

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

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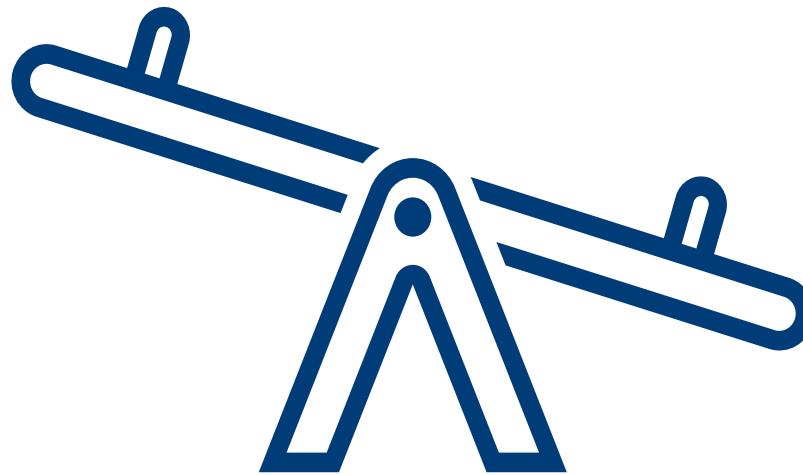


Background

- 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)

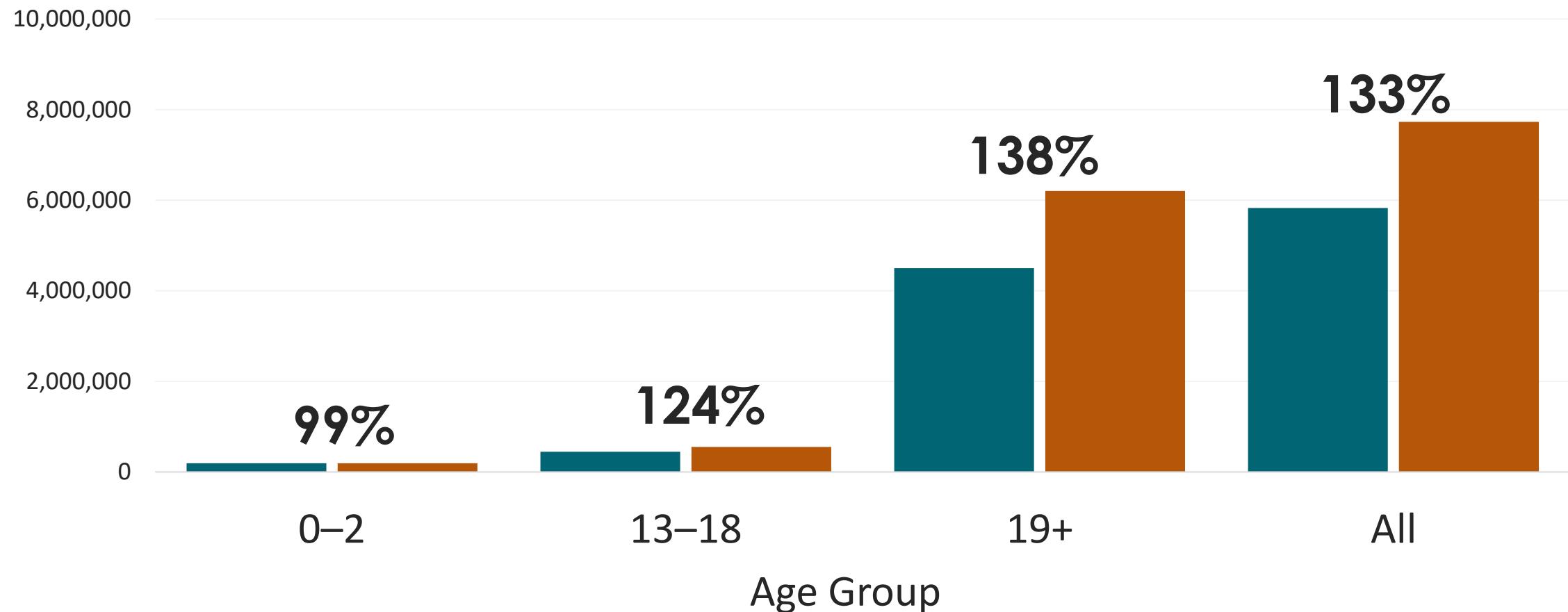
5,892,539
WI Census
Population
Estimate



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 (≥ 1)
 - HPV (≥ 1)
 - HPV (UTD)
 - Tdap (≥ 1)

