

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



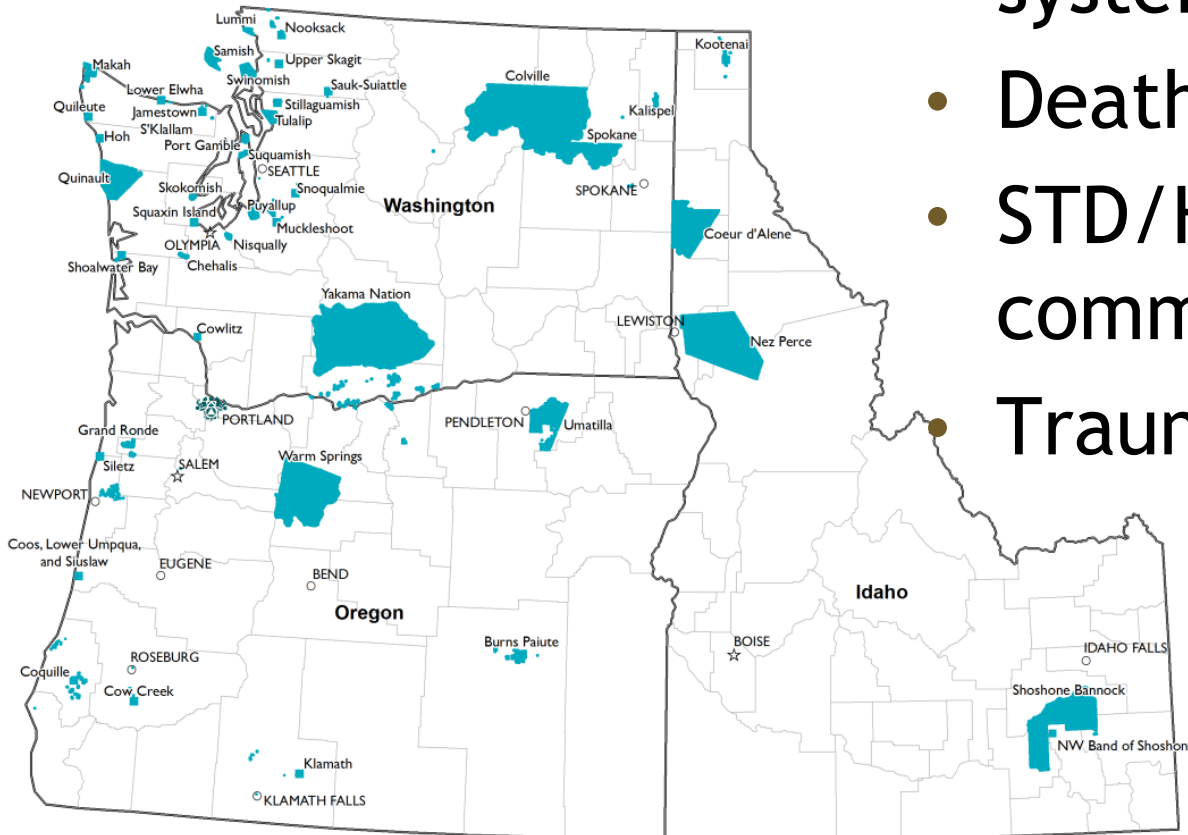
IDEA-NW Project

