

# Use of Dormant Indicator to Address Denominator Inflation in the Wisconsin Immunization Registry

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WISCONSIN DEPARTMENT  
*of* HEALTH SERVICES

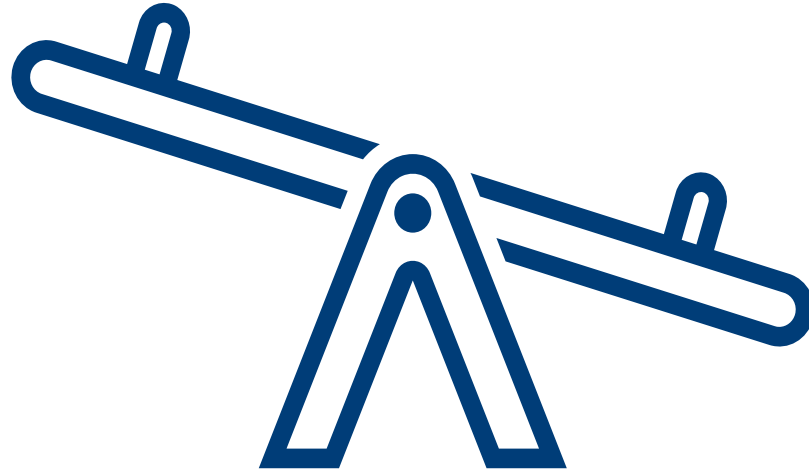
# Background

- The Wisconsin Immunization Registry's (WIR) client population is inflated by:
  - Duplicate clients.
  - Fragmented records.
  - Clients moving out-of-jurisdiction but not reporting their address change to WIR.

# Denominator Inflation (DI)

5,892,539

WI Census  
Population  
Estimate

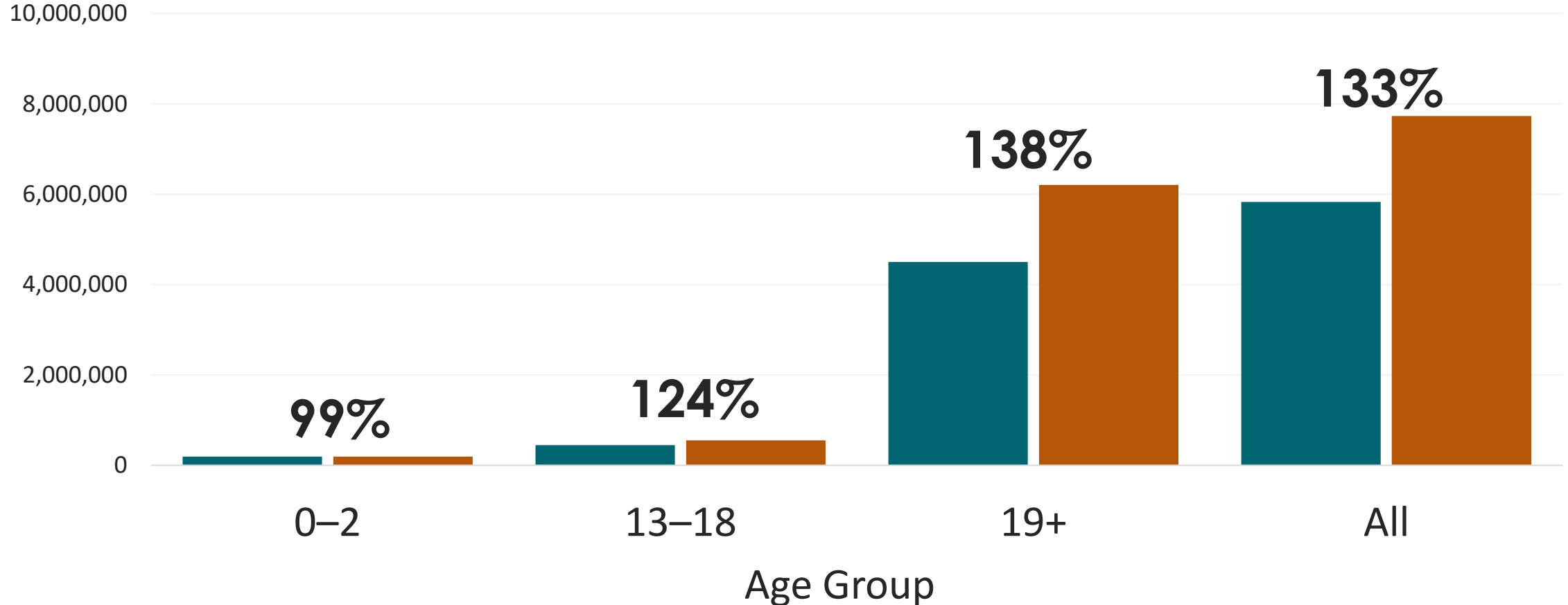


8,156,400

WIR  
Population

# DI is Worse in Older Cohorts

Wisconsin Census Population Estimate  
compared to the WIR Population



To mitigate DI, WIR  
implemented a dormant  
state in June 2020.

# Dormant State Criteria

- Client age is at least 11 years old.
- No updates to the client record in at least 10 years.
- Record has not been queried in the last five years.

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# Dormant State

- Automatically applied through nightly audit process.
- Not a status that can be changed by local or tribal health departments or providers.

