Trends in Unintentional Injury Mortality among American Indians and Alaska Natives, Washington, 1990-2009

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Background

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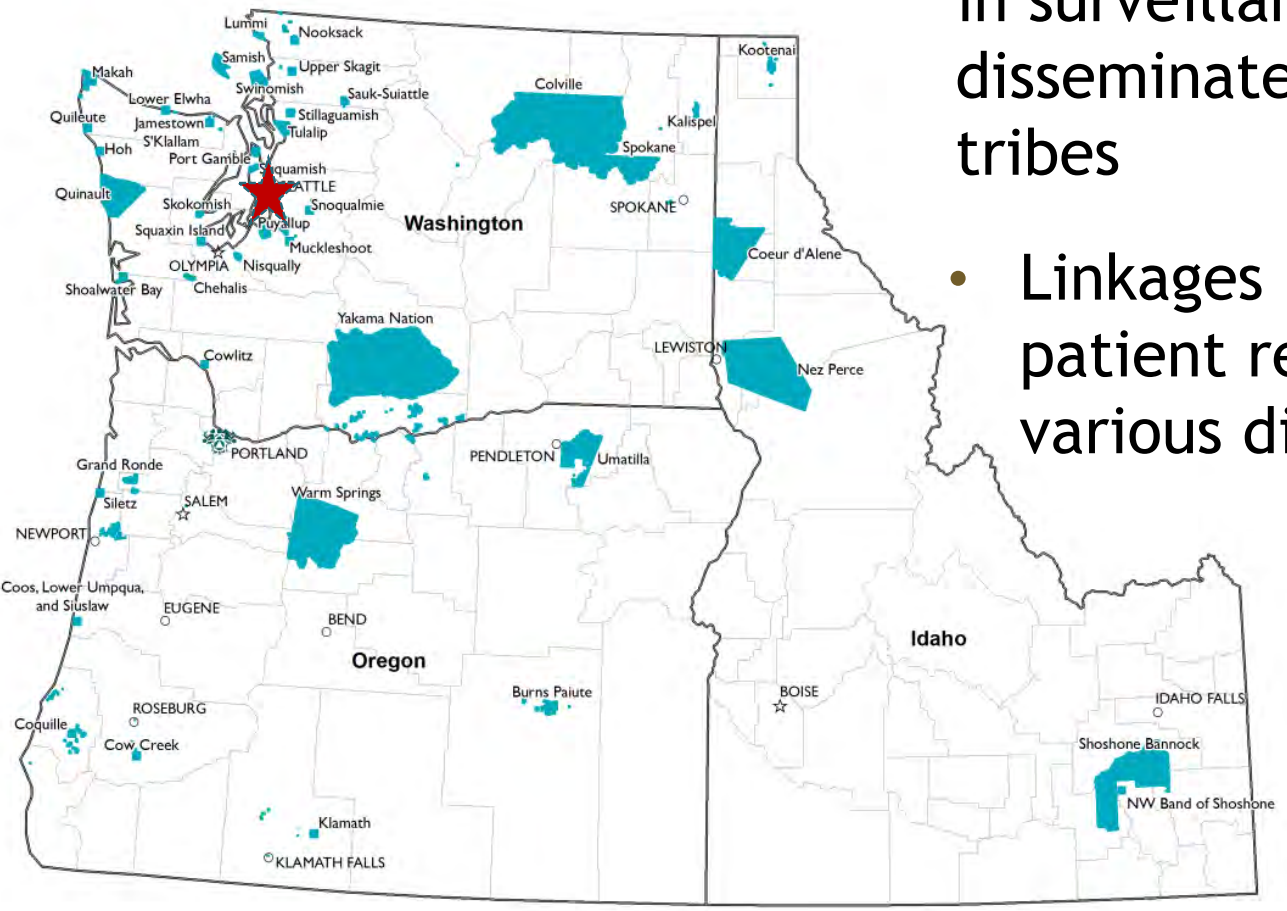
Excess mortality among AI/ANs

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

AI/AN race often misclassified on death certificates

- Race not always based on self-report or next-of-kin report
- Net result: morbidity and mortality measures are *underestimated* for AI/AN
- One approach: Linkage between Indian patient registration data and disease registries

Improving Data & Enhancing Access (IDEA-NW)