Analysis

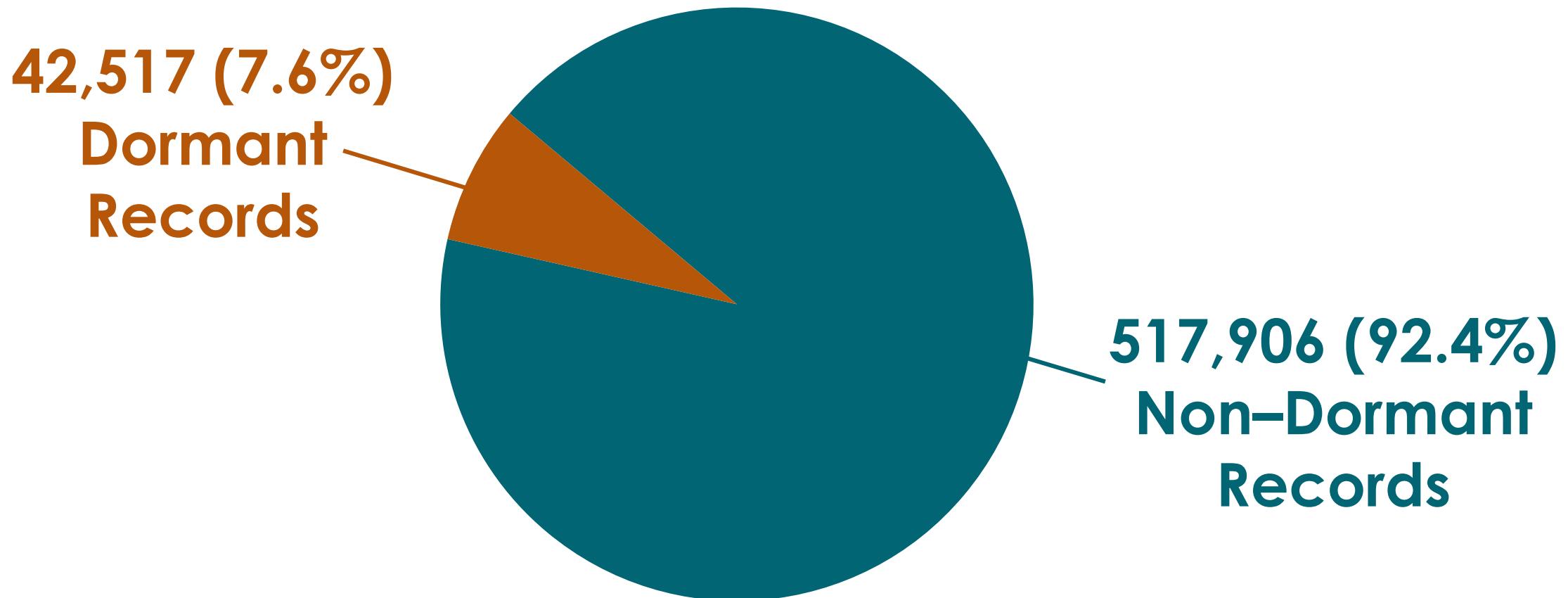
- Compared WIR vaccination coverage estimates, with and without dormant clients, to 2022 NIS-Teen estimates.
- Generated descriptive statistics of dormant and non-dormant client records.

Analysis

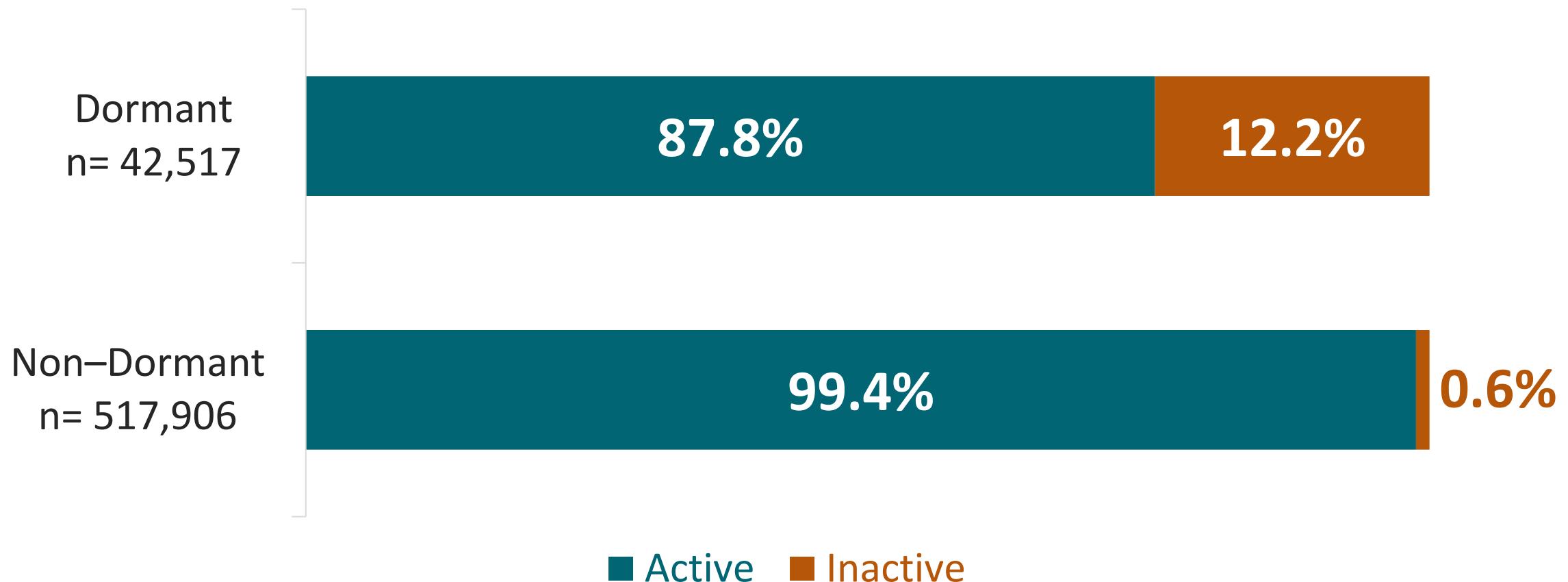
- Understand population characteristics of dormant and non-dormant client records.
- Quantify how excluding dormant state clients impacts vaccination coverage rates for Wisconsin adolescents.

