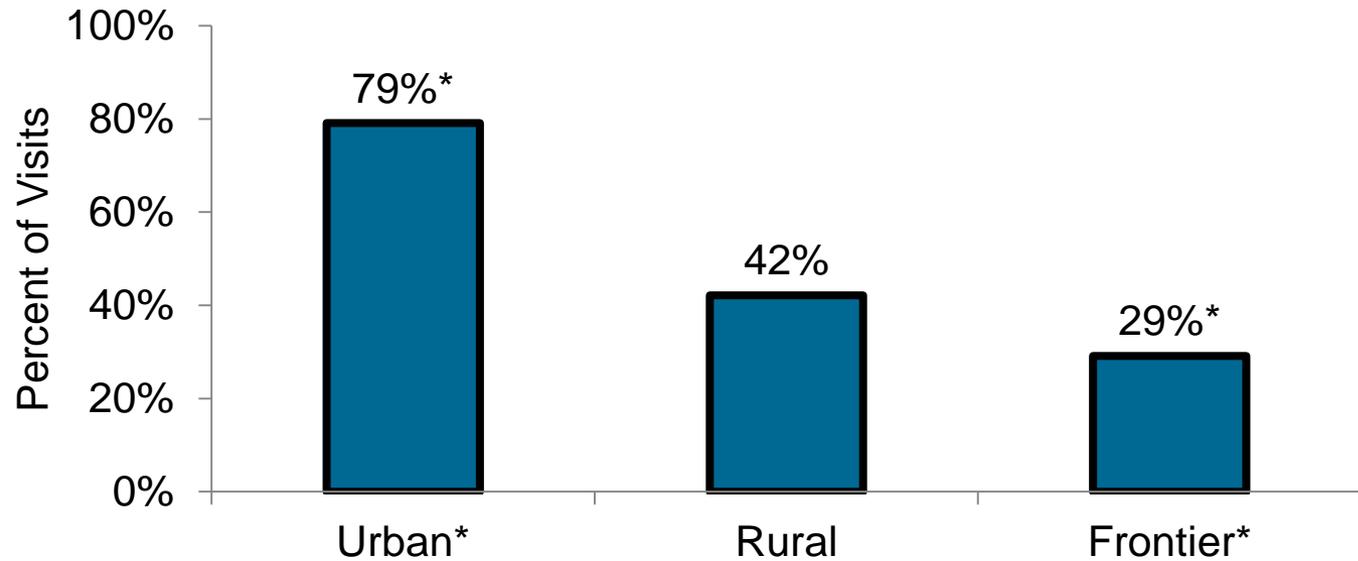


Urban/Rural/Frontier: County Classification



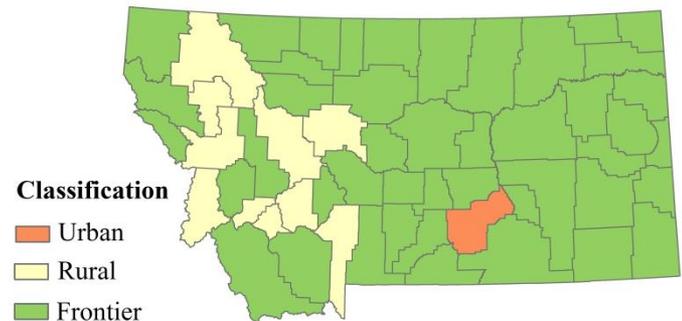
Where: Geographic Variation

Proportion of Asthma ED Visits that are High Severity by County Urban/Rural/Frontier Classification, 2010-2013