- Project goals: Reduce misclassification of AI/AN race in surveillance systems; disseminate health data to NW tribes
  - Linkages between Indian patient registration and various disease registries

Methods

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Data Sources and Linkage

- Washington death certificates, 1990-2009
- **Northwest Tribal Registry**
  - AI/AN registered at IHS/tribal clinics in the NW
  - Augmented with data from urban clinics
  - All records are known AI/AN
- Probabilistic linkage
  - Link Plus software
  - Names, birthdates, SSN, etc. are compared
  - Each pair given a score indicating likelihood of a match, “gray area” matches reviewed by hand

Analysis

- Cause of Death defined using ICD-9/10 **only underlying** cause of death
- AI/AN in analysis = AI/AN on death certificate and/or matched Tribal Registry
  - White race selected for comparison
  - Used bridged-race field
    - Race collection changed from single to multiple-mention during study period

Analysis

- **Rates** age-adjusted, per 100,000 population, 3-year rolling averages
- **Trends**: linear regression, p<.05
  - Annual percent change (APC)

$$APC = \left(e^{b_1} - 1\right) x\ 100$$

- NCHS bridged-race population estimates used as population denominators

Results

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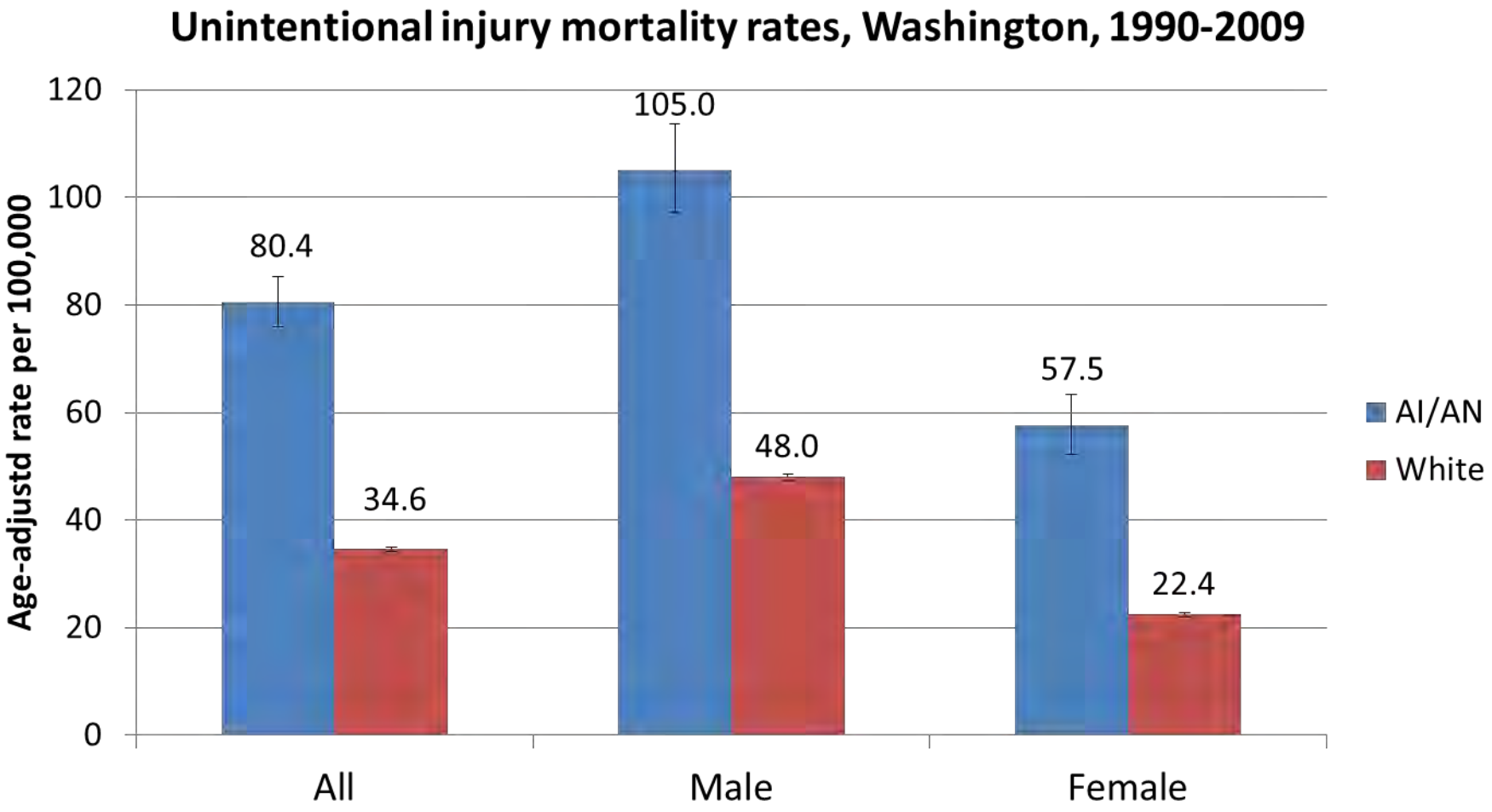
Linkage increased ascertainment of AI/AN deaths by 12%