**How does the dormant state  
differ from the Patient  
Active/Inactive Status  
(PAIS)?**

# PAIS

- Listed in WIR as ACTIVE\_IND
  - A = Active
  - M = Moved
  - N = Inactive
  - P = Permanently inactive/Deceased

# Dormant State

- Listed in WIR as DORMANT\_IND
  - N = Non-dormant
  - Y = Dormant
- Only available to DPH WIR users

**How does the dormant state  
impact routine vaccination  
coverage rates?**

# Data Collection

- Study population from WIR included Wisconsin adolescents aged 13 to 18 years old.
- Immunization history included any vaccines administered between birth through December 2022.

# Measures

- Vaccination coverage assessments on:
  - MenACWY ( $\geq 1$ )
  - HPV ( $\geq 1$ )
  - HPV (UTD)
  - Tdap ( $\geq 1$ )

# Analysis

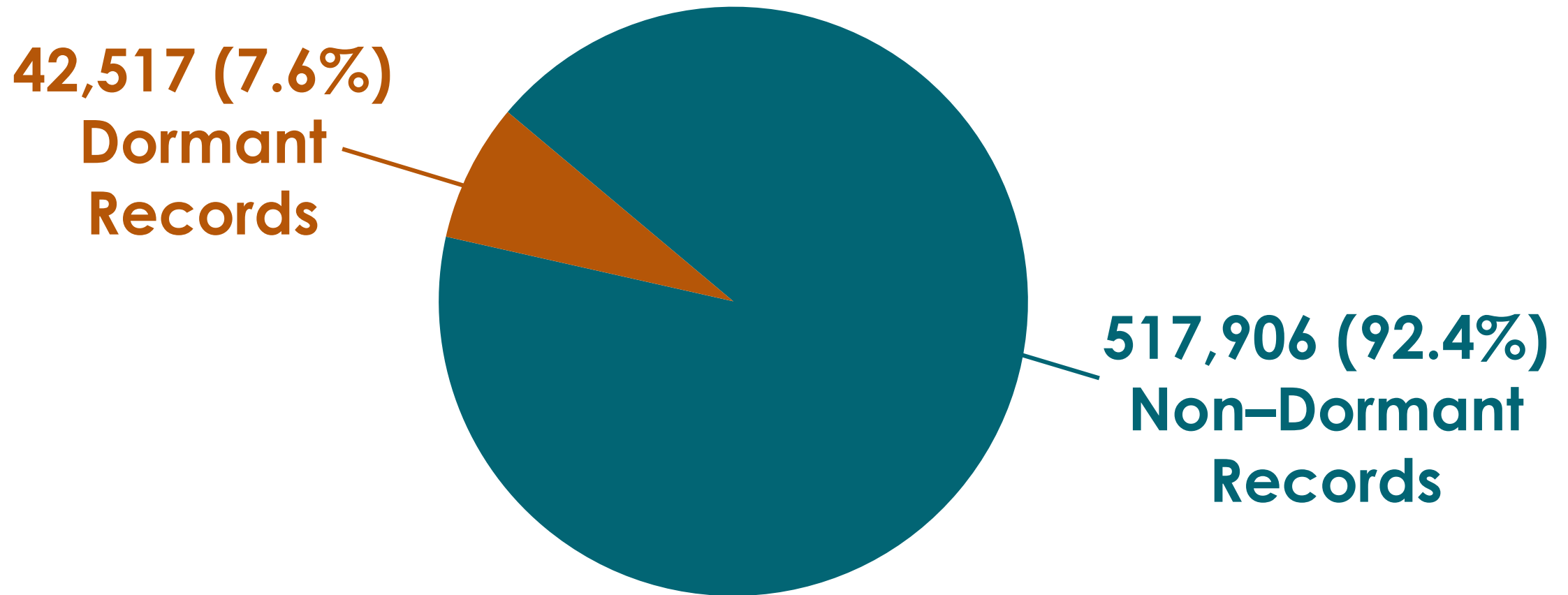
- Compared WIR vaccination coverage estimates, with and without dormant clients, to 2022 NIS-Teen estimates.
- Generated descriptive statistics of dormant and non-dormant client records.

