

# Motor Vehicle Crash Mortality among Northwest American Indians & Alaska Natives

Improving Data & Enhancing Access (IDEA-NW) Project,  
NW Tribal EpiCenter

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**Northwest Portland Area  
Indian Health Board**  
*Indian Leadership for Indian Health*

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# Background



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# Excess mortality among AI/ANs

- AI/AN life span 6 years below U.S. average
- After declining in 1900s, AI/AN death rates rose in mid-1980s
- Large racial disparities in injury deaths
  - Motor vehicle crashes account for majority of unintentional injury deaths
- Injury prevention has become a public health priority area for Indian Country



# AI/AN race often misclassified on death certificates

- Race not often based on family's own report
- AI/ANs misclassified more frequently than other races/ethnicities
- Misclassification errors may follow a patient between data systems
- Net result: morbidity and mortality measures are *underestimated* for AI/AN



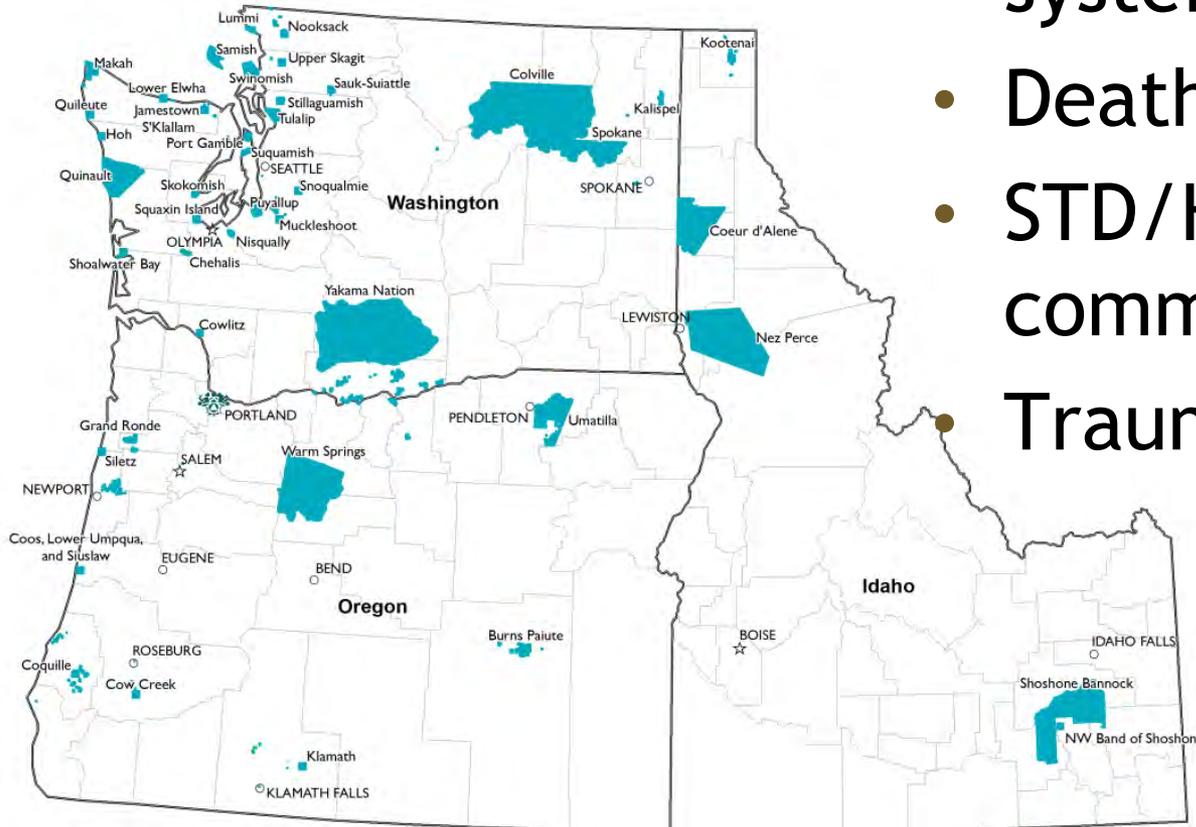
# IDEA-NW Project

- Improving Data & Enhancing Access (IDEA-NW)
  - Goal: Reduce misclassification of AI/AN race in surveillance systems; disseminate local-level health data to NW tribes.
  - Grant funding: AHRQ (2010 to 2013), OMH (2012-2017)
- **Northwest Tribal Registry (“The Tribal Registry”)**
  - All AI/AN registered at IHS or tribal clinic in the NW
  - Augmented with data from urban clinics
- Linkages conducted with public health datasets