	Before linkage	After linkage
AI/AN Deaths	10,870	12,212
White Deaths	795,675	794,409

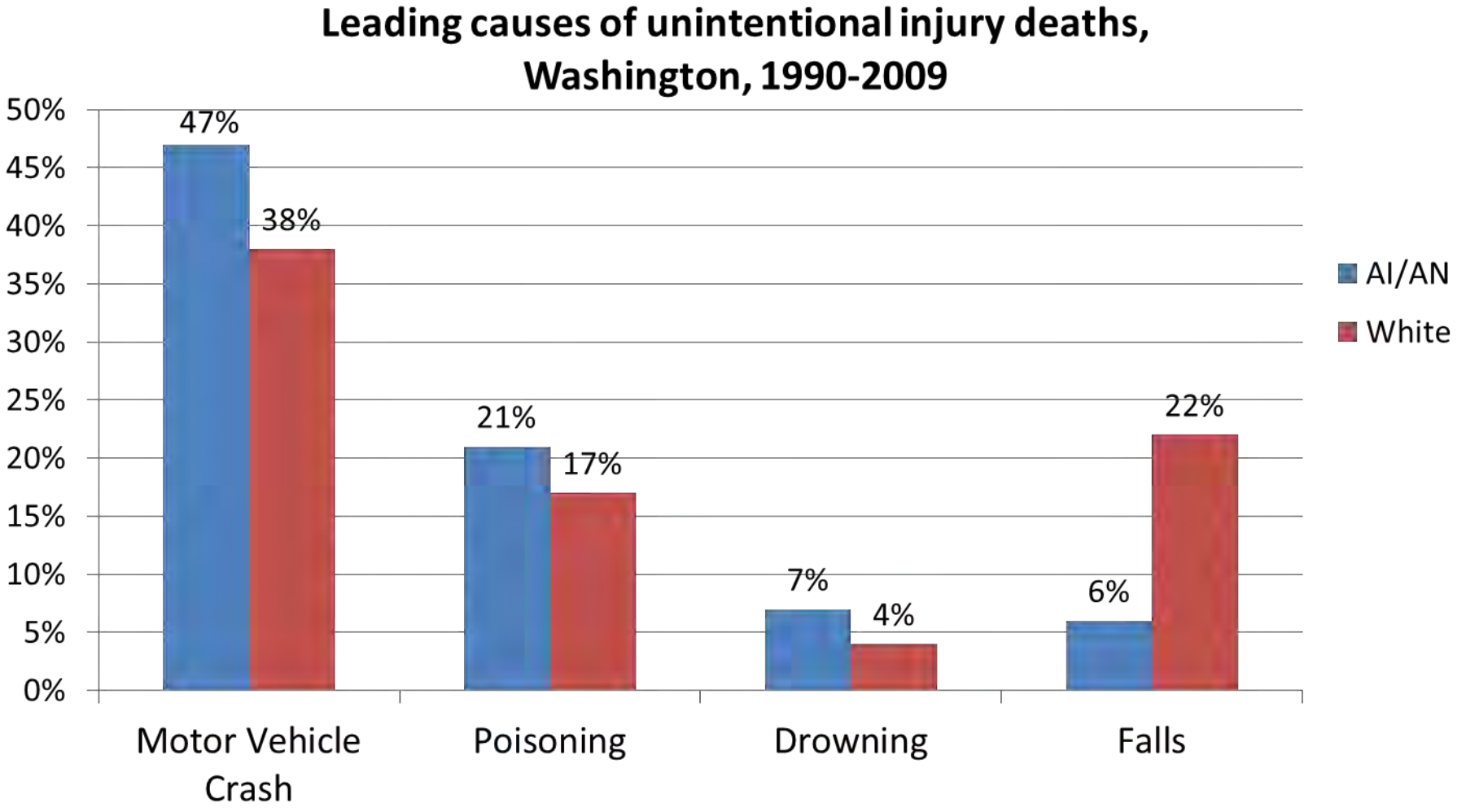
Washington AI/ANs died at younger ages (1990-2009)