# Analysis

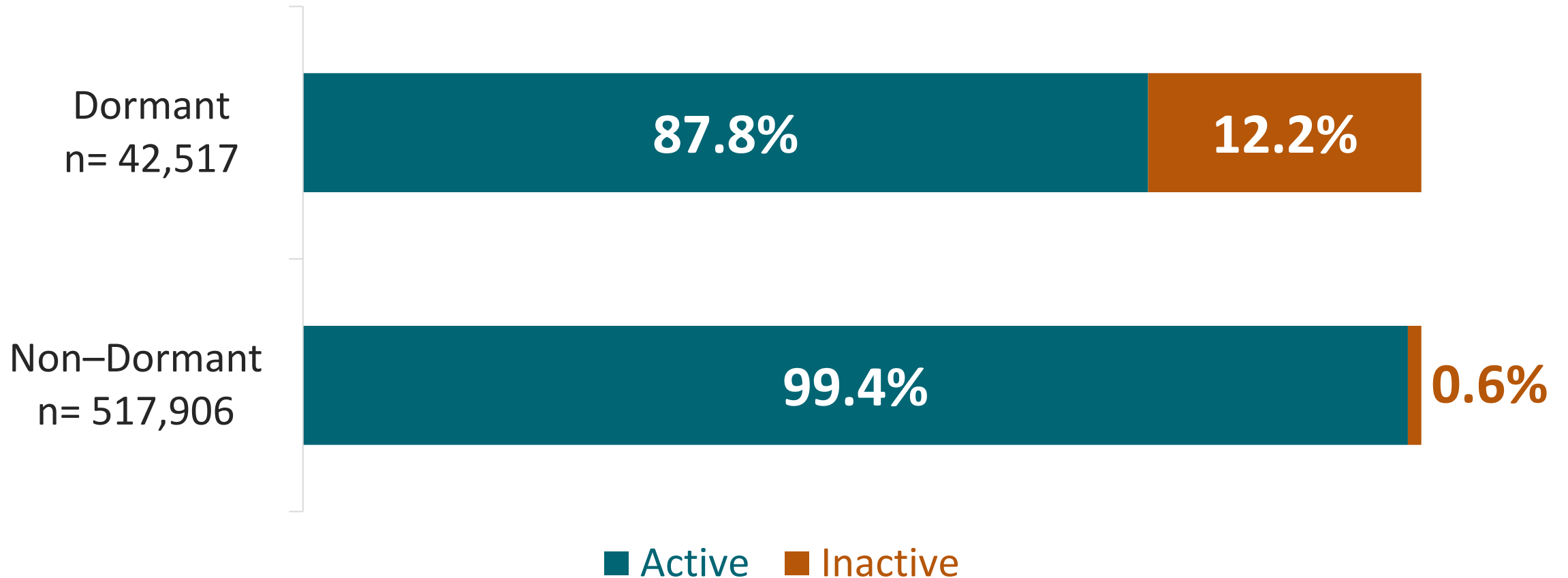
- Understand population characteristics of dormant and non-dormant client records.
- Quantify how excluding dormant state clients impacts vaccination coverage rates for Wisconsin adolescents.

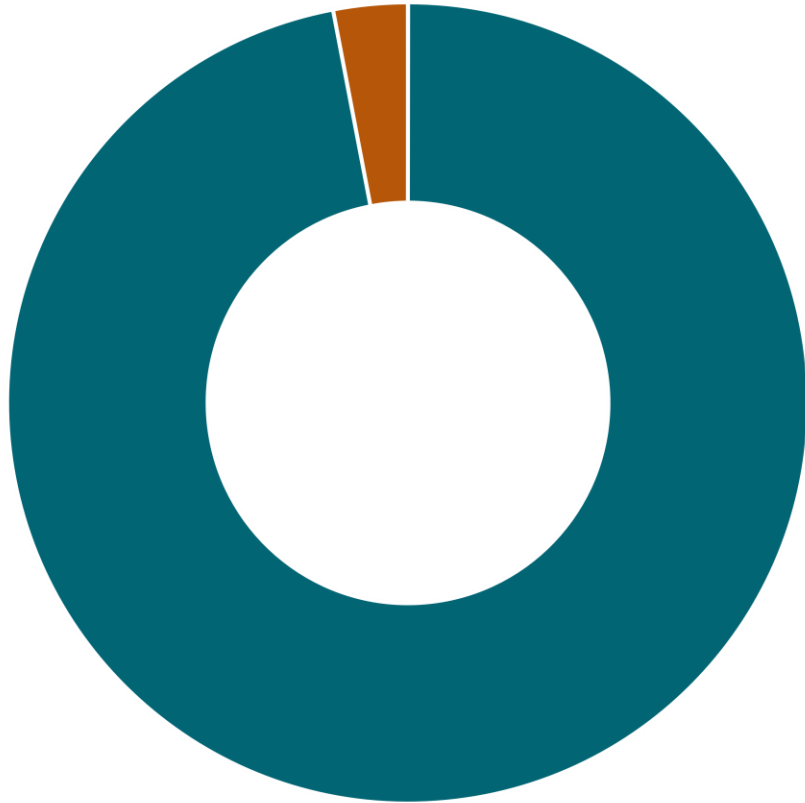
# Characteristics of Dormant and Non-Dormant Records