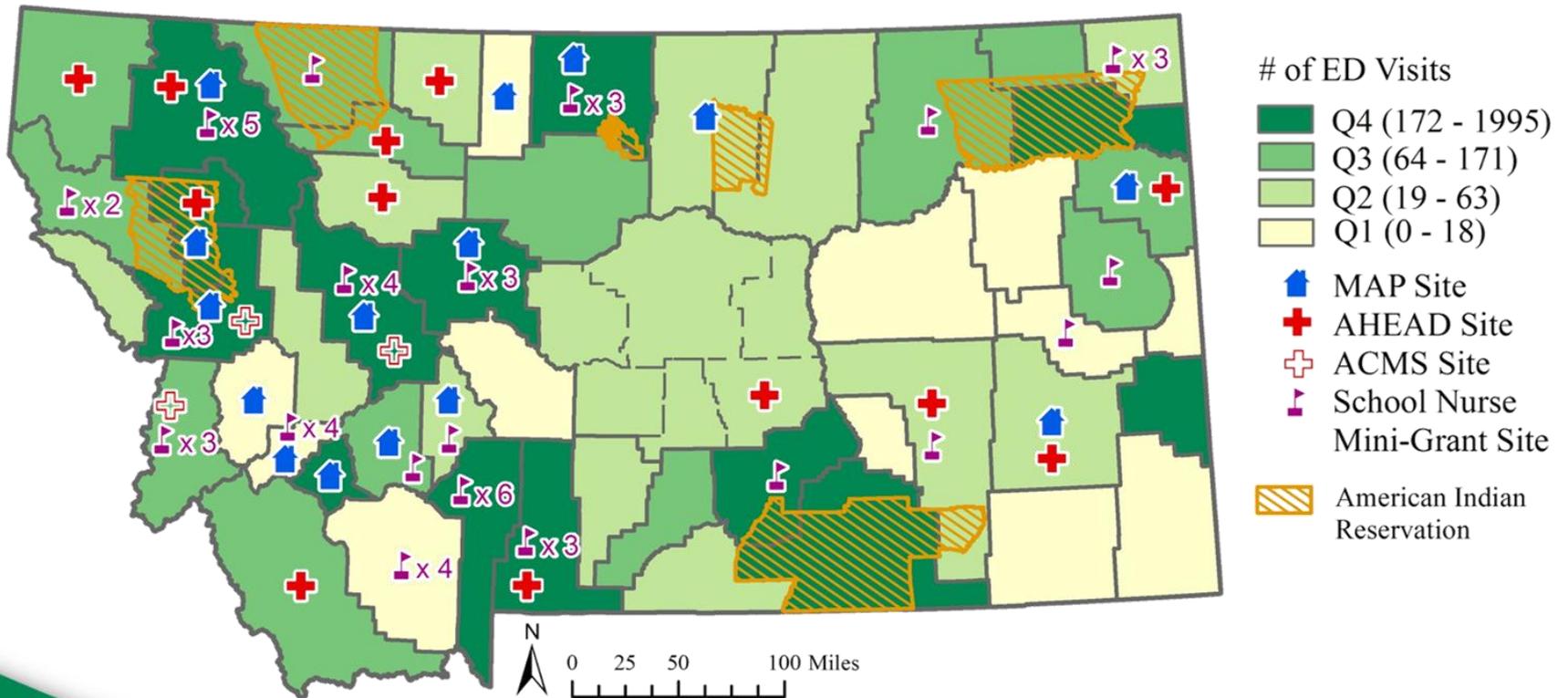
* Significant difference from rural ($p < 0.05$)

