Injuries as a Public Health Problem

IHS Injury Prevention
Advocacy, Outreach and Results

Injuries as a Public Health Problem
Learning Objectives

By the end of the session, attendees will be able to:
1. Understand the impact of severe injuries on AI/AN communities.
2. Learn injuries are not “accidents” but are predictable and preventable.
4. To foster collaboration with key stakeholders to prevent injuries.
IHS Injury Prevention Program

• Headquarters
• Area
• District
• Service Unit
• Tribal
• EHSC
Injury Prevention Program

• Program priorities – Motor Vehicle, Fall Prevention

• Training – IP Cores courses, IP Fellowship

• IP Tribal Cooperative Agreement funding – 40 grantees
  – TIPCAP newsletter, annual workshop

• Agency Federal Partners – CDC, BIA, NHTSA, US Fire, FH

• Advocacy / outreach/ website
ANNUAL IHS

1. NCHS Vital Statistics System for numbers of deaths. Bureau of Census for population estimates
2/3. 1998-99 Trends in Indian Health
4. Inpatient Hospital Per Diem Rate, Federal Register: 1/24/01, Vol. 66, No. 16
Accident: an unforeseen or unplanned event; or an event occurring by chance
Injury Types

Unintentional Injury
- unplanned/unexpected injuries (falls, MVC’s, drowning, burns, etc.)

Intentional Injury
- self-inflicted violence (suicide/attempts)
- homicide
- rape/sexual assault
- child/elder abuse
Magnitude of the Injury Problem

- Unintentional injuries are the leading cause of death for AIAN ages 1-44 and the third leading cause overall
- Motor vehicle injuries are a leading type of injury death for ages 1-44
  - Second – Poisoning
    - Narcotics
    - Prescription drugs
    - Alcohol
  - Third – Drowning
- Mortality data for AIAN

CDC WISQARS 10/13 H Billie
Death by Age

Natives die at younger ages than all the US

Percent distribution

%
<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>YPLL</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Causes</td>
<td>167,928</td>
<td>100.0%</td>
</tr>
<tr>
<td>Unintentional Injury</td>
<td>43,055</td>
<td>25.6%</td>
</tr>
<tr>
<td>Suicide</td>
<td>14,730</td>
<td>8.8%</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>14,689</td>
<td>8.7%</td>
</tr>
<tr>
<td>Malignant Neoplasms</td>
<td>14,524</td>
<td>8.6%</td>
</tr>
<tr>
<td>Liver Disease</td>
<td>11,290</td>
<td>6.7%</td>
</tr>
<tr>
<td>Homicide</td>
<td>8,827</td>
<td>5.3%</td>
</tr>
<tr>
<td>Perinatal Period</td>
<td>7,604</td>
<td>4.5%</td>
</tr>
<tr>
<td>Congenital Anomalies</td>
<td>7,209</td>
<td>4.3%</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>4,307</td>
<td>2.6%</td>
</tr>
<tr>
<td>Influenza &amp; Pneumonia</td>
<td>2,340</td>
<td>1.4%</td>
</tr>
<tr>
<td>All Others</td>
<td>39,353</td>
<td>23.4%</td>
</tr>
</tbody>
</table>
Years of Potential Life Lost

- A measure of premature mortality (early death)
- Provides insight into impact of injury-related death on society compared to other leading causes of death
- 2005-2007 AIAN have a life expectancy 4.1 years less than U.S. all races population (73.6 years to 77.7 years, respectively)
- Years lost before age 75
  - subtracts each deceased person's age at death from 75
  - if your predetermined end point was 75 years and a person died at age 17, the YPLL would equal 75 years - 17 years = 58 YPLL.
Years of Potential Life Lost (YPLL) Before Age 75  
2006 – 2010, US by Race, Both Sexes, Percent of All Deaths