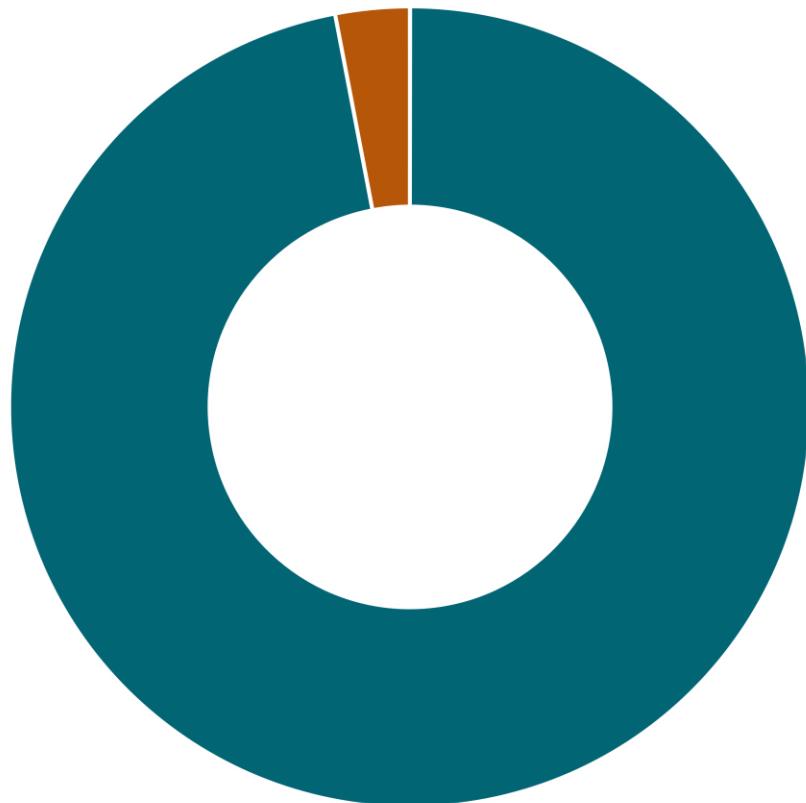
Characteristics of Dormant and Non-Dormant Records