	AI/AN	White	Difference
Mean age at death	57.7	73.6	15.9 years

Unintentional injury mortality rates over two times higher for AI/AN



Motor vehicle crashes and poisoning cause majority of injury deaths



Injury Trends

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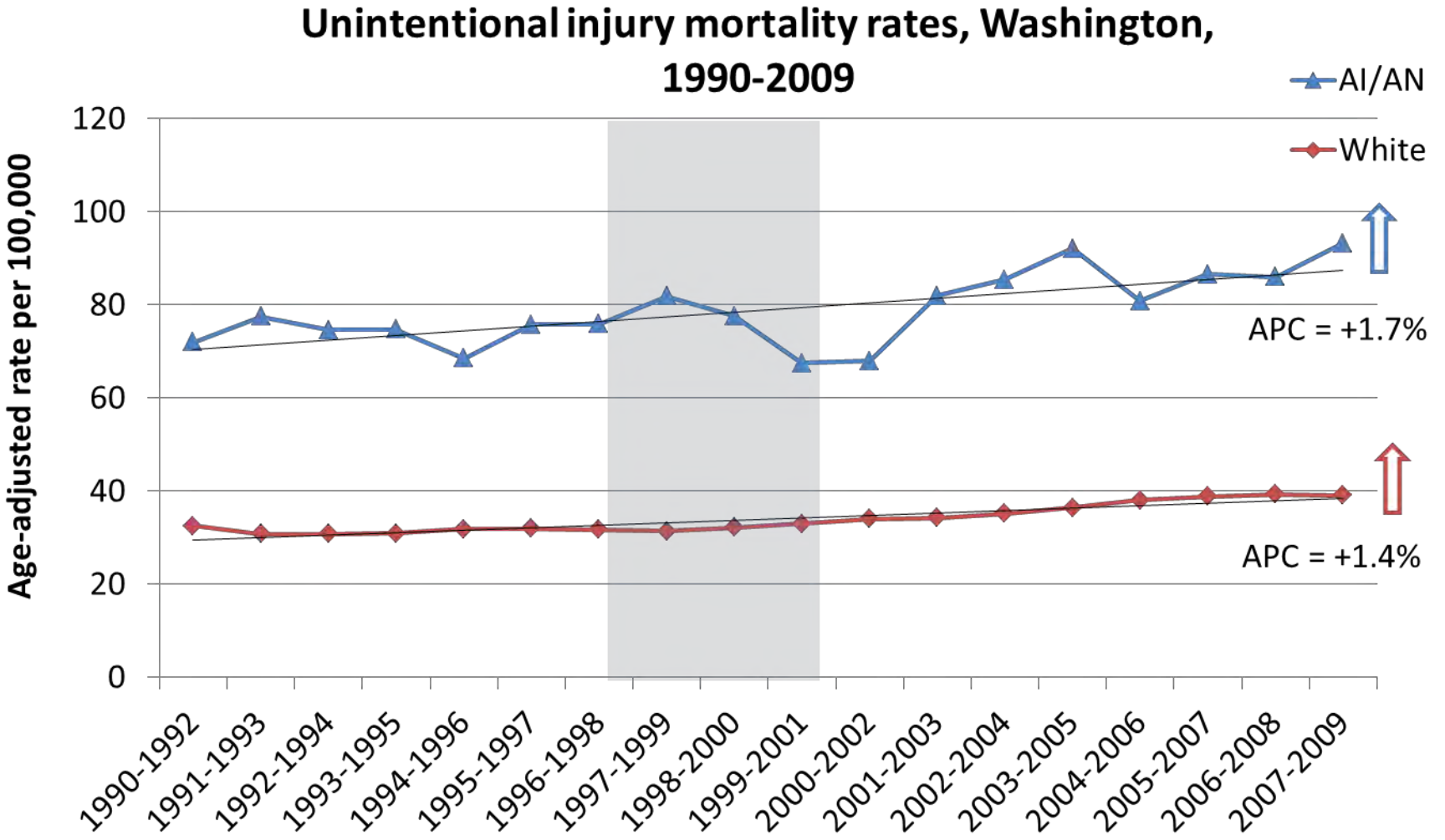
