

# Assessing Influenza Coverage Among Adolescents with Asthma

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*Funded through the Michigan Department of Community Health*

# Background

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- Adolescents with asthma:
  - are recommended to receive an annual influenza vaccination
  - may not make regular office visits
  - may be at increased risk for not receiving influenza vaccine

# Objective

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- To assess influenza vaccine coverage among a statewide cohort of adolescents with persistent asthma

# Methods Overview

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## **Study Design:**

Retrospective analysis of:

- Michigan Medicaid administrative claims and Michigan Childhood Immunization Registry (MCIR) vaccination records

## **Study population:**

- Adolescents 12-18 years with persistent asthma

## **Data source:**

- Michigan Department of Community Health data warehouse

# Methods Overview

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## **Outcomes measured:**

- percent of adolescents with evidence of influenza vaccination during 2001

## **Statistical analysis:**

- univariate descriptive statistics
- bivariate analyses using chi-square tests of association

# Methods

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## **Persistent asthma cases:**

- identified using NCQA HEDIS criteria
- ICD-9 CM dx code = 493.xx for these services:
  - Outpatient visits
  - Emergency department visits
  - Inpatient admissions
- use of asthma medications, specified by National Drug Code

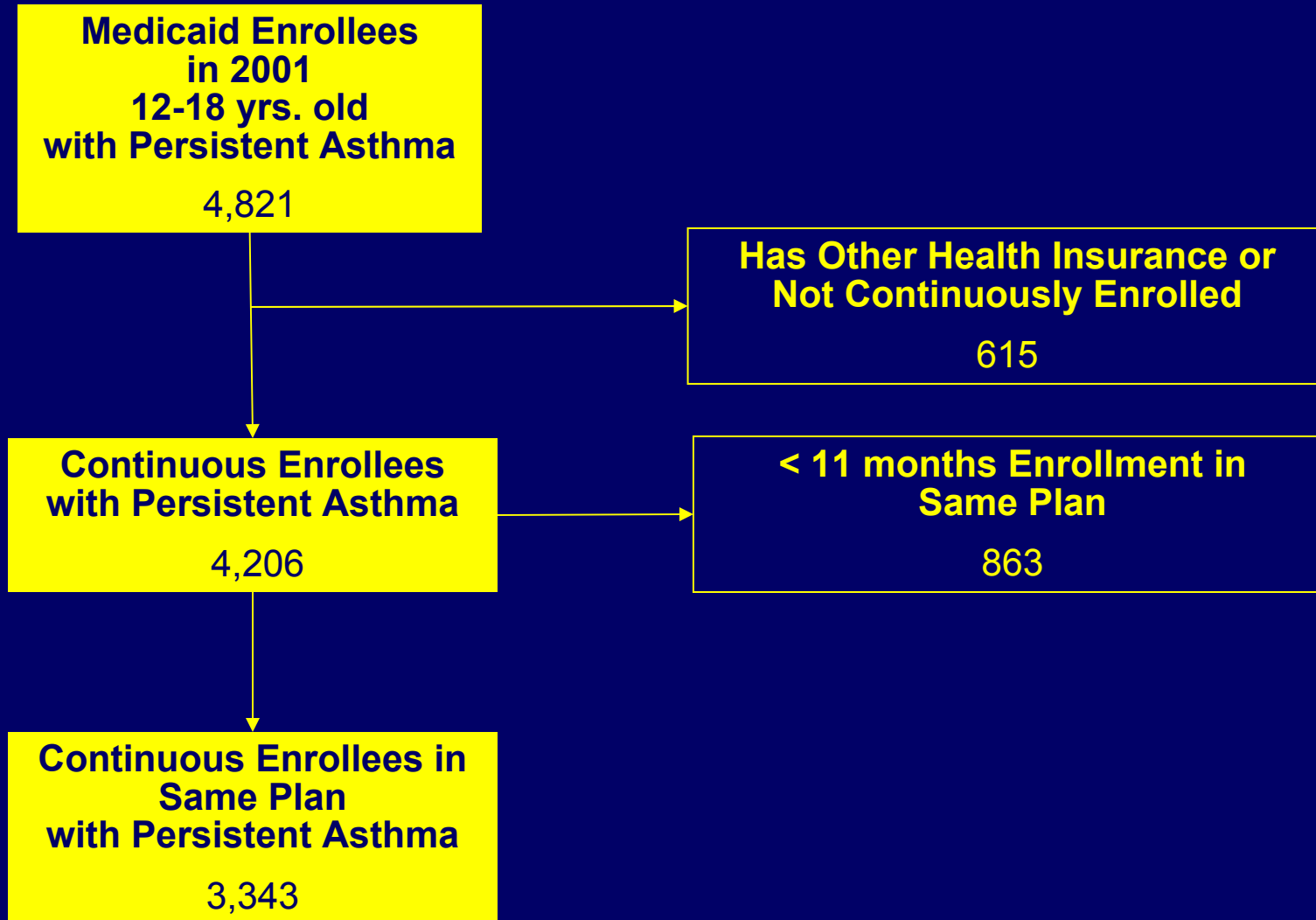
# Methods

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## **Influenza vaccine doses identified from two sources:**

- Medicaid administrative claims, based on CPT procedure code
- MCIR historical data for influenza vaccine doses

# Study Population





# Study Population

<b>Characteristic</b>	<b>Enrollees</b> n = 4,206 (%)
12-14 Yrs.	52
15-18 Yrs.	48
Male	53
White	46
Black	49
All Others	5
Urban Location	83
Same Health Plan ≥ 11 Months	80

# Results

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- Overall, 368 (9%) of adolescents had evidence of influenza vaccination
- Most evidence of influenza vaccination was obtained from claims:
  - Claims only 63%
  - Claims and MCIR 23%
  - MCIR only 14%

# Results

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- The majority of influenza vaccinations were administered to:
  - children 12-14 yrs. 57%
  - children in urban areas 77%
  - continuous plan enrollees 63%

# Vaccination Rates by Age

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<b>Characteristic</b>		<b>Children with Persistent Asthma (n=4,206)</b>	<b>Influenza Vaccination Rate (%)</b>
<b>Age (years)</b>	<b>12-14</b>	2,182	10