# WIR contains 560,423 client records for Wisconsin adolescents aged 13–18 years

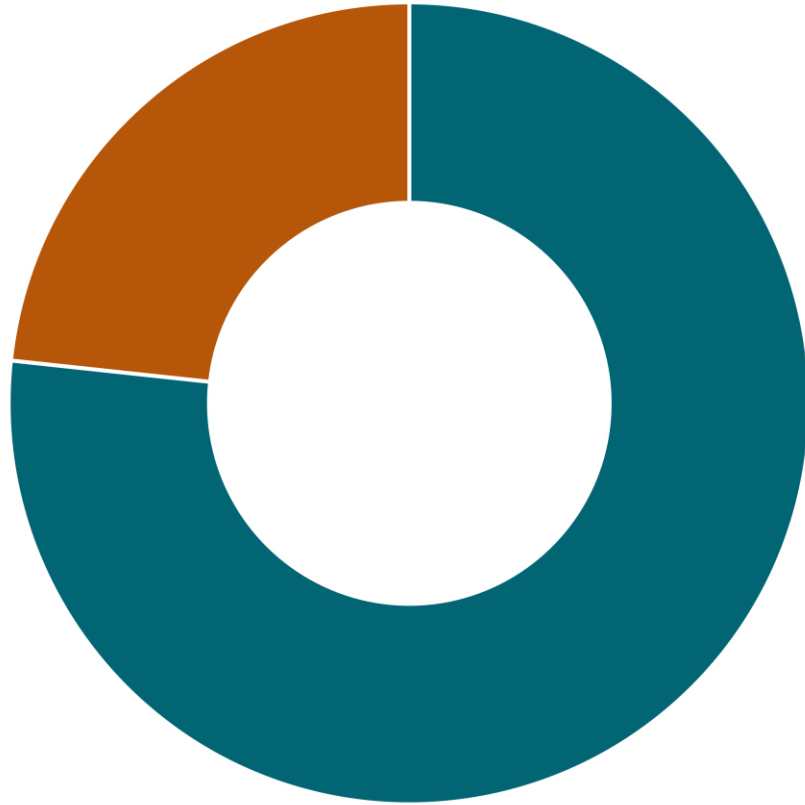


# Dormant clients have a higher proportion of **inactive** records



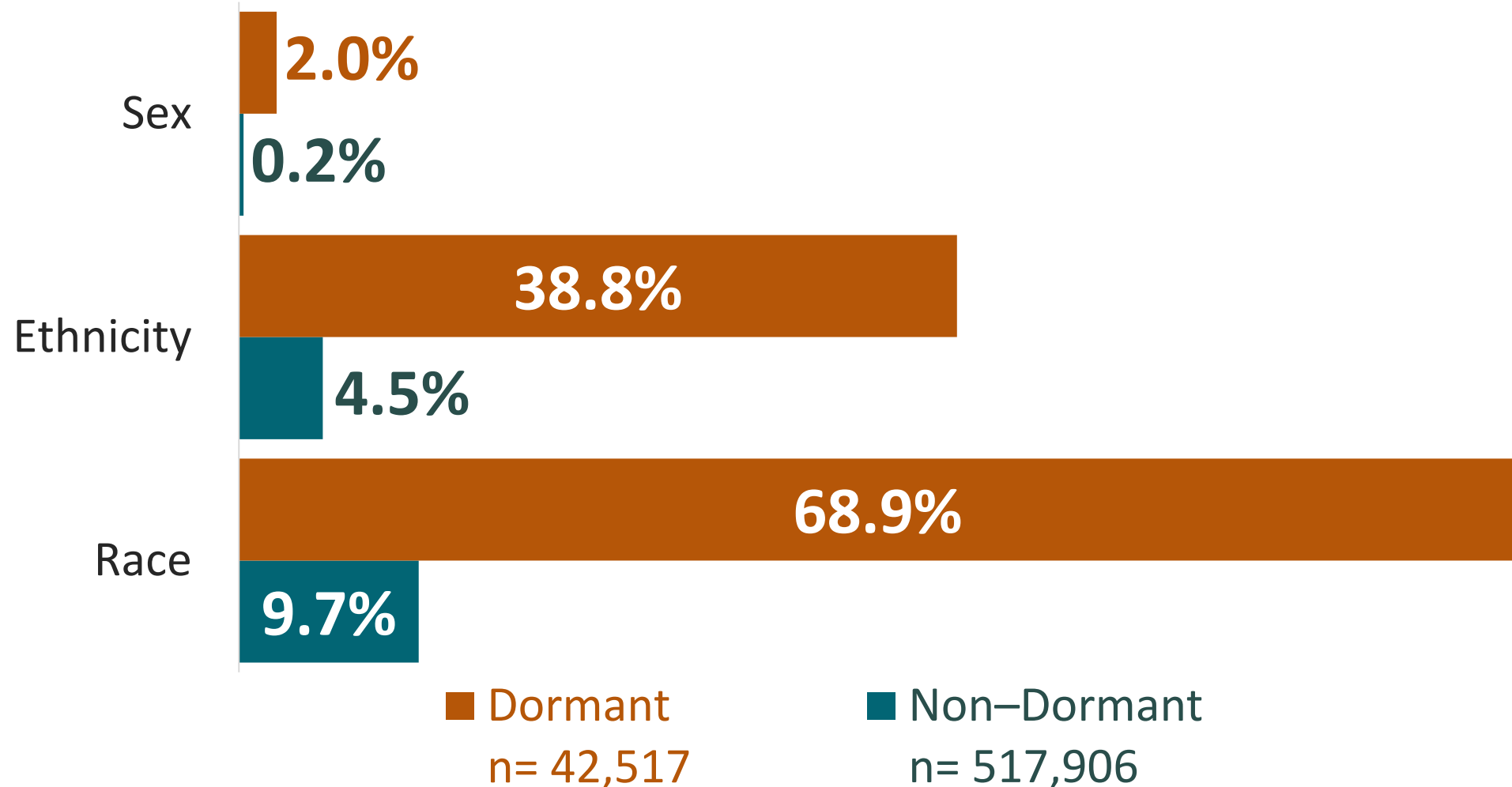


**97.0%**  
**of non-dormant  
records have  