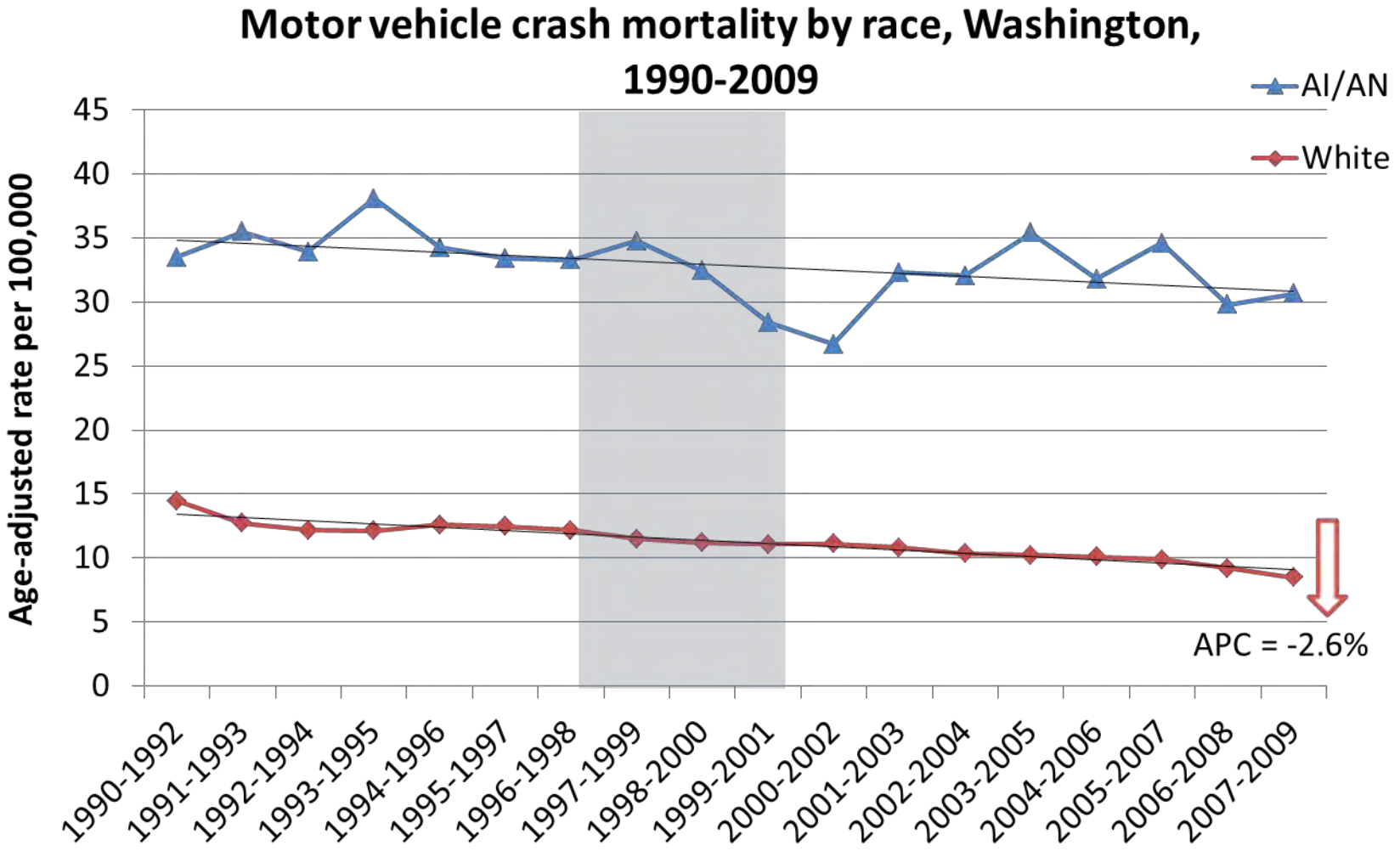
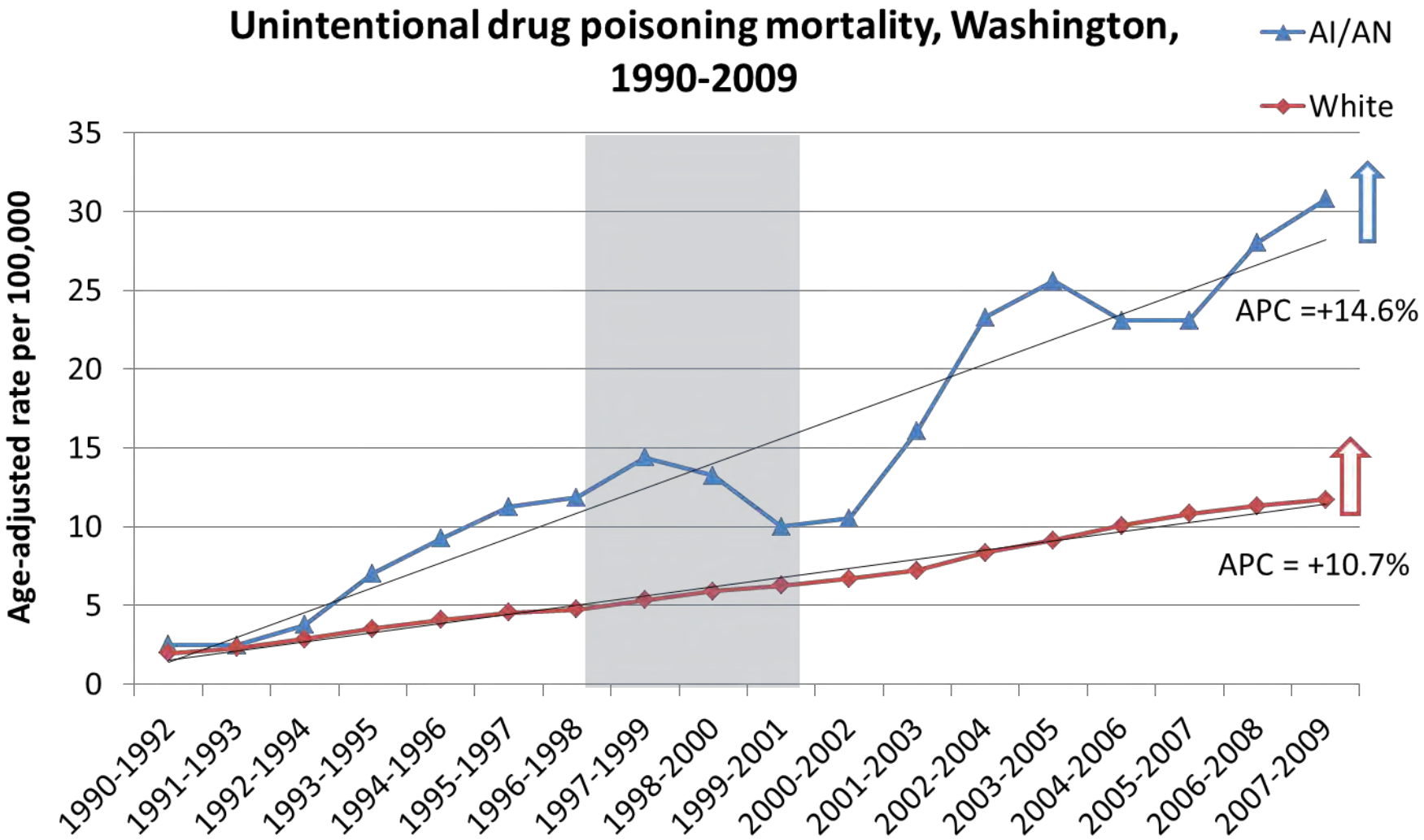
Unintentional injury mortality increased, AI/AN rates consistently higher than whites