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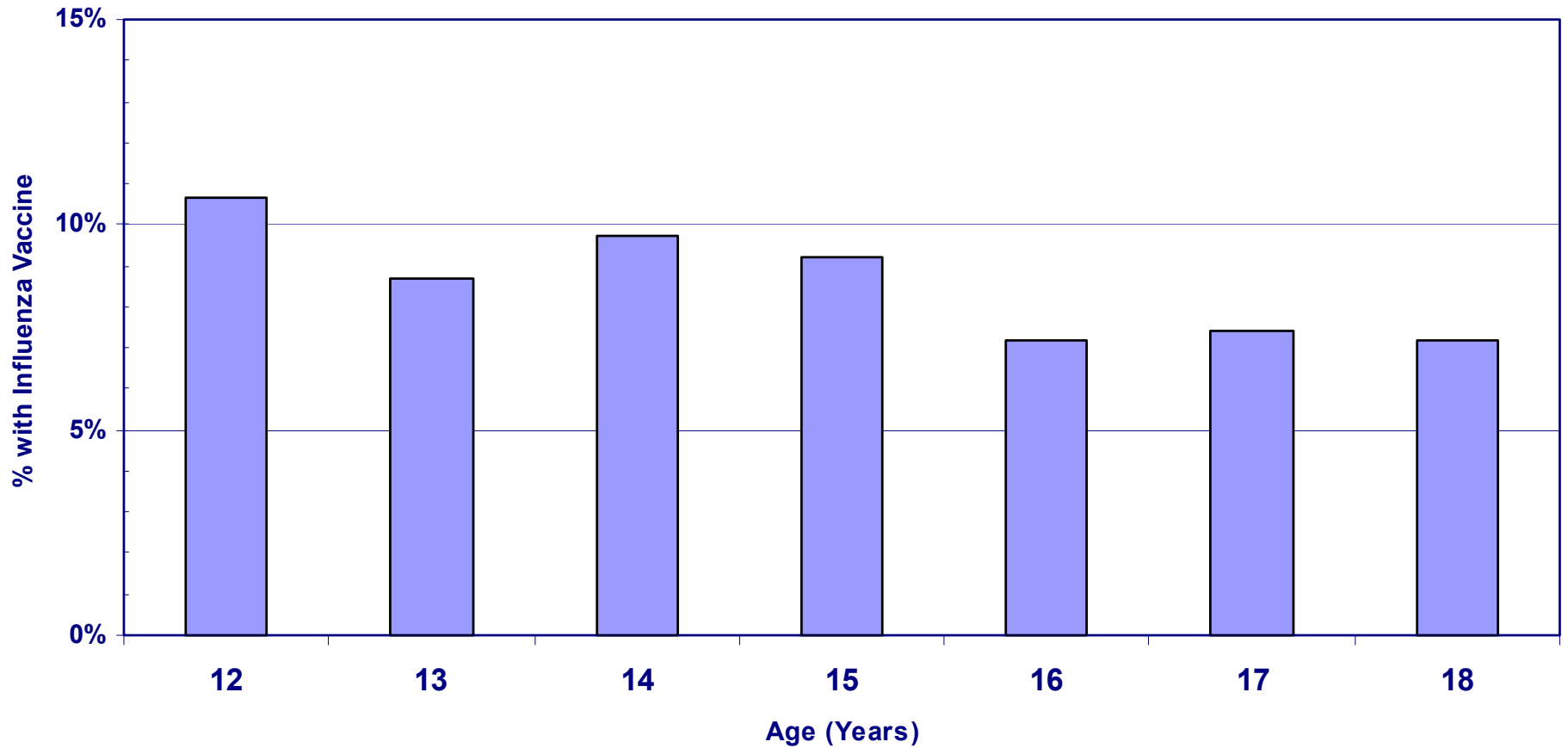
# Vaccination Rates by Age

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<b>Age (years)</b>	<b>12-14</b>	2,182	10
	<b>15-18</b>	2,024	8