immunizations in WIR.**

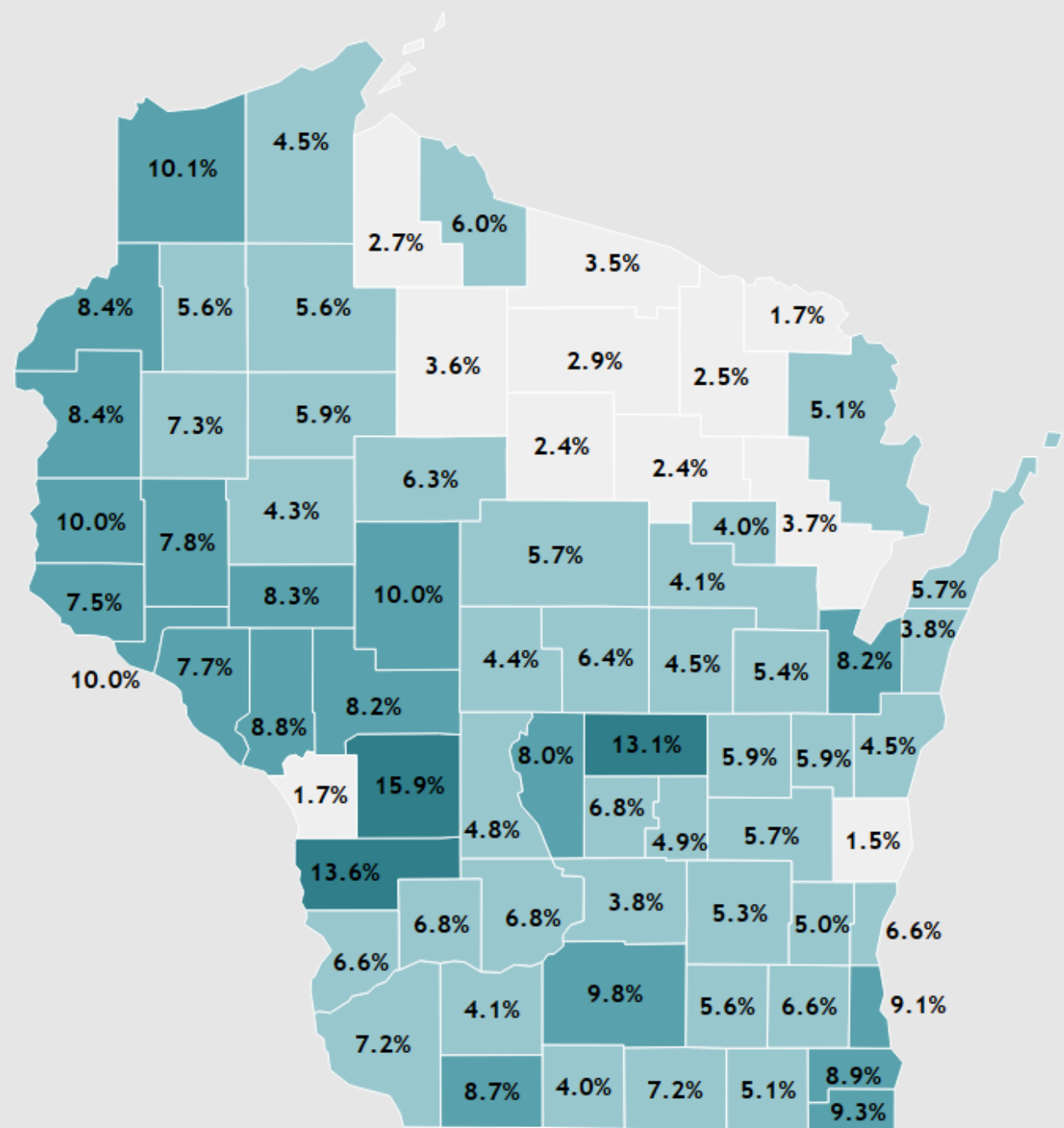


**76.7%**  
**of dormant records  
have immunizations  
in WIR.**

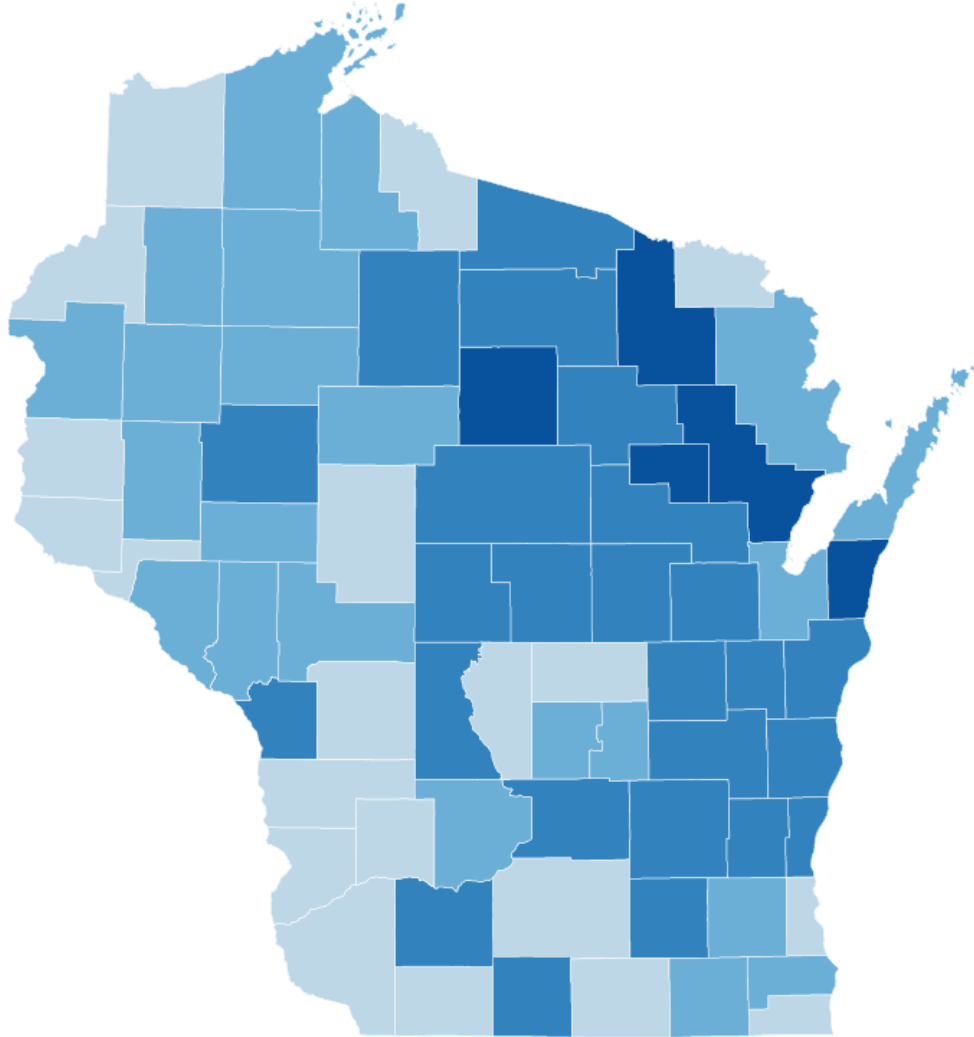
# Dormant records have a higher proportion of **unknown** demographic data