- 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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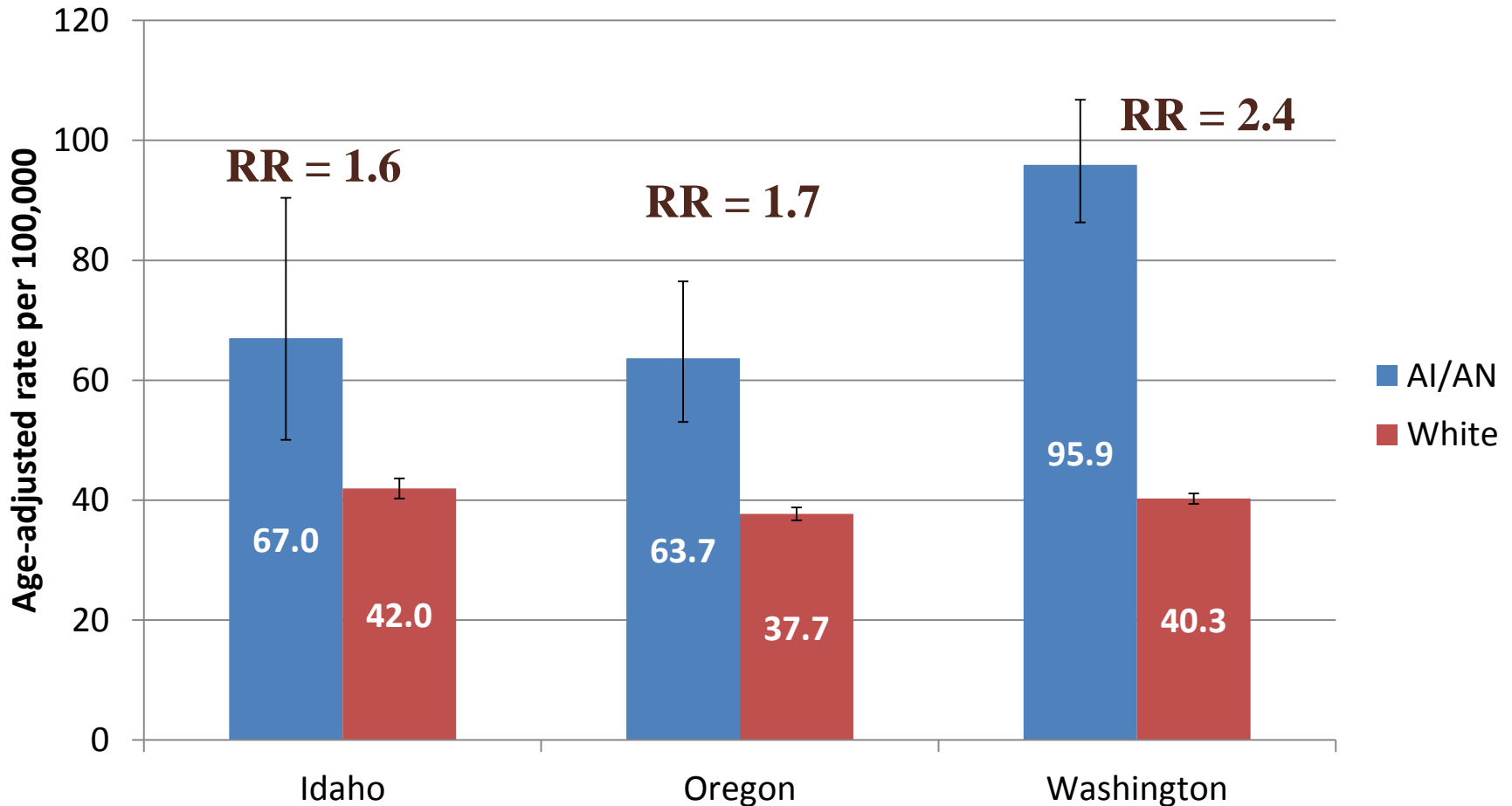