Unint. Injury  | Suicide  | Homicide
---|---|---
White  | 16.7 | 5.9 | 9.9 | 1.9 | 11.4 | 6.3 | 2.9 | 23.3 | 6.7 | 4.2 | 15.3 | 5.1 | 3.7 | 2006 – 2010, US by Race, Both Sexes, Percent of All Deaths

CDC WISQARS 10/13  H Billie
## Leading Causes of Death for AI/AN 2006-2010, Both Sexes

<table>
<thead>
<tr>
<th>Rank</th>
<th>Age Groups</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-24</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Homicide</td>
<td>Malignant Neoplasms</td>
<td>Suicide</td>
<td>Suicide</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Congenital Anomalies</td>
<td>Congenital Anomalies</td>
<td>Congenital Anomalies</td>
<td>Homicide</td>
</tr>
</tbody>
</table>
# Leading Causes of Death for AI/AN 2006-2010, males and females

<table>
<thead>
<tr>
<th>Rank</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
</tr>
<tr>
<td>2</td>
<td>Suicide</td>
<td>Liver Disease</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
</tr>
<tr>
<td>3</td>
<td>Homicide</td>
<td>Heart Disease</td>
<td>Unintentional Injuries</td>
<td>Diabetes Mellitus</td>
</tr>
</tbody>
</table>

**Age Groups**

- CDC WISQARS 10/13  H Billie
2006-2010, US, Unintentional Injury Deaths
Crude rates per 100,000, Ages 1-44, Both Sexes

All Races: 26.56
White: 28.65
Black: 22.28
AIAN: 35.22
Asian/PI: 8.02
2006-2010 Intentional Injury Deaths
Crude rates per 100,000, Ages 1-44, Both Sexes

- All Races: 16.32
- White: 14.21
- Black: 30.45
- AIAN: 18.1
- Asian/PI: 7.07

CDC WISQARS 10/13  H Billie
2006-2010 Suicides, US, AIAN
Ages 1-44, Both sexes

N=1,612

- Suffocation: 49%
- Firearm: 34%
- Poisoning: 11%
- Other: 6%

CDC WISQARS 10/13  H Billie
2006-2010 Homicides, US, AIAN
Ages 1-44, Both Sexes

N=978

- **Firearm**: 47%
- **Cut/Pierce**: 22%
- **Unspecified**: 18%
- **Other**: 13%
Cost of Injuries

- AI/AN Lifetime cost all injuries $2.1 billion
- MV accounts 45% lifetime costs & 58% lifetime medical cost
- Treatment of Injury is the single largest Expenditure for IHS CHS
- Societal cost – annual medical care, rehabilitation, lost wages, disability, legal, etc

Table 1. Lifetime costs of AI/AN injuries: All injuries and selected causes, 2000 ($ millions)

<table>
<thead>
<tr>
<th></th>
<th>Medical costs</th>
<th>Productivity Loss</th>
<th>Administrative Costs</th>
<th>Total Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Injuries</td>
<td>$489</td>
<td>$1,477</td>
<td>$211</td>
<td>$2,176</td>
</tr>
<tr>
<td>Motor Vehicles</td>
<td>285</td>
<td>610</td>
<td>83</td>
<td>978</td>
</tr>
<tr>
<td>Suicide</td>
<td>19</td>
<td>156</td>
<td>20</td>
<td>194</td>
</tr>
<tr>
<td>Falls</td>
<td>30</td>
<td>89</td>
<td>16</td>
<td>135</td>
</tr>
<tr>
<td>Homicides</td>
<td>16</td>
<td>94</td>
<td>19</td>
<td>129</td>
</tr>
<tr>
<td>Fires</td>
<td>19</td>
<td>30</td>
<td>7</td>
<td>56</td>
</tr>
</tbody>
</table>

Source: The Economic Burden of Injuries Involving American Indians and Alaska Natives: A Critical Need for Prevention; September IHS Primary Care Provider Vol 32, #9
IHS CHS average annual expenses treatment of injuries, poisoning 2002