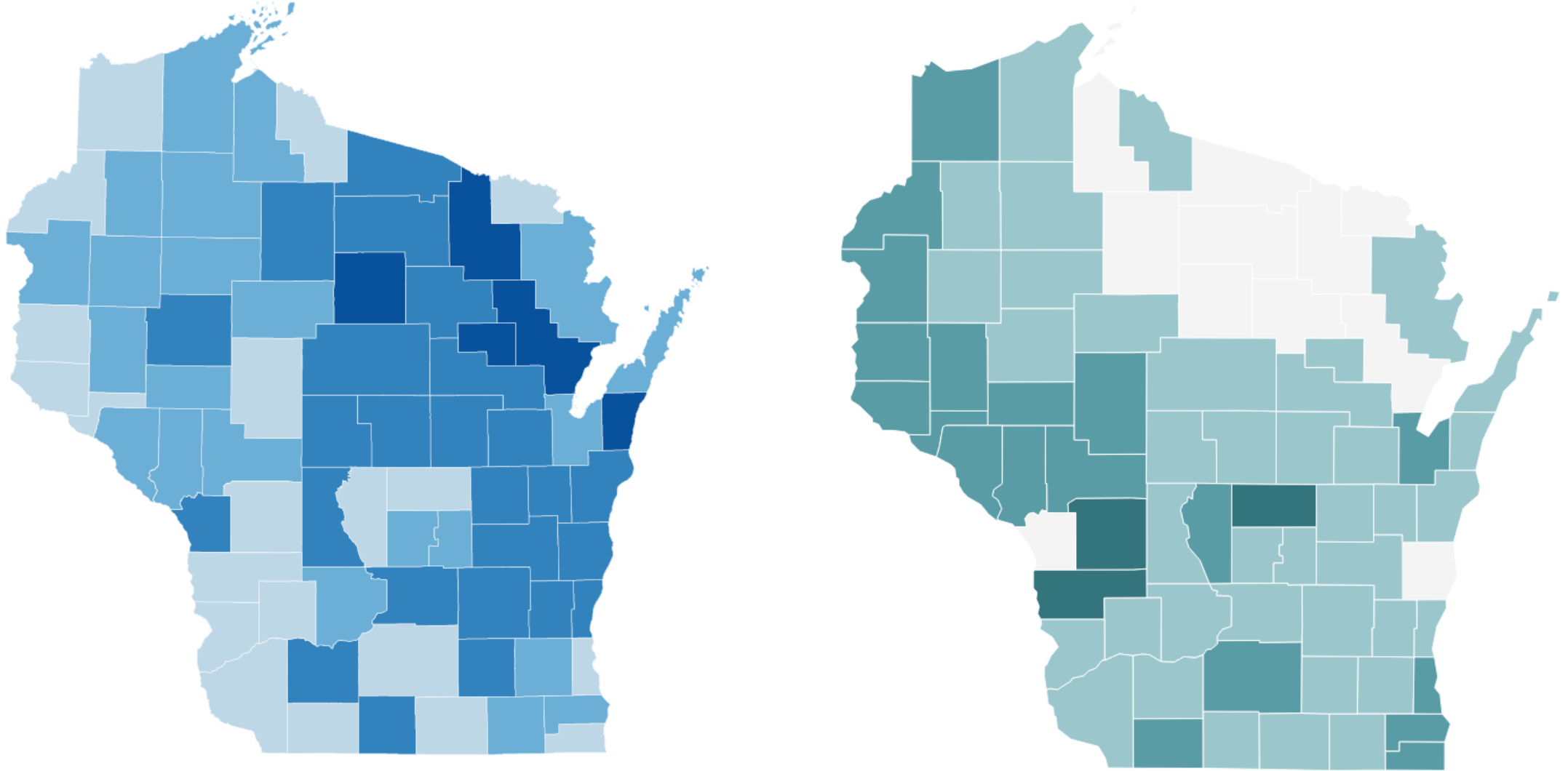
# Wisconsin counties vary in proportion of dormant records