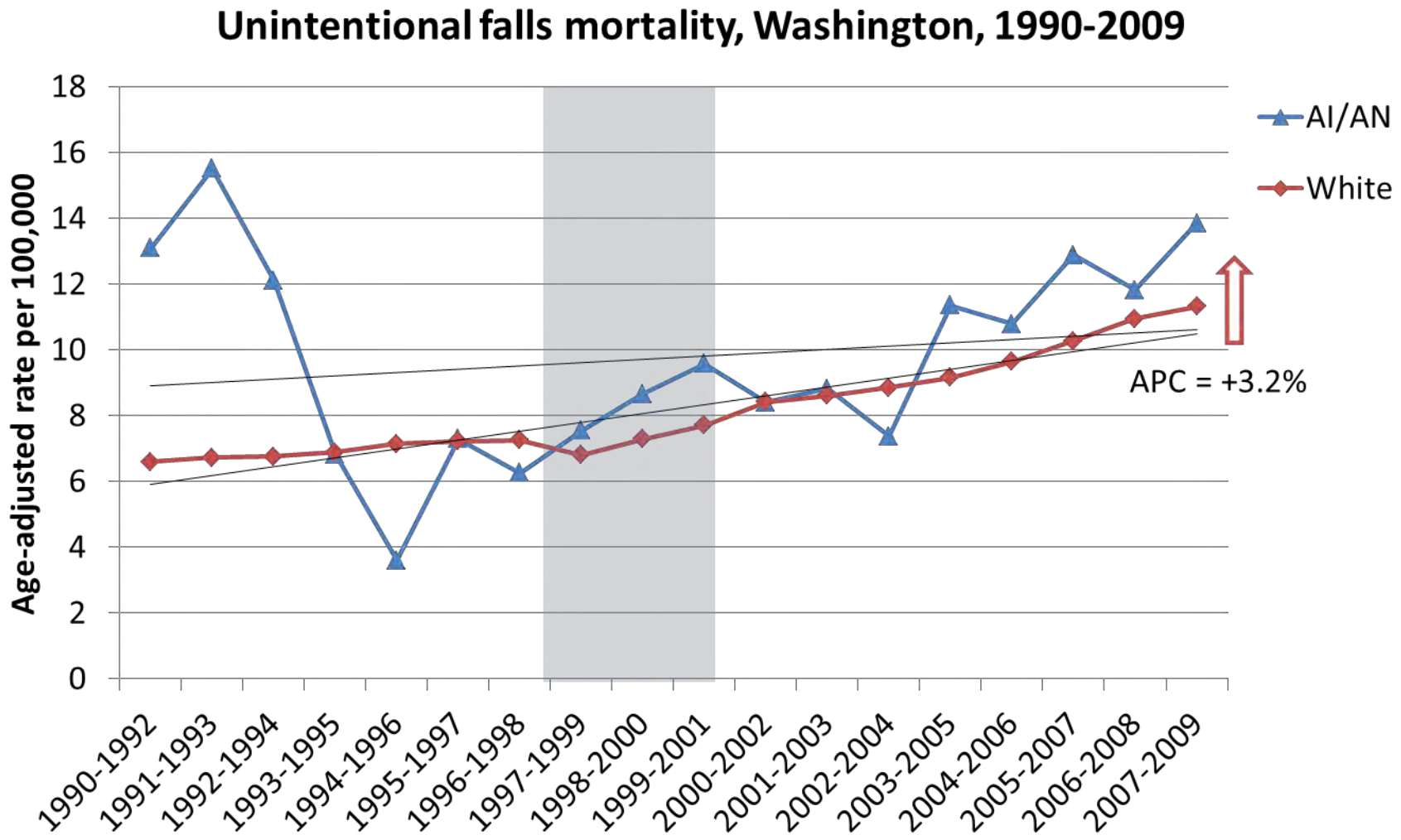
AI/AN MVC mortality rates consistently higher than whites, gap growing