Racial misclassification

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

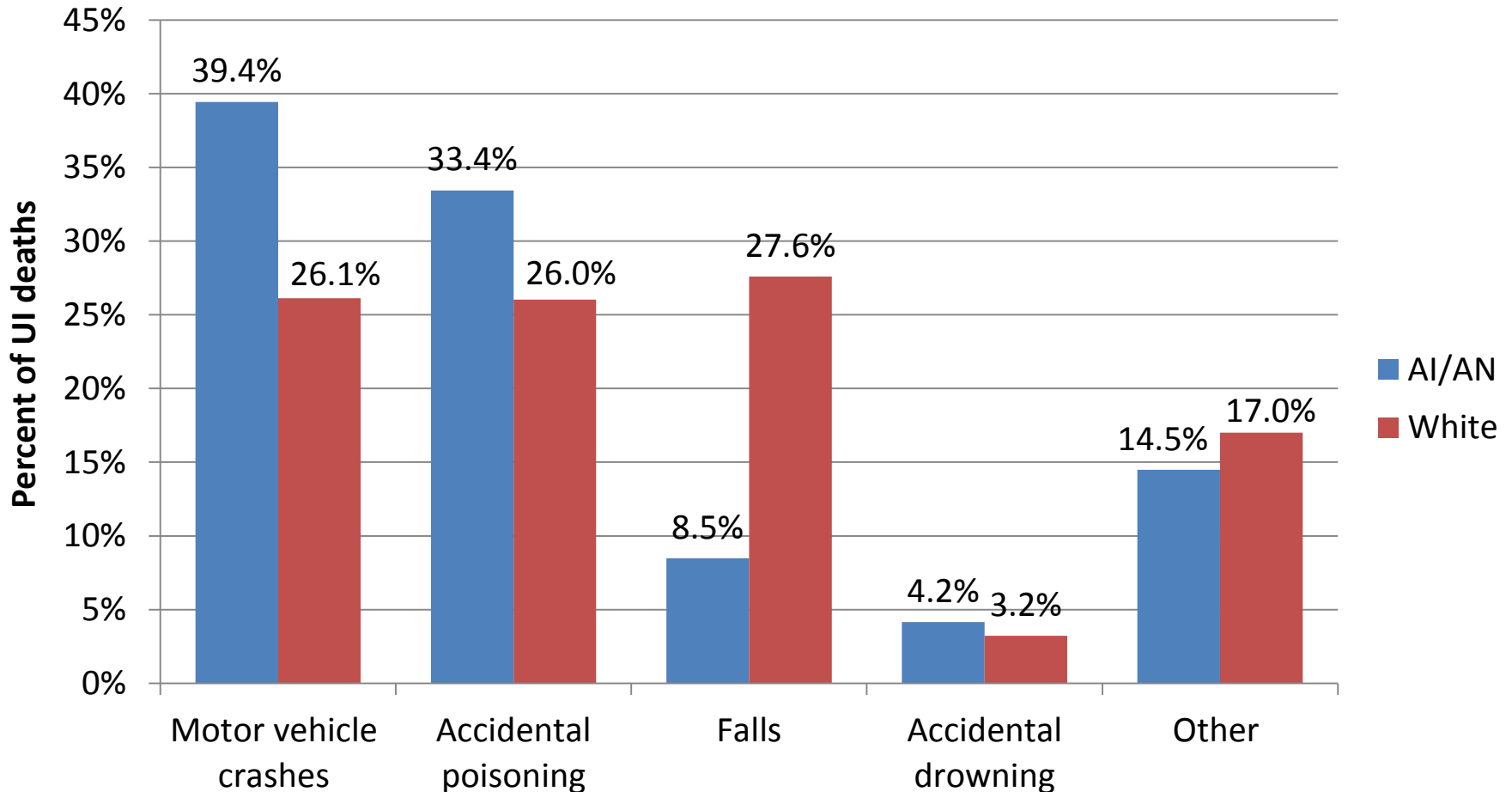