<table>
<thead>
<tr>
<th>Category</th>
<th>Annual Expense</th>
<th>Average Annual Expense per case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient</td>
<td>$41,063,269</td>
<td>$14,378</td>
</tr>
<tr>
<td>Outpatient</td>
<td>$13,200,209</td>
<td>$752</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$54,263,478</td>
<td></td>
</tr>
</tbody>
</table>

Source: The Economic Burden of Injuries Involving American Indians and Alaska Natives: A Critical Need for Prevention; September IHS Primary Care Provider Vol 32, #9
Unintentional Injury Death Rates
American Indians and Alaska Natives Compared
to U.S. All Races, 1973-2005

Source: Division of Program Statistics, Demographic Statistics Team, Indian Health Service.
Adjusted for age and for misreporting of AI/AN race on the state death certificates. Rates per 100,000 population.
Public Health Approach

1. Define the Problem
2. Identify Risk Factors
3. Evidence based programs
4. Implement & Evaluate
5. Prevention

Injury Surveillance
Who, What
What works?
Public Health Approach
Strengths/Assets

• Accurately identifies local injury priorities based on data
• Set local priorities
• Collaboration with Key stakeholders
• Applies multiple approaches to address injury problems
• Measures the success of prevention activities (best practice, evidence base)
What prevents the problem?

- Modify the environment
  - Roadway
  - Home
  - Gun storage
- Enact and enforce safety legislation
- Educate the public
  - Target media campaigns
Identify Risk Factors

Population at risk (age, gender, specific group)

• Location(s) of events
• Environment
• other factors
Injury Prevention Projects & Successes
Tribal Injury Prevention Cooperative Agreement Program

To build the capacity of Tribes, Tribal/Urban/Non Profit Indian Organizations to build sustainable evidence-based Injury prevention programs.

Tribal IP Coordinators/IHS Project Officers/ Econometric
Tribal Injury Prevention Cooperative Agreement Program, TIPCAP

- Since 1997 awarded more than $22 million to 136 tribal/urban/non-profit AI/AN organizations.

- Target Injury Prevention Program priorities - Motor vehicle – occupant restraint

- Fall Prevention - comprehensive approach – exercise, clinical, home

Pueblo of Jemez IP staff - Jennifer, Maria, Marlon & Nancy Bill
IP Program Successes

- Decrease in MV injuries & fatalities
- Tribal MV policies
- Access to resources
- Project collaboration
- Coalition/advocacy
Data Source: NHTSA, IHS, Tribe
AI/AN Child Passenger Safety

- % Child Seat Safety Use
  - AI/AN 30%
  - All US 85%
Northern Native American Health Alliance

• Creating Caring Communities – CCC
  – Community, Schools to reduce bullying

• Show measureable decreases in truancy and disturbances at local schools
  – Surveys, records, school data
Alaska Suicide Prevention

- Tanana Chiefs – Fairbanks - Cyndi Nation
- 33 Villages
- Crisis Response Teams
  - Safe Talk
  - QPR
  - Mental Health First Aid
  - ASIST
  - Post-vention Connects
  - Installing gun cabinets
NN Child Fatality Review

• Developing policy
• Review child deaths
• Multi-disciplinary approach
• Social Services as lead
  – Thomas Cody
A Message from the Director of the Indian Health Service

To All IHS Provider Readers:

I would like to take this opportunity to recognize the importance of injury prevention and control in American Indian and Alaskan Native (AI/AN) communities. Unintentional injuries are the leading cause of death for AI/ANs ages 1 - 44 years, and Indians experience injuries at a rate 1.5 to 5 times greater than other Americans. Annually, injuries account for 41% of the years of productive life lost for AI/ANs.