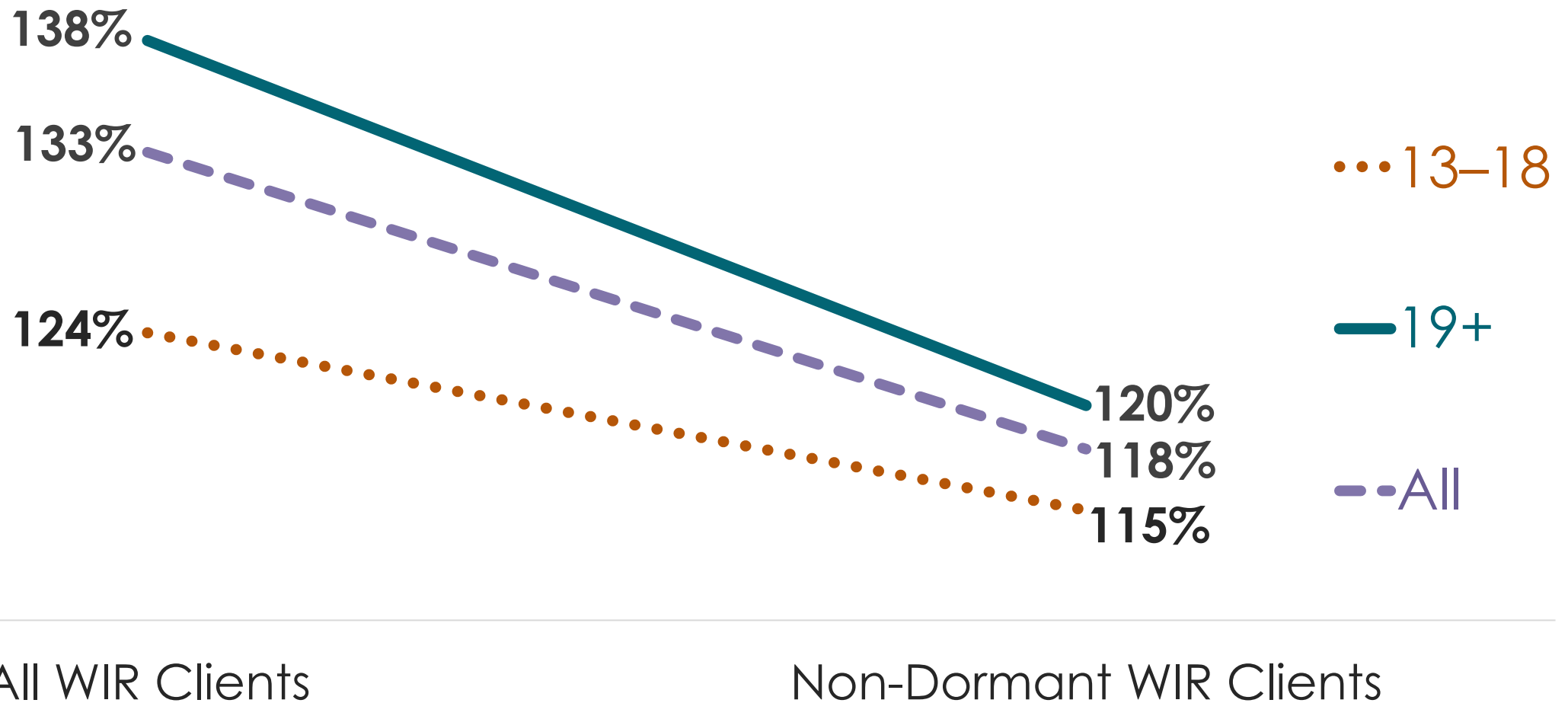
# Percent of adolescents who received one dose of Tdap in 2022 assessment