Unintentional injury mortality, 2006-2009



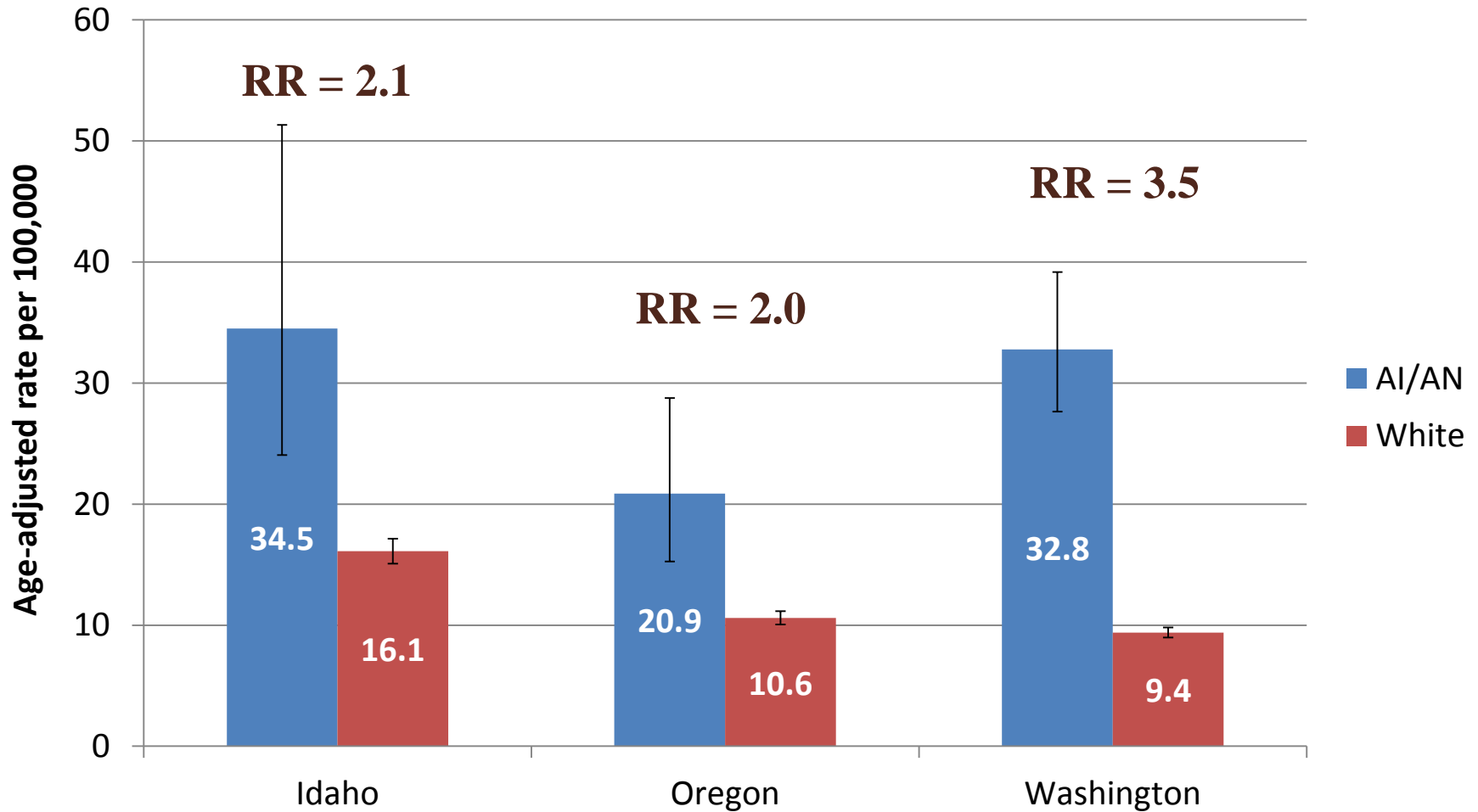


Leading causes of unintentional