Over the past decade, the Indian Health Service (IHS) Injury Prevention Program has contributed to overall decreases in injuries in AI/AN communities. Effective intervention strategies such as efforts to increase the use of safety belts, child safety seats, smoke alarms, and personal flotation devices have helped reduce the high rates of injuries in AI/AN communities. The IHS Injury Prevention Program also sponsors the Tribal Injury Prevention Cooperative Agreement Program, which funds 22 tribal Injury Prevention Coordinators and ten tribal injury prevention intervention projects in 30 different tribal communities across the country. In addition, the IHS Injury Prevention Program sponsors the Injury Prevention Practitioner Training and Injury Prevention Residency Fellowship programs, which have graduated more than 200 individuals since 1988. Many of these graduates have gone on to become some of our leading experts and dedicated proponents of injury prevention and control in AI/AN communities.

The history of the IHS Injury Prevention Program includes a shift in focus from an education-only strategy to the institutionalizing of proven public health practices. This special issue on injury prevention showcases the IHS and tribal partnership efforts to combat the injury disparity rates in AI/AN communities. For more information about the IHS Injury Prevention Program, please visit http://www.ihs.gov/MedicalPrograms/InjuryPrevention/index.cfm.

I want to acknowledge the dedication of all those who have made outstanding contributions in injury prevention and control. This is a lifetime initiative to keep ourselves, our families, our communities, and our nation safe.

Charles W. Grim, DDS, MHSA
Director, Indian Health Service
Assistant Surgeon General

In this Issue...

197 A Message from the Director of the Indian Health Service
198 The Prevention of Suicide in Alaska’s Tribal Health Care Setting
201 Introduction to The IHS Provider Special Issues on Injury Prevention
202 Postgraduate Course on Obstetric, Neonatal and Gynecologic Care
203 Reduce Injuries: Eliminate Disparities in Child Mortality Rates among American Indian and Alaska Native Children and Youth
209 Using Evidence-Based Strategies to Reduce Motor Vehicle Injuries on the San Carlos Apache Reservation
213 The Bemidji Area IHS Sleep Safe Program: Increasing Smoke Alarm Usage in American Indian Head Start Homes
218 The Role of Technical Assistance in the IHS Tribal Injury Prevention Cooperative Agreements Program (TIPCAP): Enhancing Injury Prevention Capacity Among Tribes and Tribal Organizations.
222 Pathways into Health
223 Meetings of Interest
225 Position Vacancies

Injury Prevention in Indian Country

Lawrence Berger, MD, MPH, Clinical Assistant Professor of Pediatrics at the University of New Mexico School of Medicine, volunteered to coordinate two special issues of The IHS Provider dedicated to Injury Prevention in Indian Country. This is the first; the second will be published later this fall. We wish to recognize Dr. Berger’s initiative and hard work that made this project possible.
## Effectiveness of selected injury prevention interventions

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lap/shoulder seat belts</td>
<td>45% reduction in fatalities</td>
</tr>
<tr>
<td>Motorcycle helmets</td>
<td>72% effective in reducing head injury</td>
</tr>
<tr>
<td>Child safety seat laws</td>
<td>35% reduction in fatal injuries</td>
</tr>
<tr>
<td>Smoke alarms</td>
<td>40-50% reduction in fire mortality rate</td>
</tr>
<tr>
<td>Sobriety checkpoints</td>
<td>18-22% reduction in crashes involving alcohol</td>
</tr>
<tr>
<td>Fall prevention interventions</td>
<td>19-43% reduction in average number of falls</td>
</tr>
</tbody>
</table>

• Data – Suicide Surveillance/Injury Surveillance
• Evidenced-based/Effective Strategies
• Increase access to preventive services
• Training (Cross-training)
• Response teams/coalitions
• Local Effort – inform, educate, empower to build capacity
MSPI/DVPI & IP Collaborations

• Mobilize response teams in partnerships/stakeholders
• Data Systems, develop policies
• Comprehensive approach
• Emerging evidence/promising practices
• Document efficacy and impact
• Funding/ resources
• Reduce key public health hazards, issues, etc.