**2001 Influenza Vaccination Coverage**  
**Medicaid Enrollees 12-18 yrs. with Persistent Asthma**  
(n = 4,206)

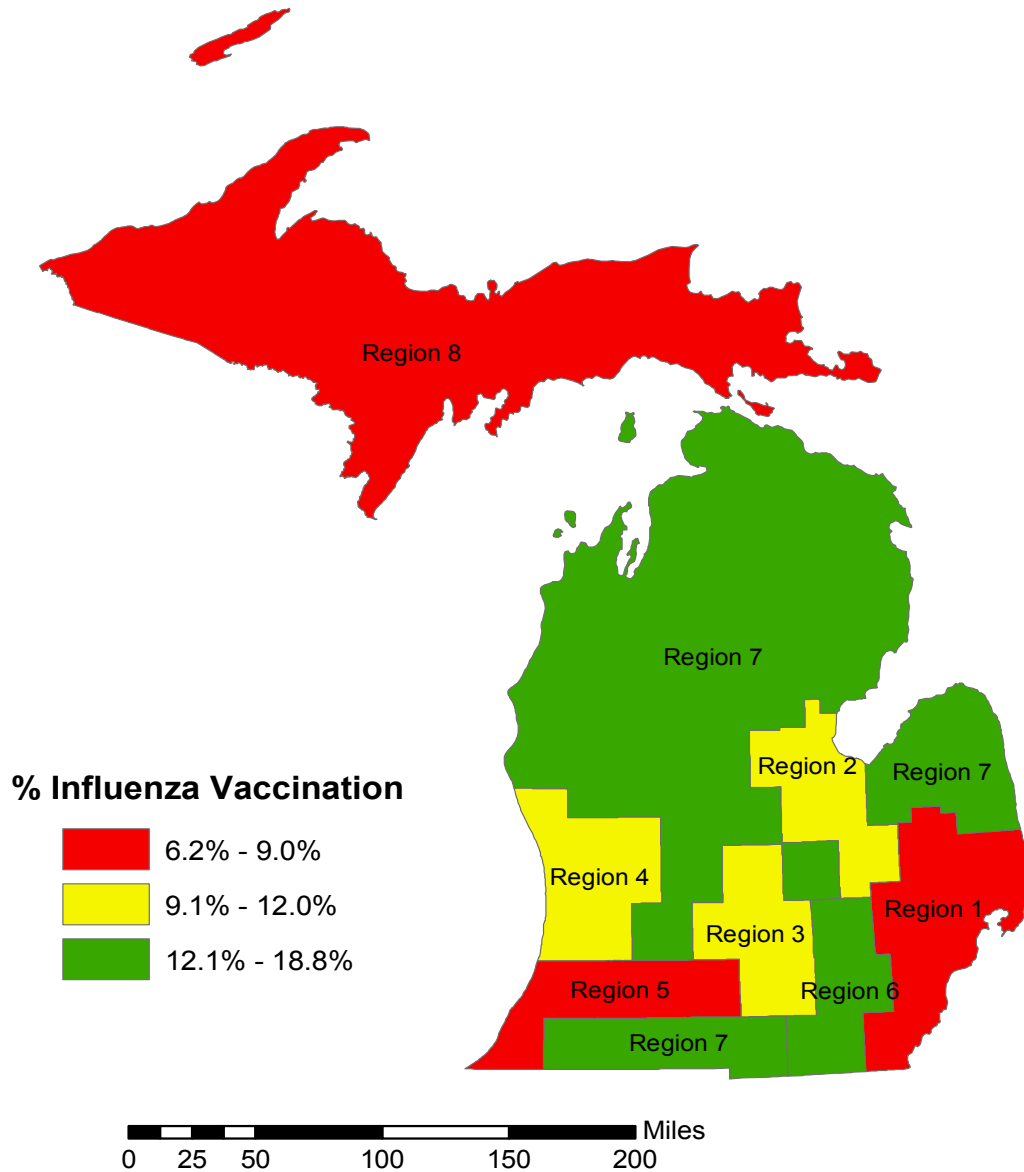


# Vaccination Rates by Geographic Region

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- Substantial variation across regions of the state:
  - Highest 19%
  - Lowest 6%
- Urban areas had lower rates:
  - Urban 8%
  - Non-Urban 12%

# Variation by Region





# Vaccination Rates by Enrollment Duration

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<b>Characteristic</b>	<b>Children with Persistent Asthma (n=4,206)</b>	<b>Influenza Vaccination (%)</b>
<b>Same Plan ≥11 months</b>	<b>3,343</b>	<b>10</b>

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# Vaccination Rates by Enrollment Duration

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<b>Characteristic</b>	<b>Children with Persistent Asthma (n=4,206)</b>	<b>Influenza Vaccination (%)</b>
<b>Same Plan ≥11 months</b>	3,343	10
<b>&lt;11 months</b>	863	6