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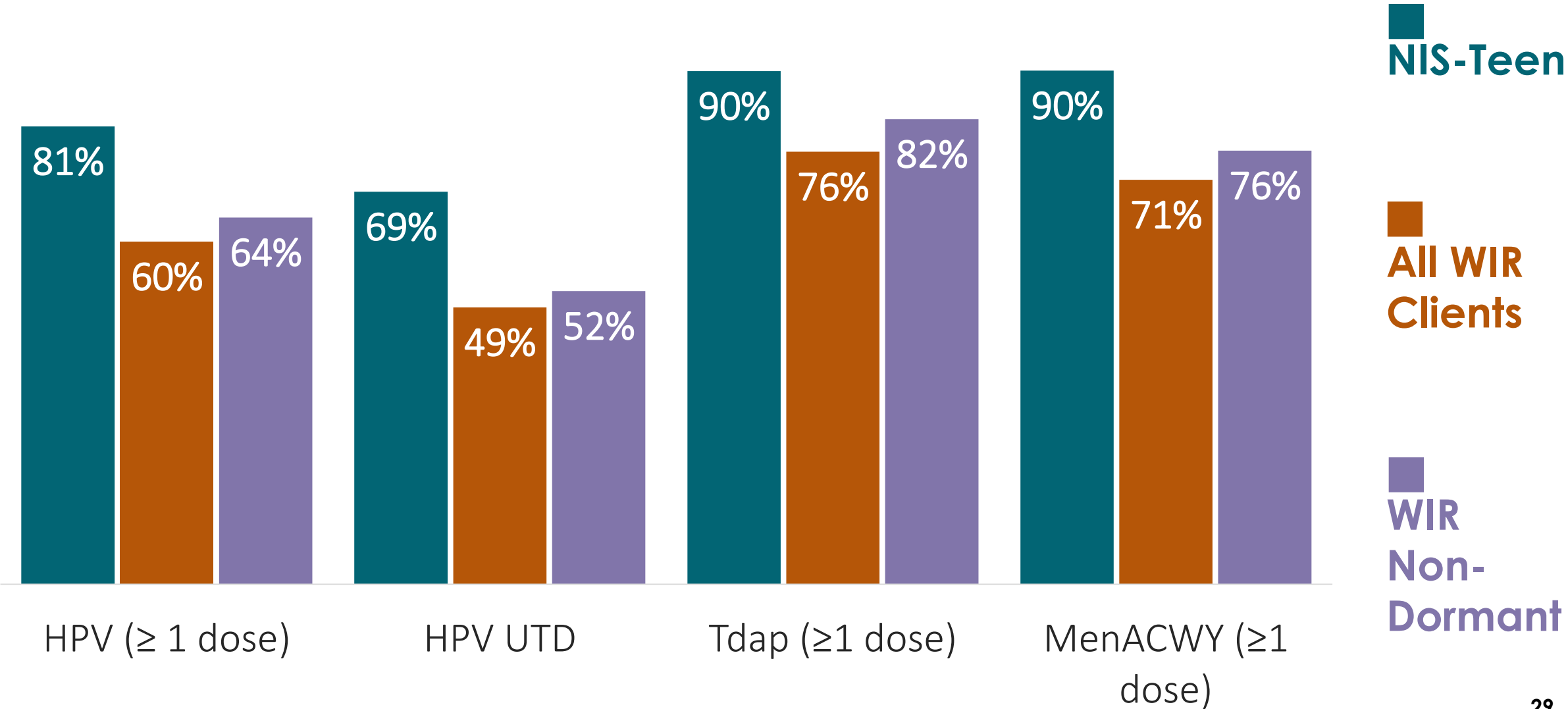


# Removing dormant client records reduces DI across age groups



# Vaccination Coverage Assessment

# Removal of dormant client records increased adolescent vaccination rates



# Dormant State Nuances

- Unknown whether dormant records belong to those who truly left the jurisdiction or experience barriers to accessing healthcare.
- Reporting errors caused by geocoding software, duplicate records, or bad addresses.

# Dormant State Nuances

- WIR user errors: pulling up the wrong client record in WIR could move a client from the Dormant state to Non-Dormant state.

# Strengths of Dormant State

- Time since last query may capture those who are vaccine hesitant, but still visiting health care providers.
- Dormant state is evaluated automatically.
- PALS is retained when a client record moves into the dormant state.

# Study Limitations

- Did not perform statistical analysis.
- Only assessed adolescent vaccination coverage.
- Low response rate of NIS-Teen estimates (23%).

# Conclusions

- Removing dormant client records alleviates DI, but there is room for improvement.
- Adolescent coverage assessments align more closely with NIS-Teen data when dormant clients are removed.

# Conclusions

- Demographic data is more likely to be complete for non-dormant records.
- Counties with a higher proportion of dormant clients tend to be areas with lower vaccine coverage rates.

# Next Steps

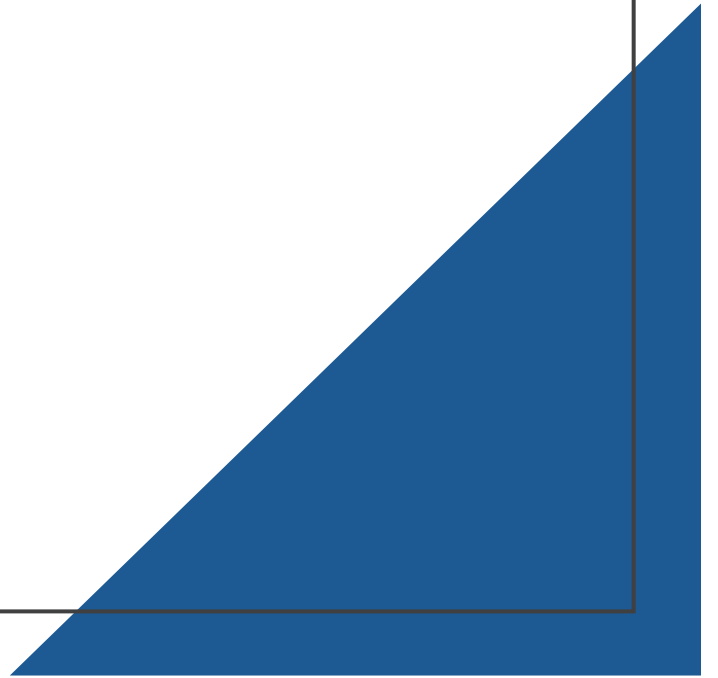
- Publish routine vaccination coverage rates for all of Wisconsin with dormant state records excluded from analysis.
- Determine regional factors that may impact dormant state.

# Next Steps

- Improve accuracy of dormant state through adjustment of timeframe since last query or last record update.

# Acknowledgements

- **WIR Unit**
- **Analytics Unit**
- **Immunization Program**



# Questions?

Thank you!

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