



Seattle CIREN in the Northwest

Outreach & Training across the NHTSA Region X

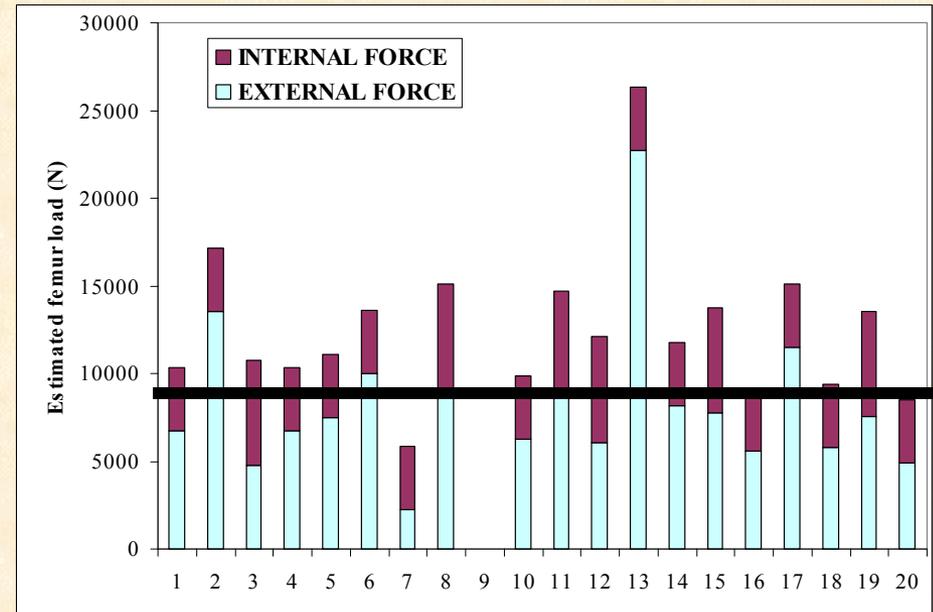
Presenter: Rob Kaufman
Seattle CIREN
Coordinator/Crash Investigator