Urban/Rural/Frontier: County Classification



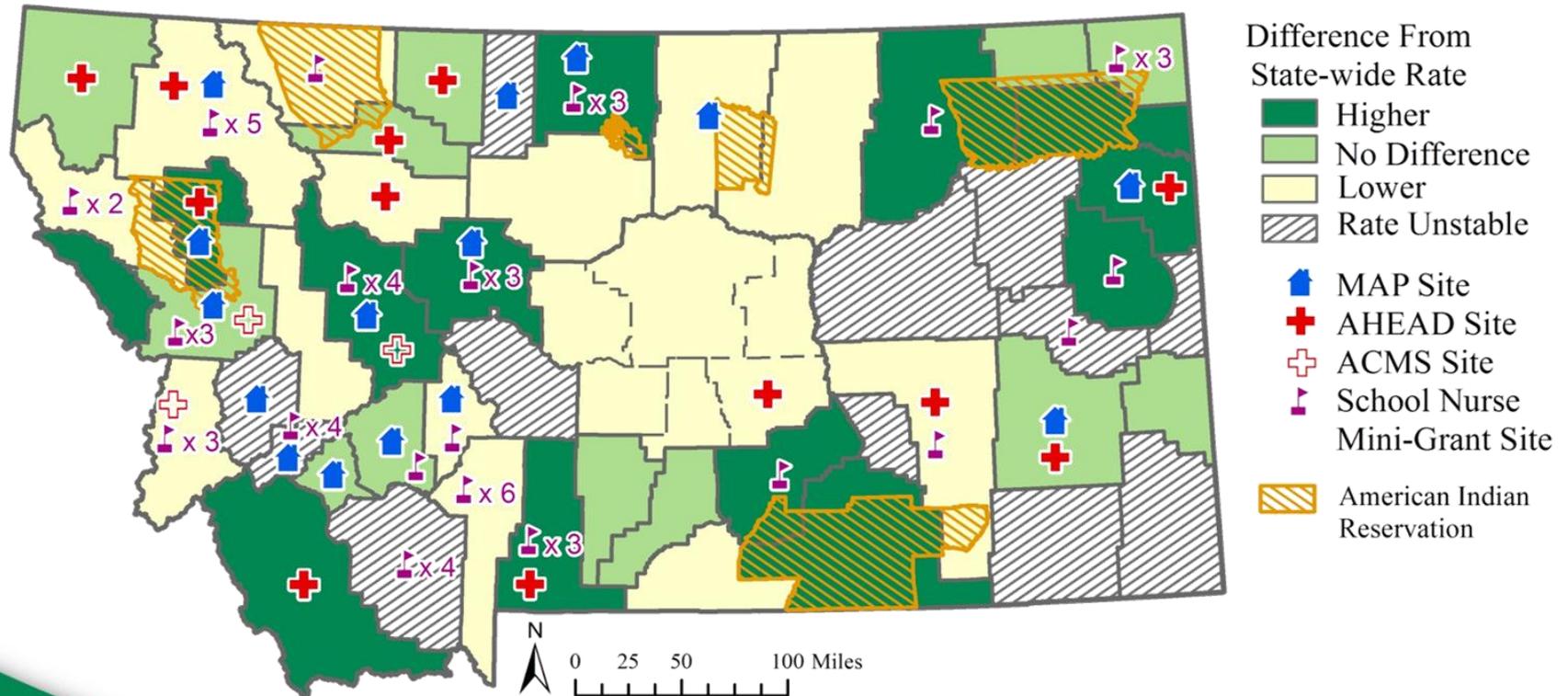
Where: MACP Services and Activities

MACP Activities and County Number of Asthma ED Visits by County, 2011-2013



Where: MACP Services and Activities

MACP Activities and County Population-Based Rate of Asthma ED Visits by County, 2011-2013



Questions

What, if anything, stands out as surprising or unexpected?

What isn't here that you would want to know about asthma ED visits?

Does this raise any questions about asthma exacerbation etiology or prevention?

How can we use this information to better target MACP activities to high-risk places and people?

Citations

- 1 Akinbami, LJ, et al. Trends in Asthma Prevalence, Health Care Use, and Mortality in the United States, 2001-2010. NCHS Data Brief. 94. May 2012.
- 2 Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2011-2013.

References

Asthma Emergency Department Visits: Variation in acute asthma exacerbations. Chronic Disease Surveillance Report. Montana DPHHS. January 2015.

National Surveillance of Asthma: United States, 2001-2010. Vital and Health Statistics. Nov. 2012; 3(35). Atlanta, GA: Centers for Disease Control and Prevention

Montana Asthma Control Program. The Burden of Asthma in Montana, 2013. Montana DPHHS. Available online.