# Linkages in the Northwest

- Cancer registries
- Hospital discharge systems
- Death certificates
- STD/HIV and other communicable diseases
- Trauma registries



# Methods



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# Data Sources

- Death certificates
  - Washington: 1980-2009
  - Oregon: 2006-2010
  - Idaho: 2006-2010
- Linked with The Tribal Registry(known AI/AN)
  - Using LinkPlus software, compared data sets to find individuals who appear in both
  - Names, birthdates, SSN, etc. are compared
  - Probabilistic linkage - allow for errors, misspellings, missing data, nick names, etc.
  - Each pair given a score indicating likelihood of a match
  - “Grey area” matches reviewed by hand



# Analysis

- Cause of Death defined using ICD-9/10 **only underlying COD**
- AI/AN in analysis = AI/AN (any mention) on death certificate and/or matched NTR
  - White race (alone) selected for comparison
  - AI/AN & White comprised 95% of the data
- Rates: 2006-2009
- Trends (Washington only): 1990-2009
- NCHS bridged-race population estimates used as population denominators
- Rates age-adjusted and presented per 100,000 population

# Results



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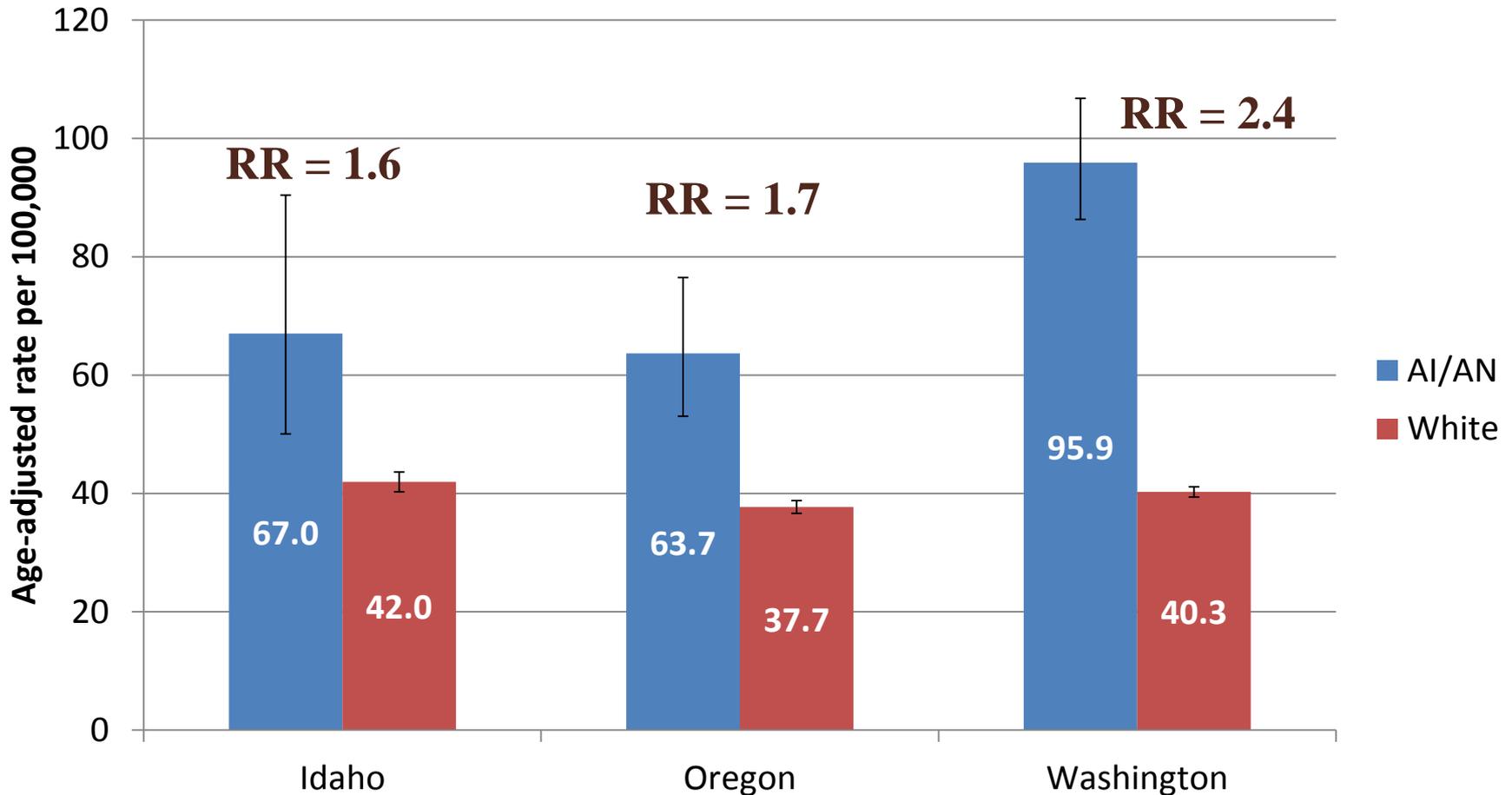