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



Dormant clients have a higher proportion of inactive records



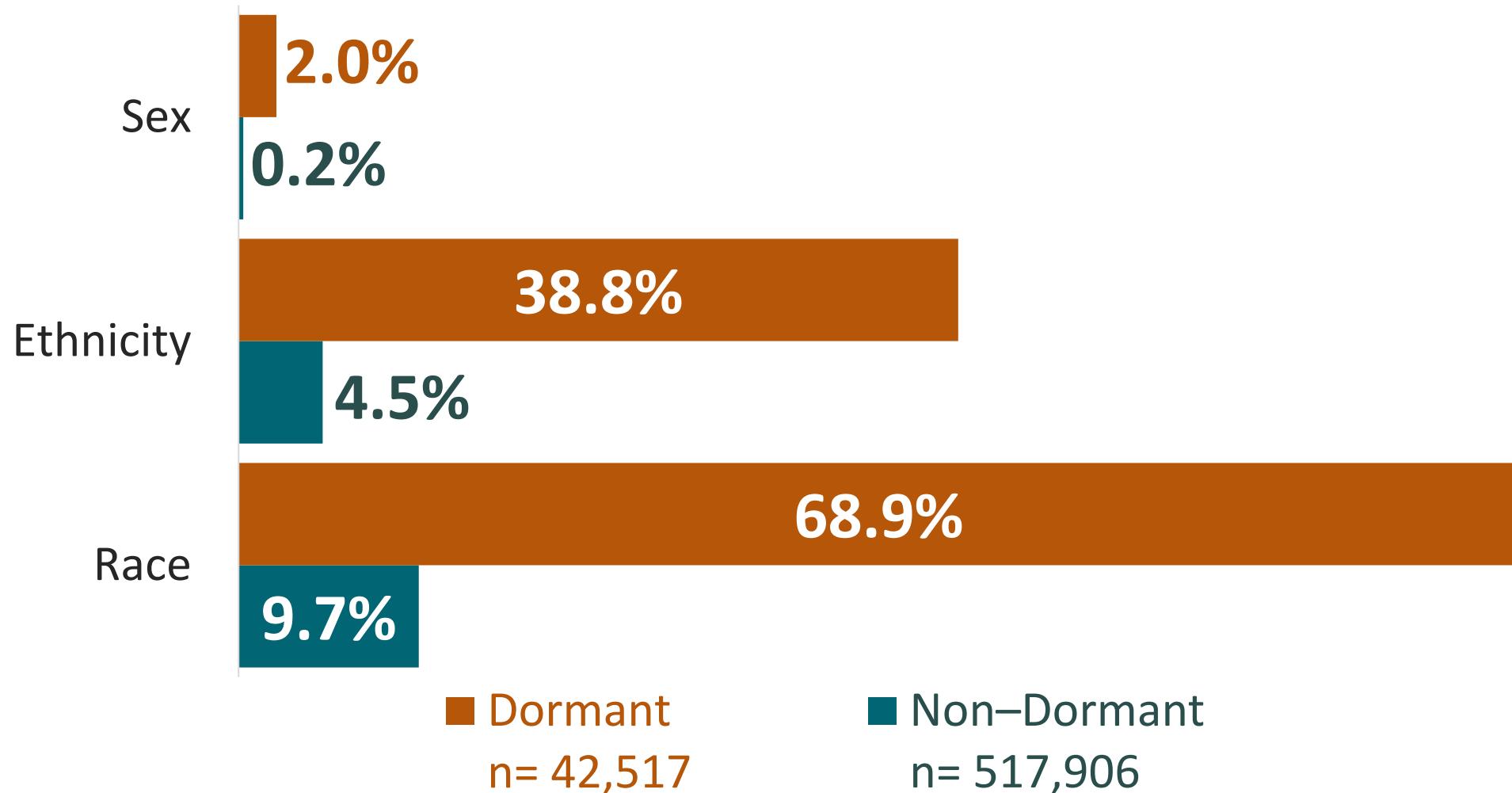


97.0%
of non-dormant
records have
immunizations in WIR.