injury deaths, NW region, 2006-2009



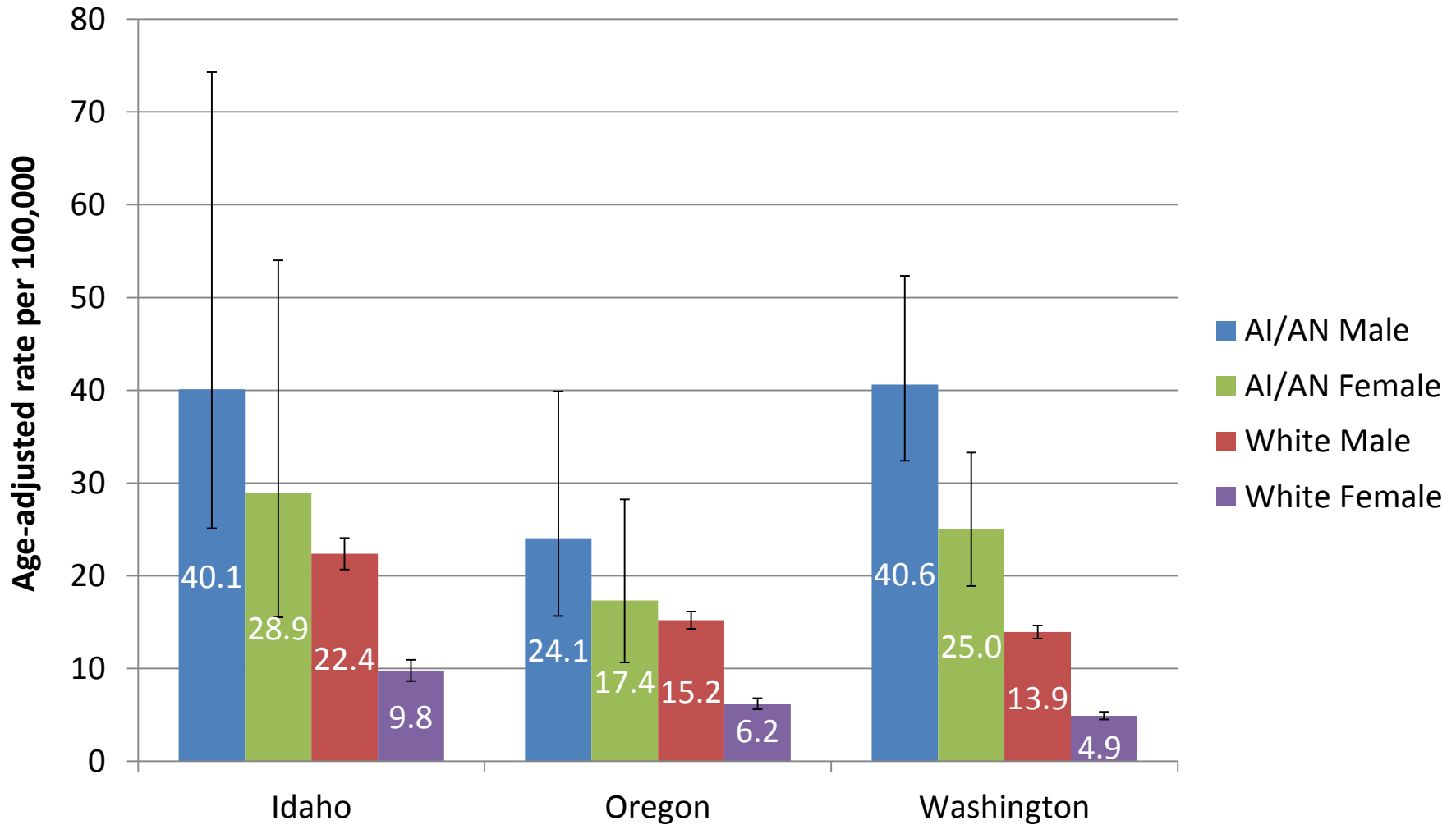


Motor vehicle crash mortality, 2006-2009