# Racial misclassification

- Idaho: 8.3%
  - 95% coded as white
- Oregon: 12.9%
  - 98% coded as white
- Washington: 9.3%
  - 94% coded as white

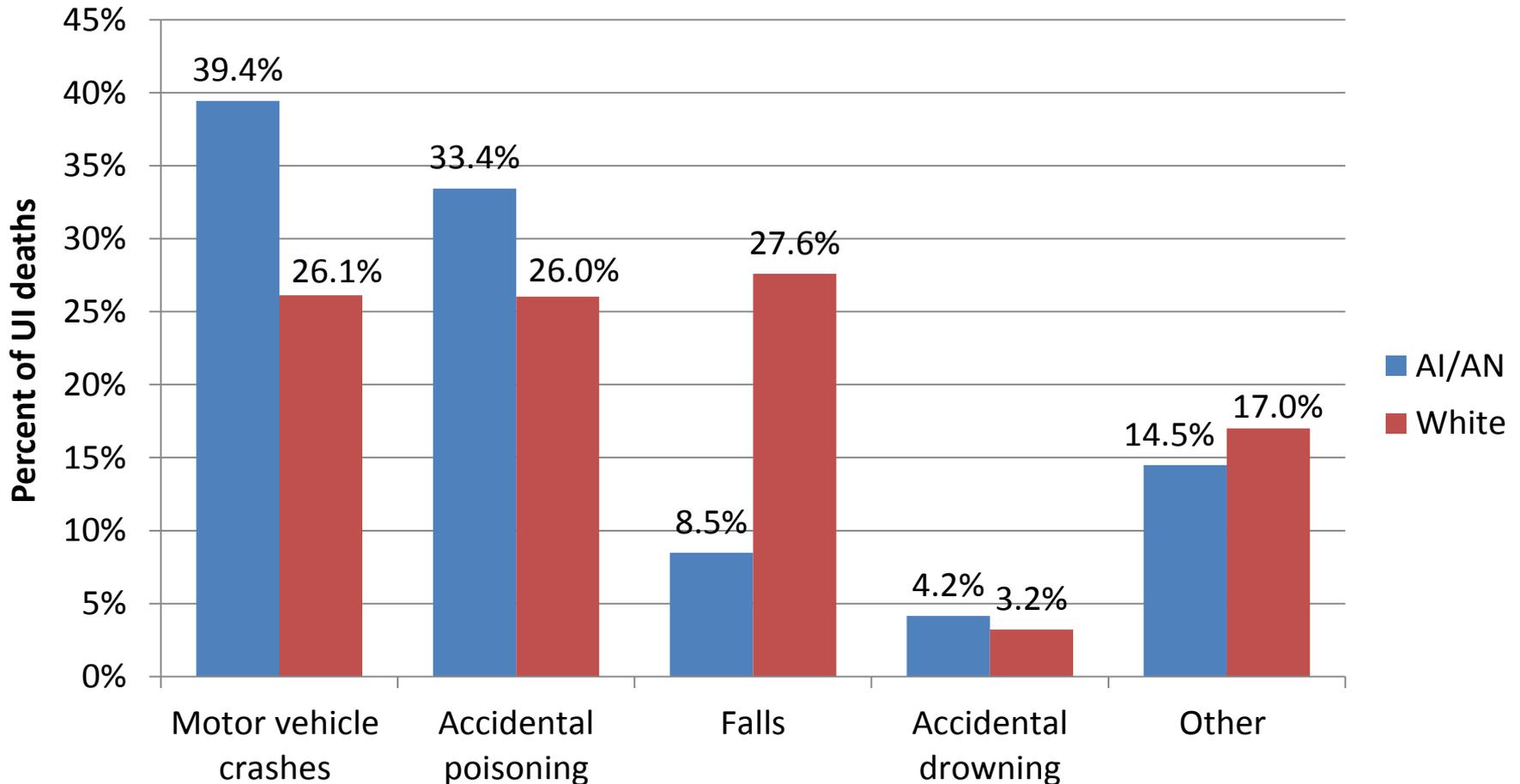


# Unintentional injury mortality, 2006-2009



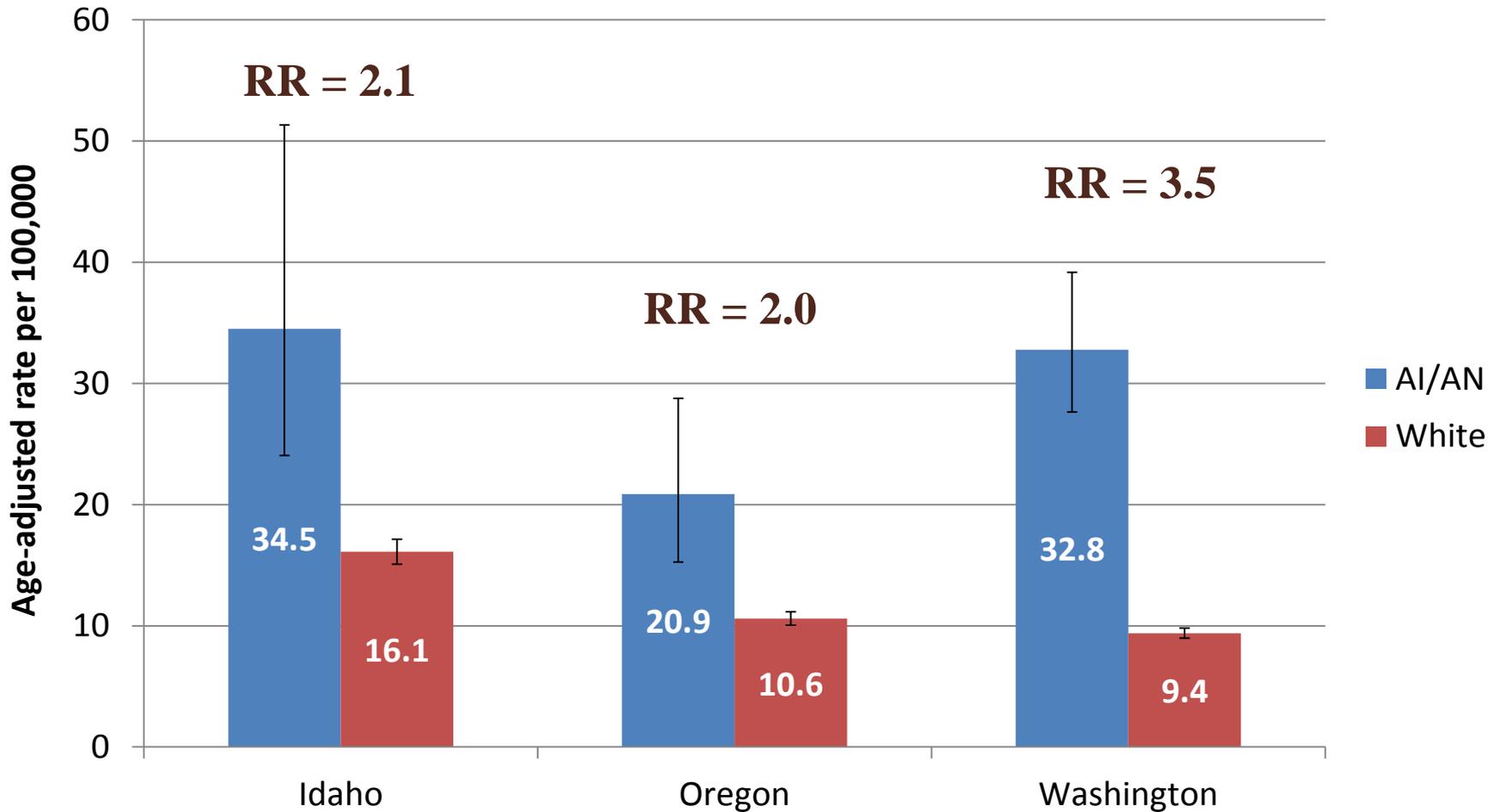


# Leading causes of unintentional injury deaths, NW region, 2006-2009



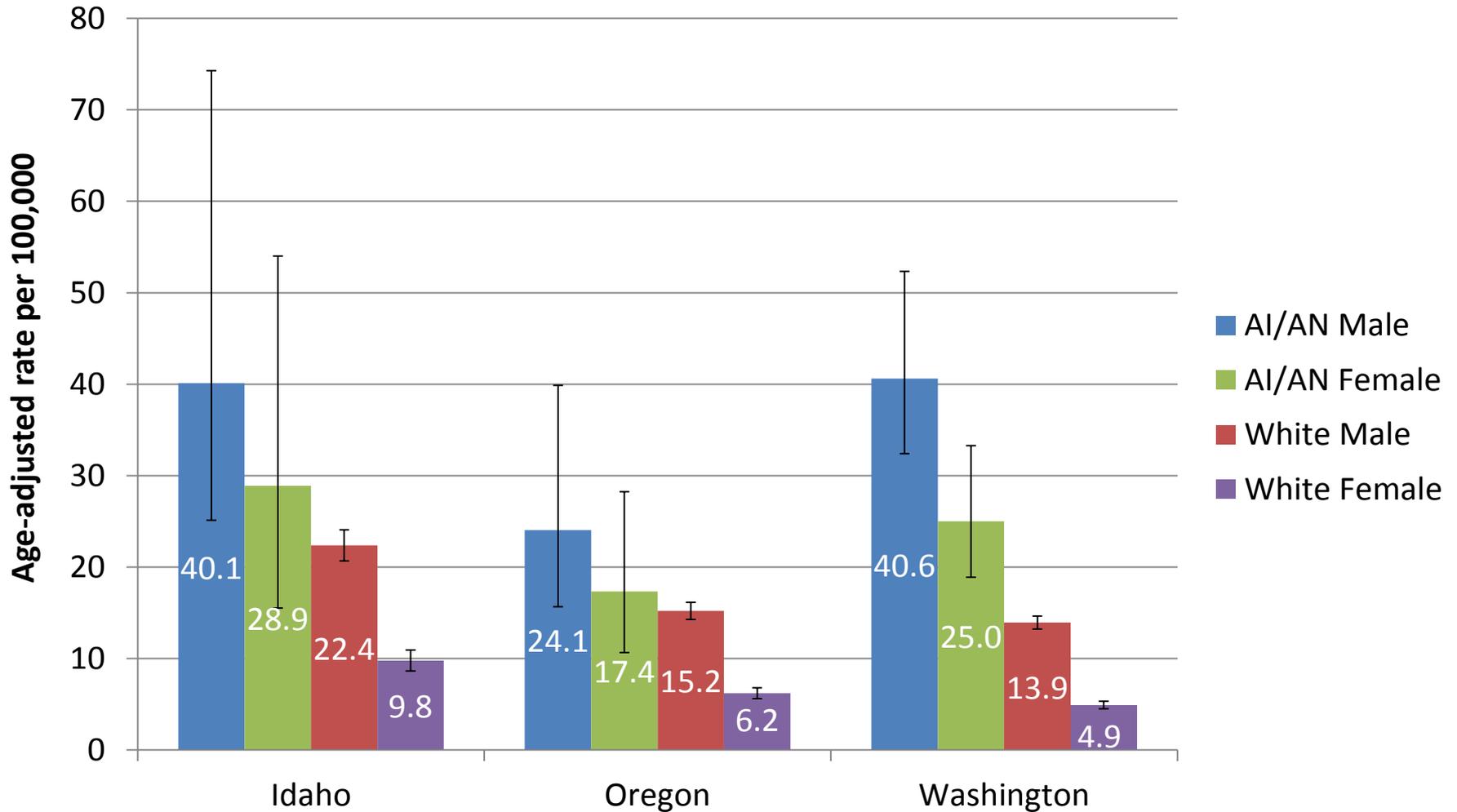