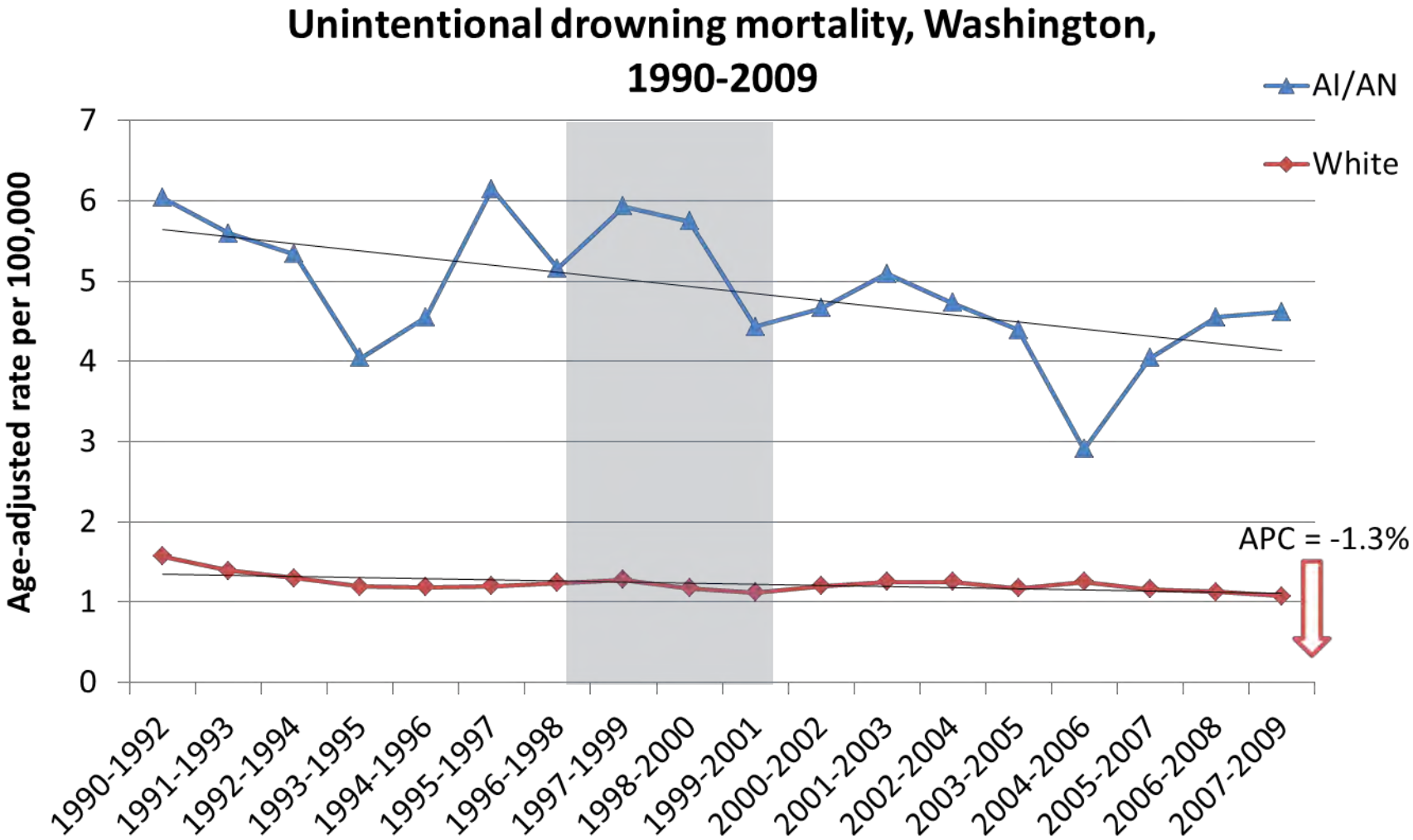
From 1994 onward, AI/AN unintentional drug poisoning rates higher than whites and increasing faster



Fall mortality rates similar to whites and increased marginally



Drowning deaths decreased for both races, not significantly for AI/AN



Conclusions and Next Steps

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Many disparities exist in mortality for Washington AI/ANs

- AI/ANs in Washington are dying much younger than whites
- Higher rates of mortality due to MVC, drug overdose
- Improvements in injury mortality experienced by whites have not always occurred for AI/ANs
- Correct racial classification is important factor in accurate mortality surveillance
  - Linkage can help address misclassification

Challenges & next steps

- 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
- Death certificate data does not answer the "why" questions
  - Other data sources help with behavioral, environmental factors

Thank You

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