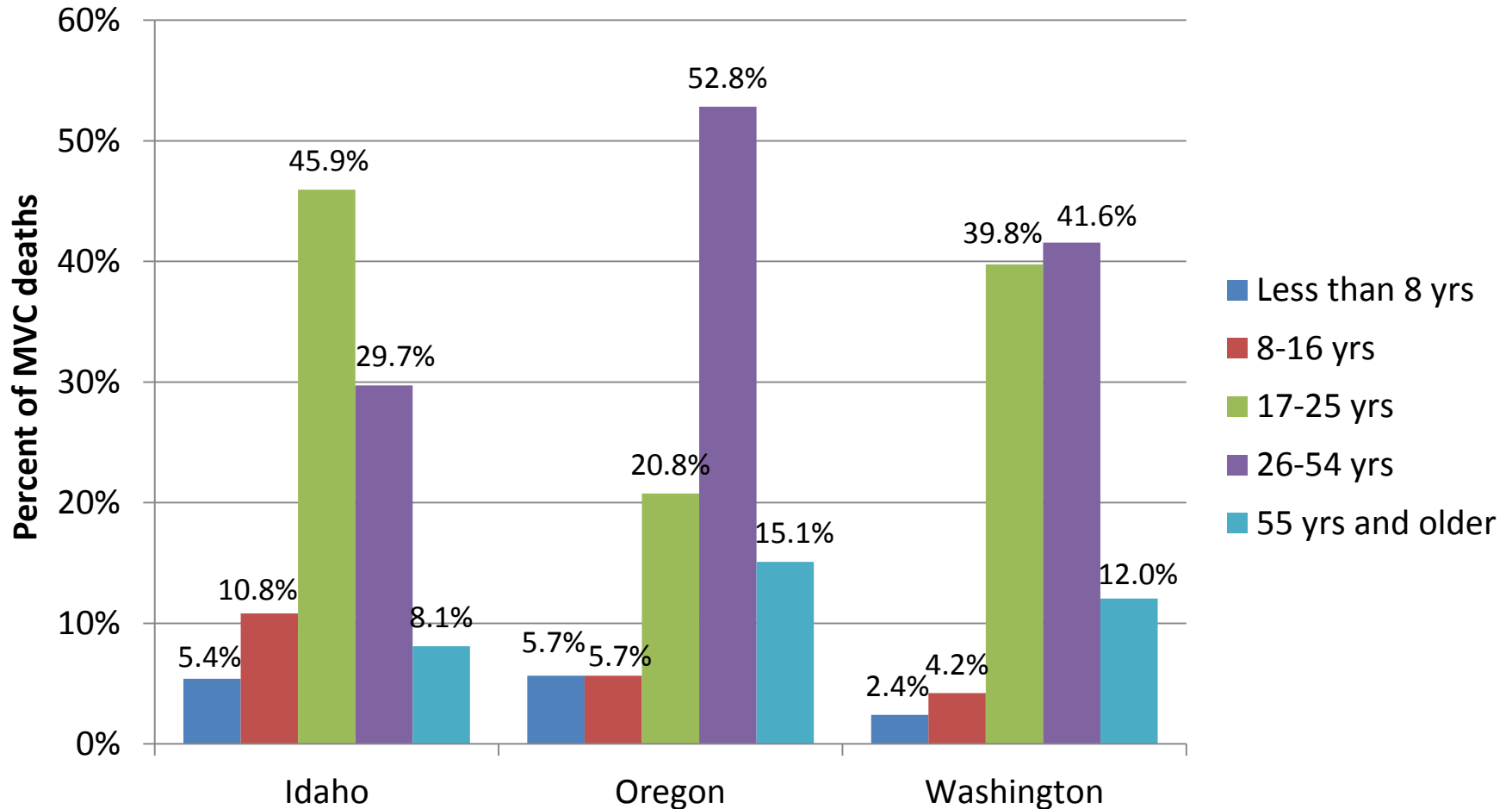


MVC mortality by sex, 2006-2009



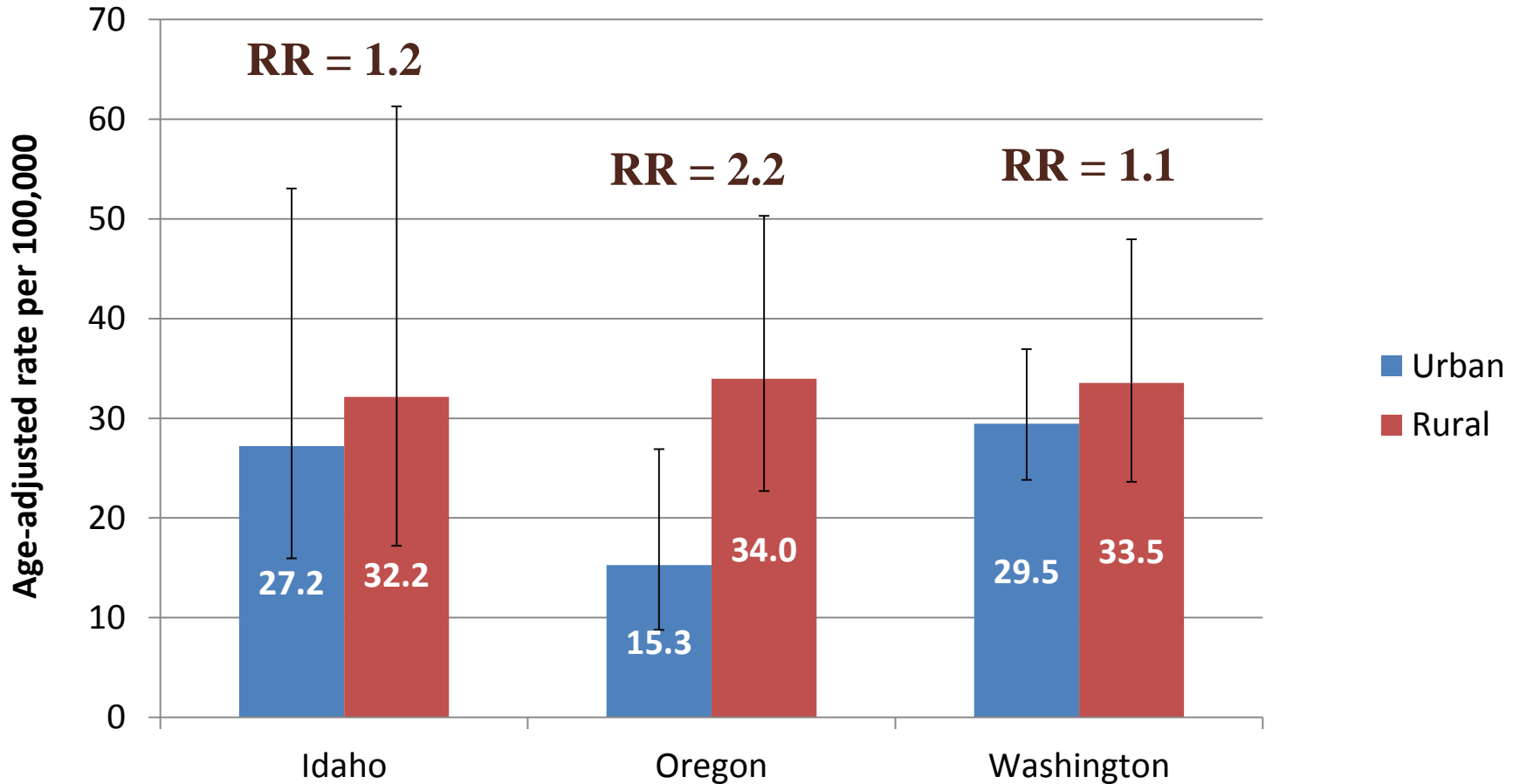