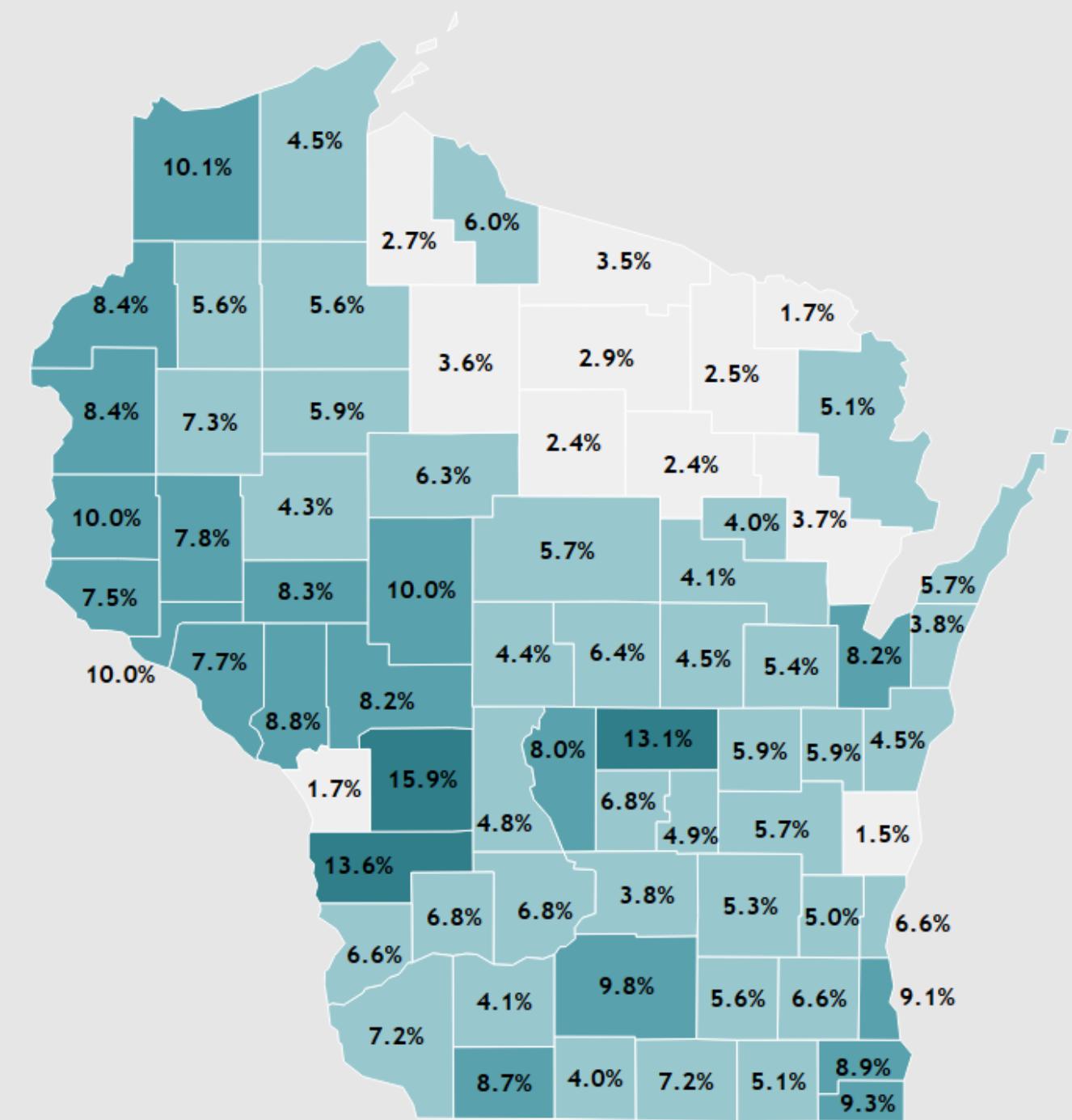


76.7%
of dormant records
have immunizations
in WIR.

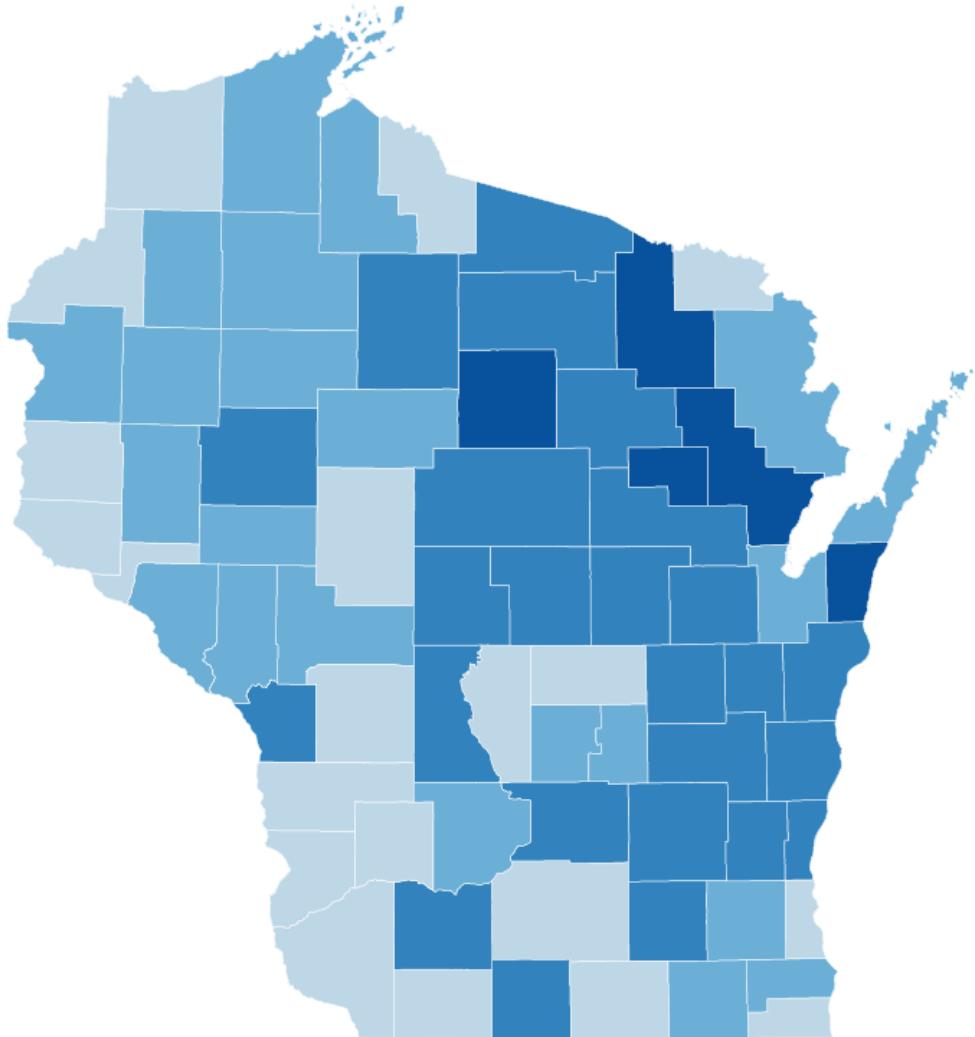
Dormant records have a higher proportion of **unknown** demographic data