# Motor vehicle crash mortality, 2006-2009



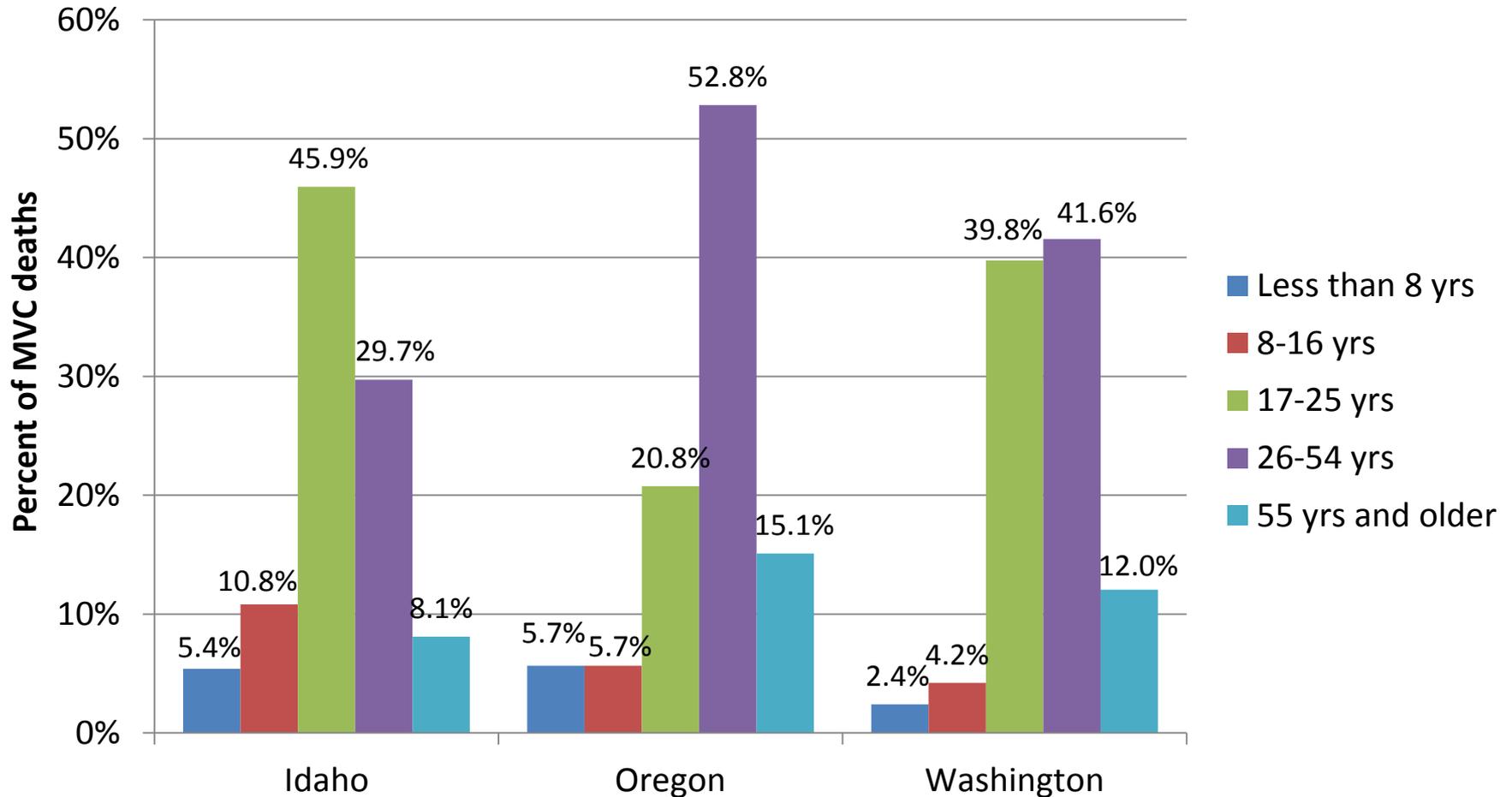


# MVC mortality by sex, 2006-2009



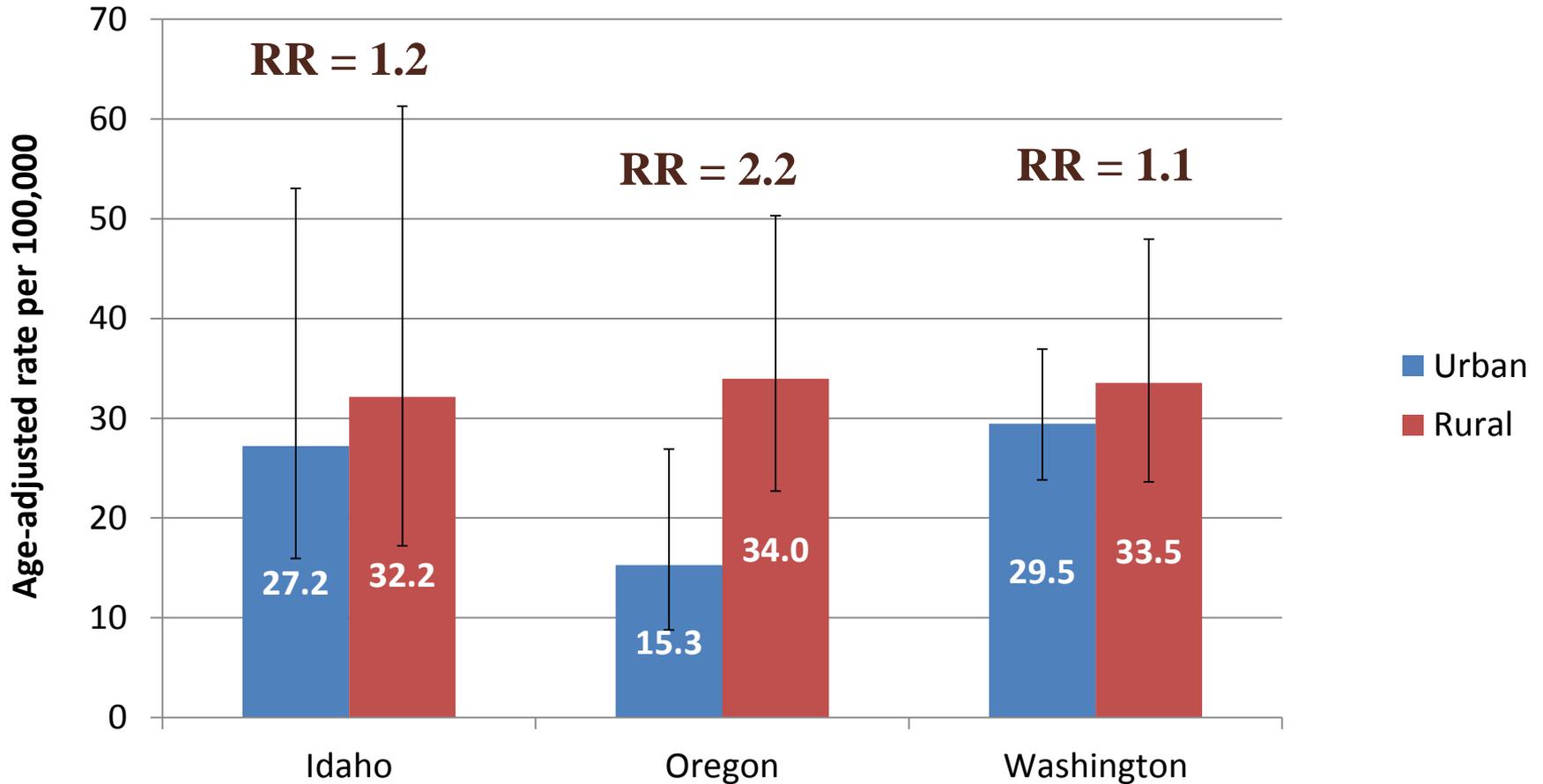


# AI/AN MVC mortality by age, 2006-2009



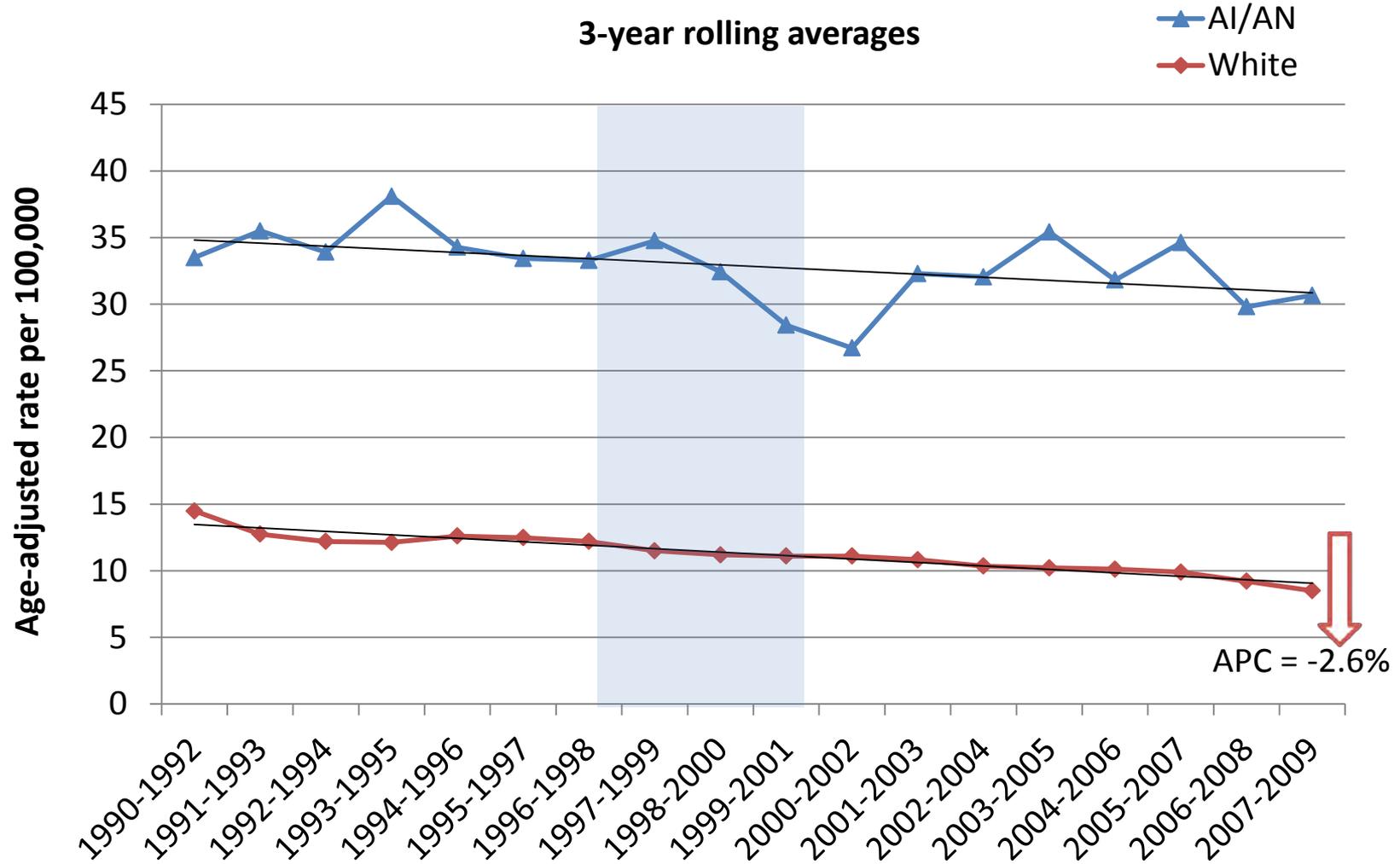


# AI/AN urban vs. rural MVC mortality, 2006-2009





# MVC mortality 20-year trend, Washington, 1990-2009



# Discussion