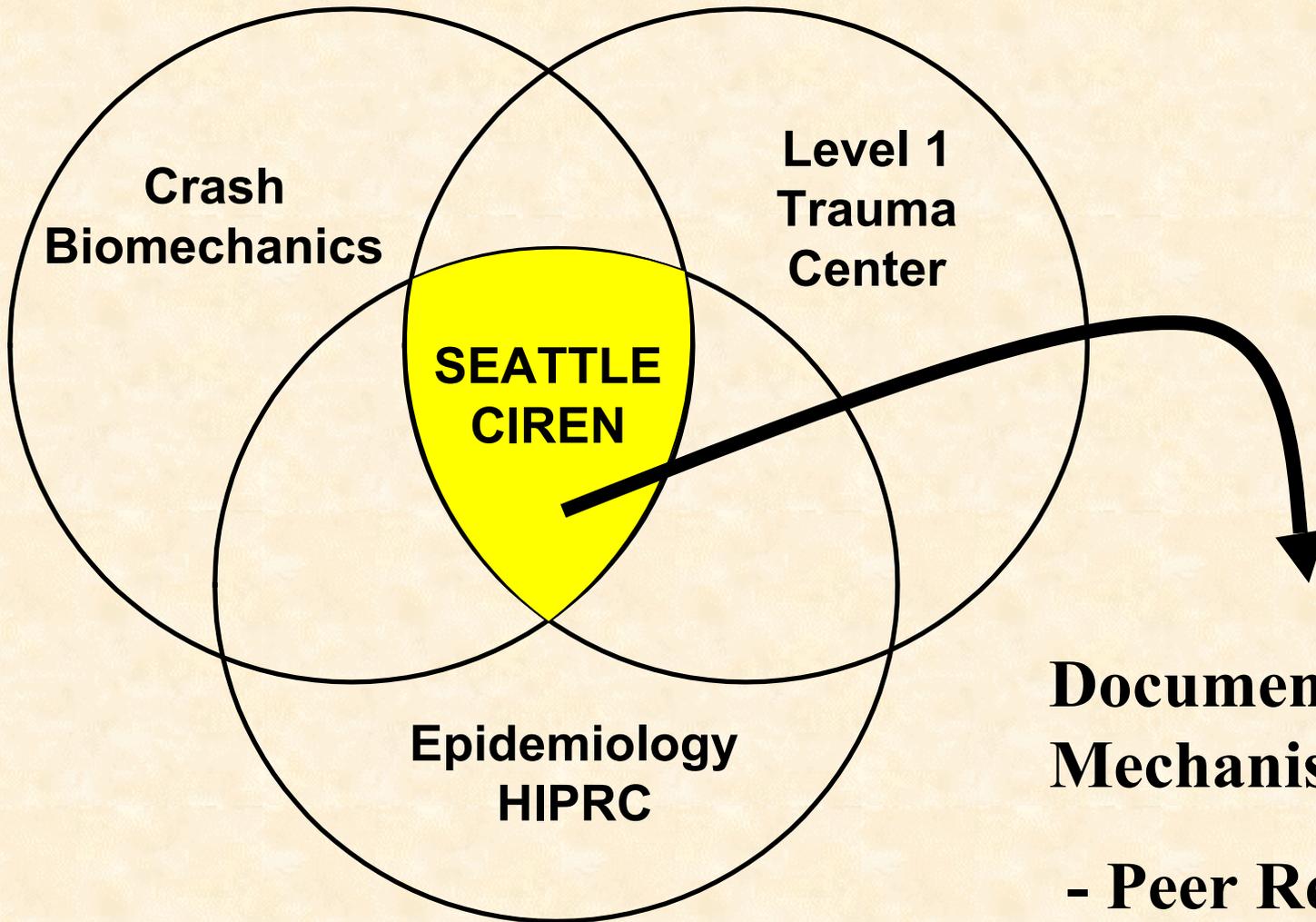
COMMERCIAL PHOTO/PRNEWSFOTO



- Real People vs. Dummies
- Right Leg Braking
- Muscle forces involved in femur fractures



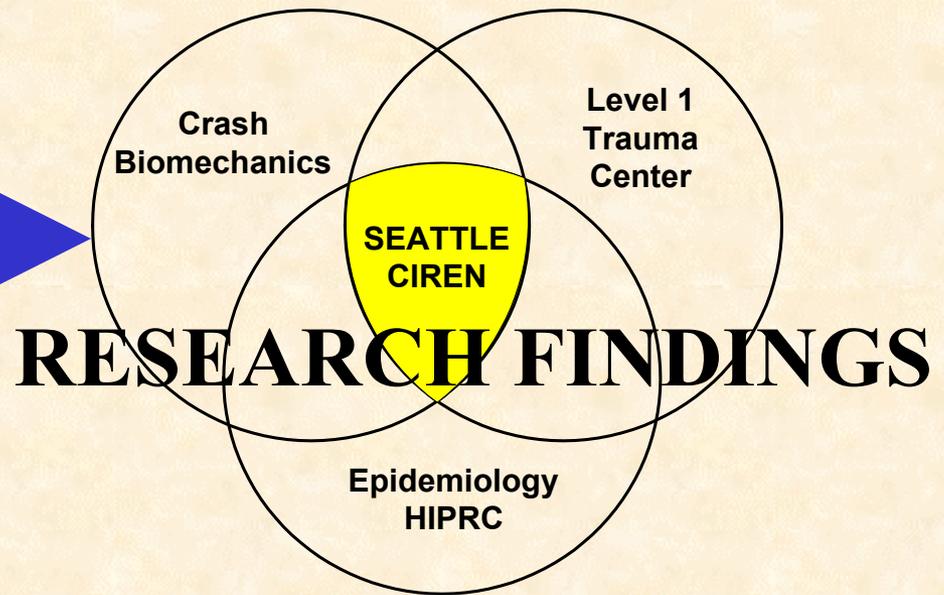
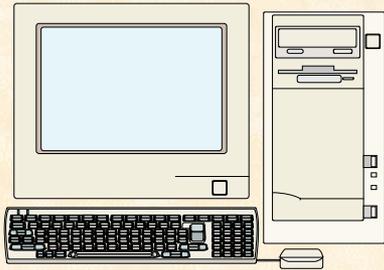
CIREN - Determine and document specific injury mechanisms and forces in real world crashes.