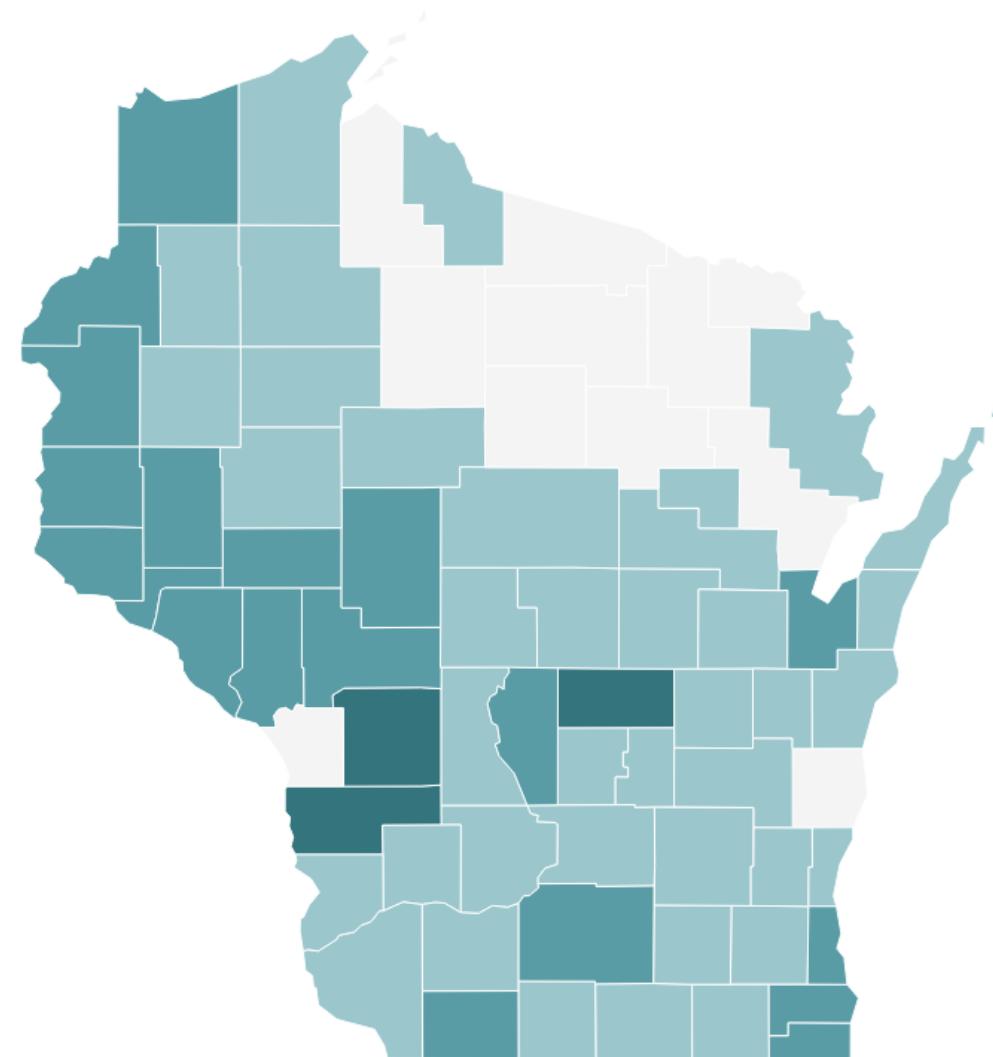
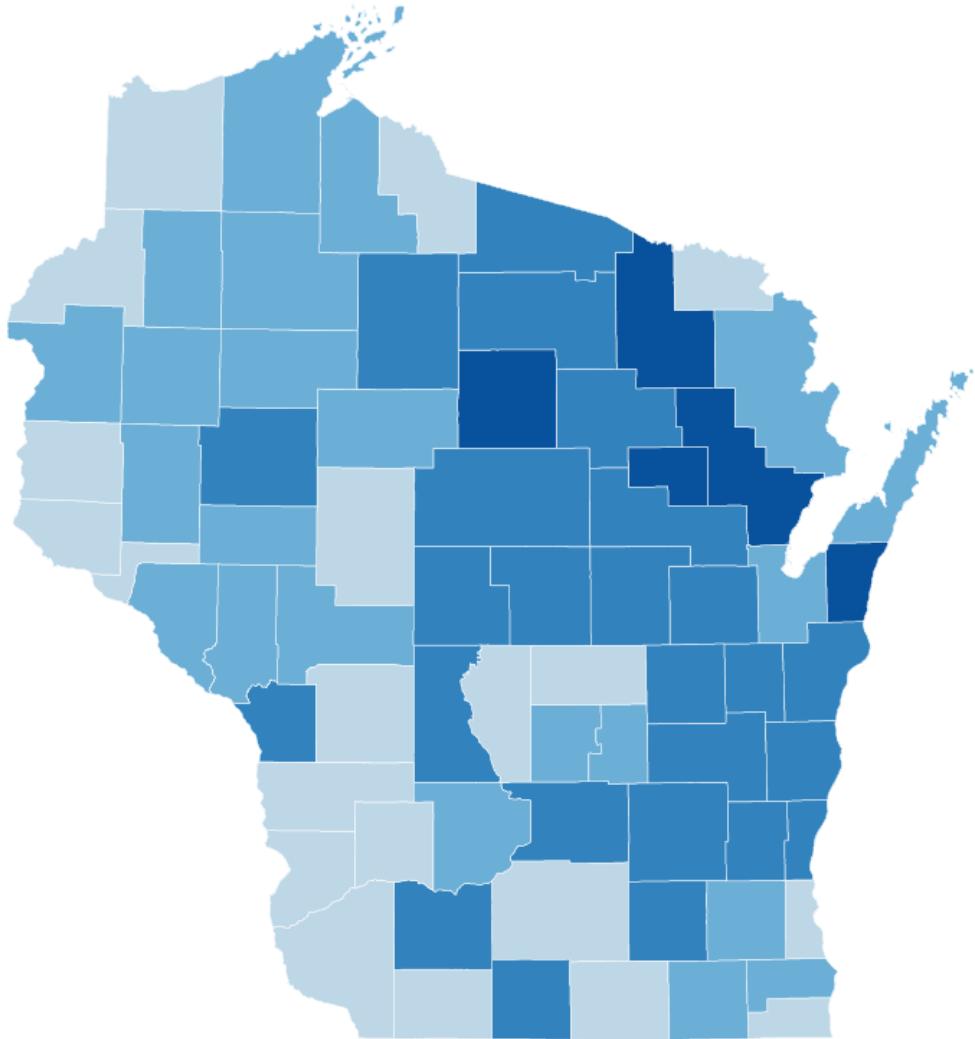
Wisconsin counties vary in proportion of dormant records