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- Correct racial classification is a critical factor in accurate surveillance of mortality
  - Linkage can help address misclassification
- Unintentional injury & MVC mortality in particular remain disproportionately high for AI/ANs
- Some improvements experienced by Whites (significant decrease in MVC rates) have not occurred for AI/ANs



# Tribal uses of data

- Tribes use mortality data for:
  - Health assessment
  - Grant writing and reporting
  - Program planning and evaluation
  - Policy and advocacy
- Comprehensive 3-state mortality report to be published in November, 2012



# Partners

- Injury prevention projects at NPAIHB
  - Injury Prevention Program
    - NW Tribal Injury Prevention Coalition → 5-year Tribal Injury Prevention Action Plan
    - Focus on motor vehicle safety & elder falls
  - Native CARS (Children Always Ride Safe)
    - Randomized delayed-intervention CBPR study in 6 NW Tribes
    - Goal: to design, implement, and test the effectiveness of tribal interventions to improve the use of child safety seats among AI/AN children



# Limitations & challenges

- Tribal Registry under-represents urban AI/AN and those with private insurance
  - Captures 75-80% of AI/AN population
- Even with combined data years, small numbers make AI/AN rates unstable
  - Local-level analysis/reporting even more difficult
- Death certificate data does not answer the “why” questions



# Thank You!



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