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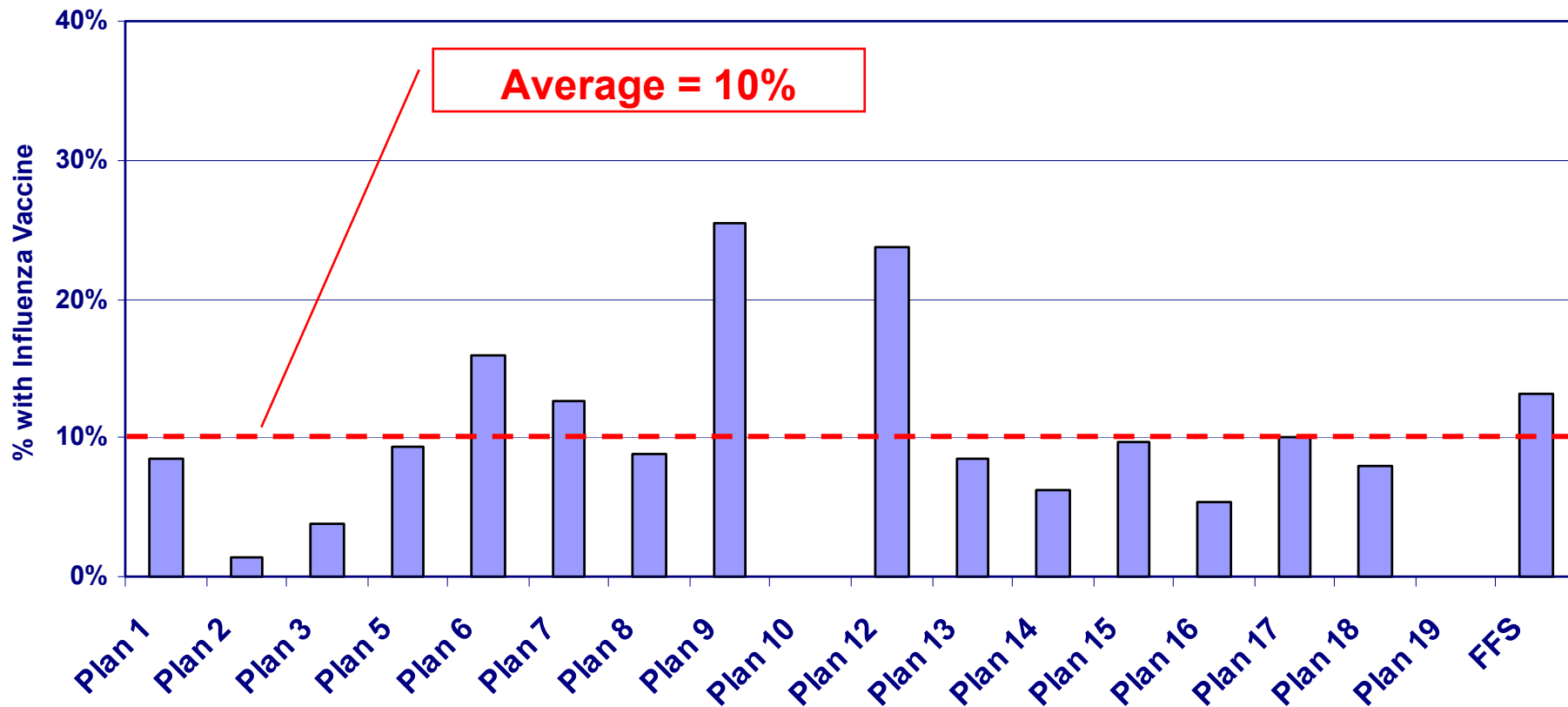
# Vaccination Rates by Plan

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- Analysis of health plans focused on:
  - subset of continuous enrollees in same plan
  - 3,343 adolescents (80% of total)
- Influenza vaccination rate ranges across plans:
  - Highest 26%
  - Lowest 0%
  - FFS 13%