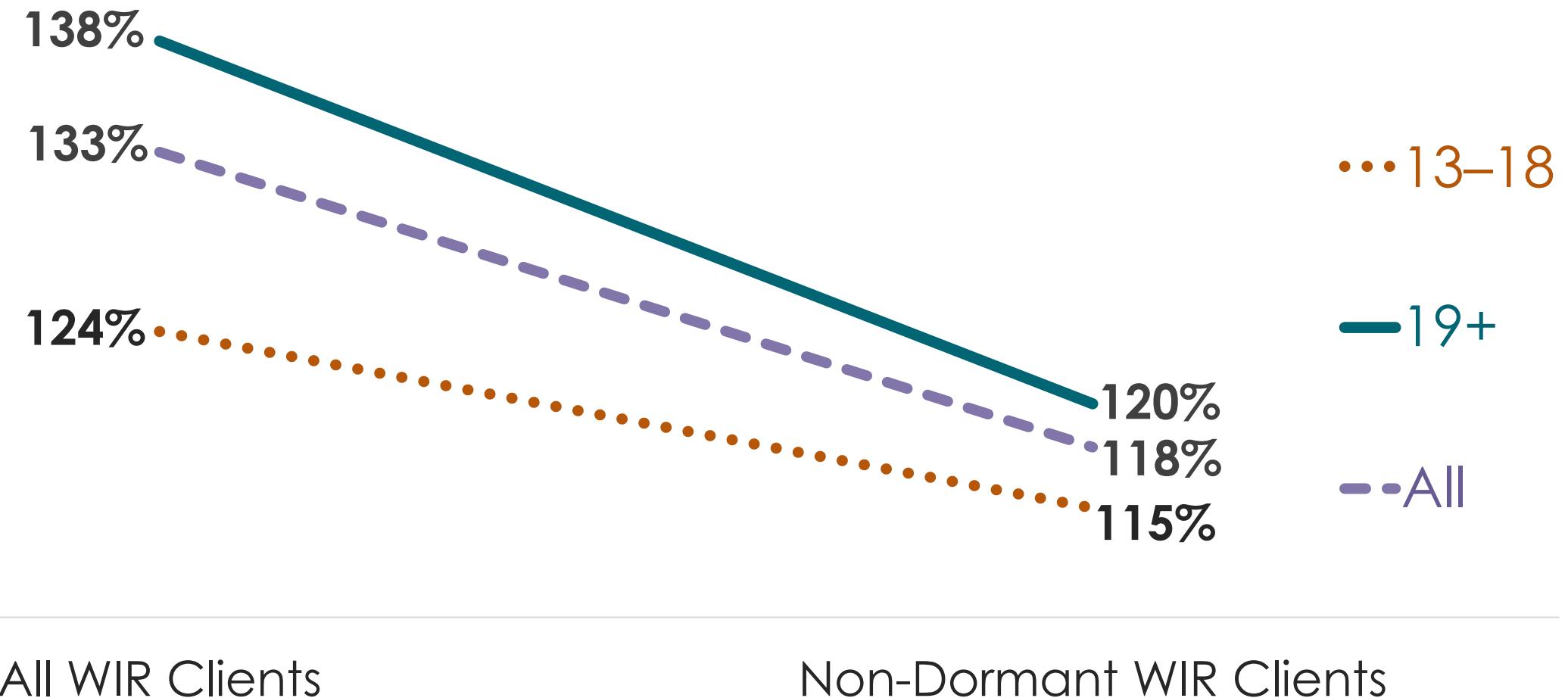
Percent of adolescents who received one dose of Tdap in 2022 assessment