AI/AN MVC mortality by age, 2006-2009



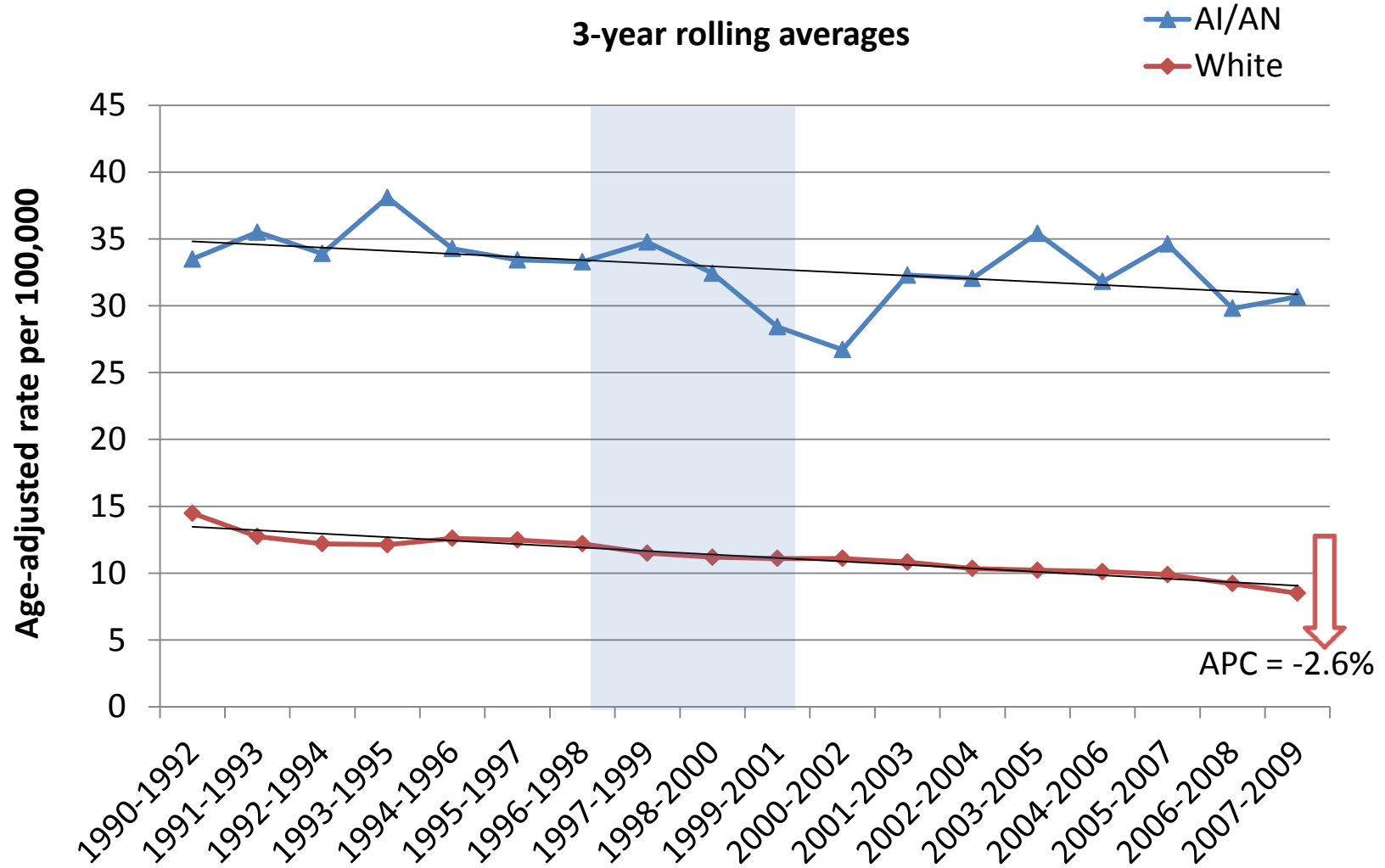


AI/AN urban vs. rural MVC mortality, 2006-2009





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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