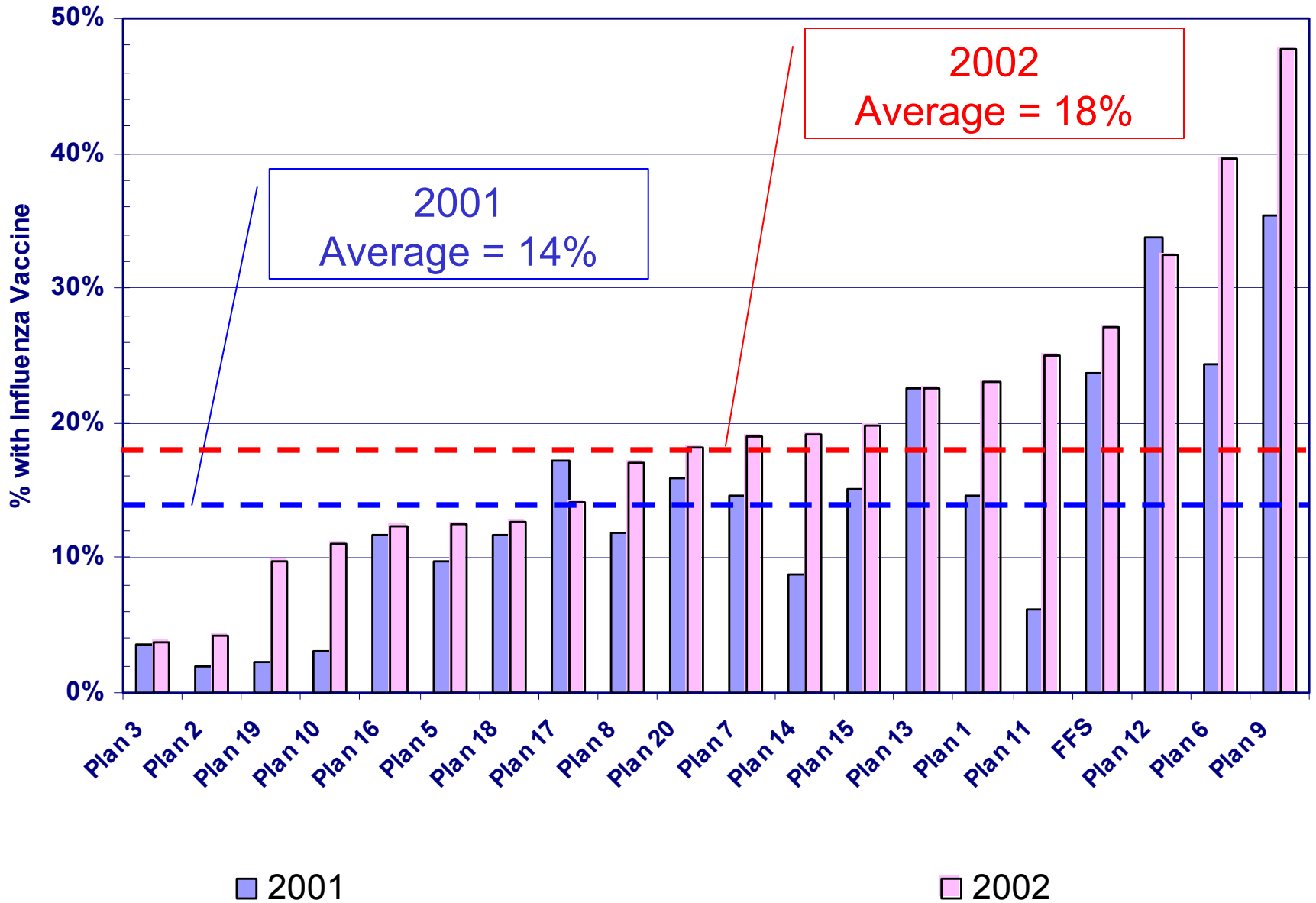
# 2001 Influenza Vaccination Coverage Medicaid Enrollees 12-18 yrs. with Persistent Asthma

(n = 3,343)



# Influenza Vaccine Coverage

## Children 3-18 yrs. with Persistent Asthma 2001-2002



# Limitations

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- Results reflect Medicaid enrollees only
- Vaccination rates may be affected by completeness of claims reporting by plans

# Conclusions

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- Influenza vaccination among adolescents with asthma is very low
- Wide variations in influenza vaccination exist between geographic regions and health plans

# Implications

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- It may be feasible to target high-risk populations for:
  - outreach activities such as reminder / recall notices to improve influenza vaccination rates
  - “inreach” during visits to provider offices



# Implications

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- Immunization registries may be used to target high-risk populations
- Administrative claims may provide a means to identify Medicaid enrollees with asthma in state immunization registries

# Questions?

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