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



Removing dormant client records reduces DI across age groups

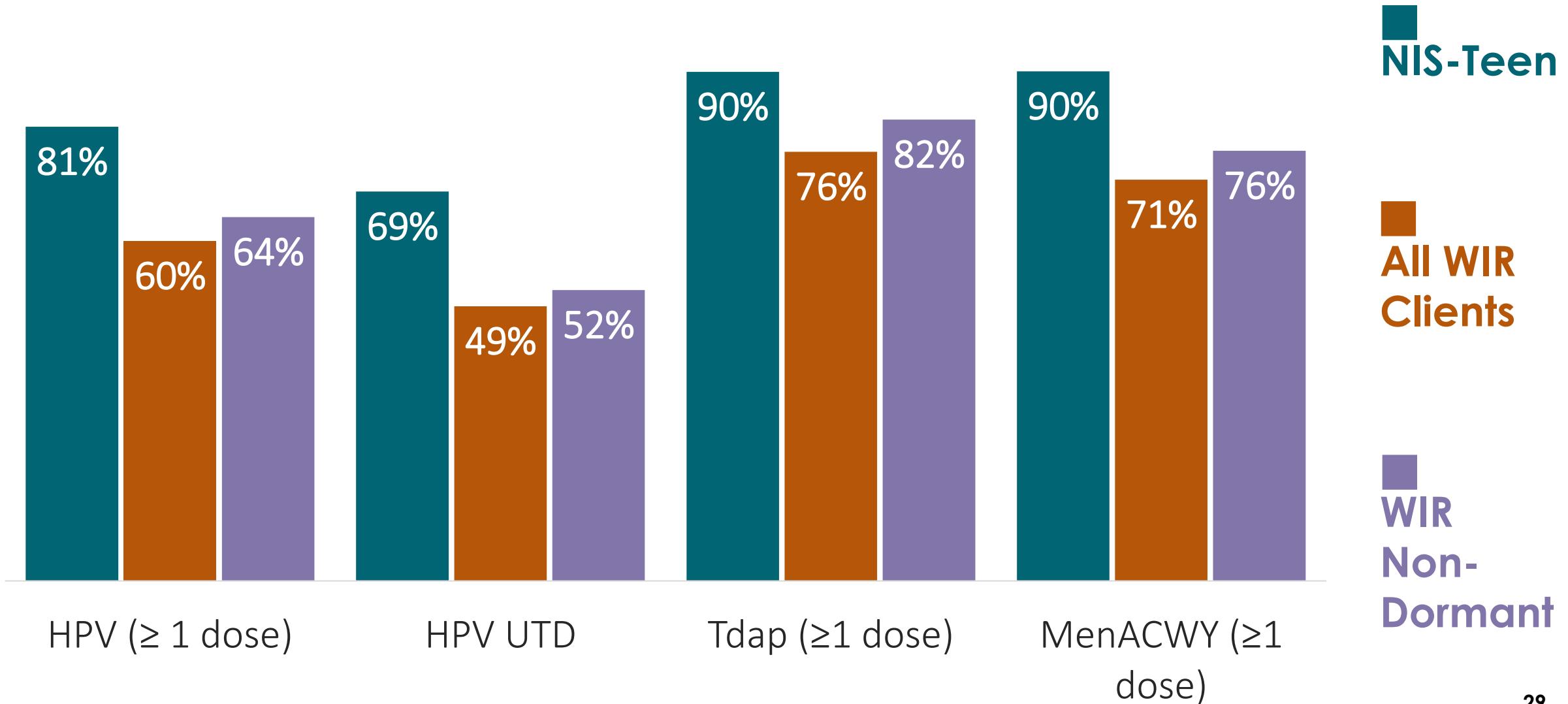


All WIR Clients

Non-Dormant WIR Clients

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.
- PAIS 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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