**Documented Injury
Mechanisms**

- Peer Reviewed
- Validity

CIREN Network-Database Detailed Crash/Medical Data



Seattle CIREN

“Effectiveness of a
Koepsell, Grossman

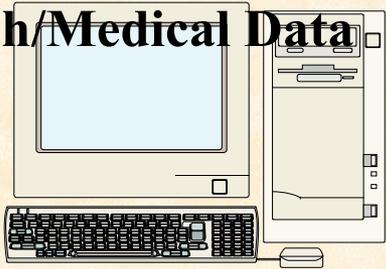
vara,

“Relationship betw
injury in MVC” Mock et al. AA&P 34 (2002) 221-228

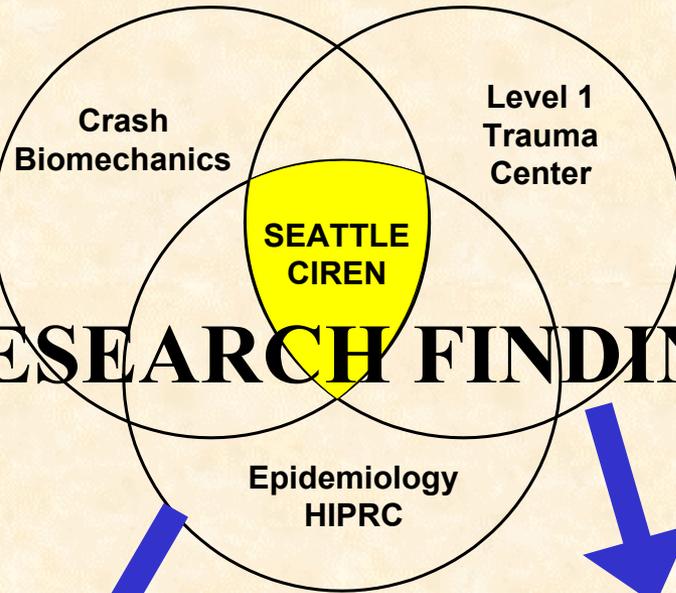
“Estimating the loads in in femurs....” Tencer, Kaufman et al.
AA&P 34 (2002) 1-11

“Correlation of head injuries to contacts in MVC”
Nirula, Mock, Kaufman et al. (In press AA&P)

**CIREN Network
Detailed
Crash/Medical Data**



RESEARCH FINDINGS



**NHTSA- Safety standard
Auto Manufacturers
- Safer Vehicles**

**Training of Trauma Care
Providers -Better Triage-
Transport**

Outreach
Public - seatbelt use
Law enforcement
Traffic Safety interests

**REDUCE ECONOMICS COST
SAVE LIVES**

Seattle CIREN

Outreach and **T**raining

Make the
Research Messages

Seattle CIREN -Target Audiences

- Surgeons/ER Staff/ Trauma Conferences (12)
- Trauma Nurses/ Airlift NW/ Community Programs (4)
- Medics/EMS Local, County, State, & Regional Conference (14)
- Medical Examiners (3)
- Engineers/Auto manufacturers (5)
- NHTSA/Government - CIREN Public meetings (10)
- Traffic Safety/Interest Groups (3)
- Public Safety/Interest Groups (4)
- State DOT conferences (10)
- Law Enforcement/Recons (4)
- Law Enforcement/Officers (5)
- Public / High Schools (7)
- Driver Educators (3)

Seattle CIREN

Total Events = 84

To over 7000 attendees

(Jan. '99 - Fall 2002)

Seattle CIREN Presentation Titles

(all presentations are approximately one hour in length)

- CIREN
- Asses
- “Cras
- Knee
- “Bad
- “Chil
- “Kine
- Door
- AIS -
- Front
- “The

Seattle CIREN National Outreach

National Presentations

Harborview

April 19

April 20

June 199

Sept. 200

CIREN

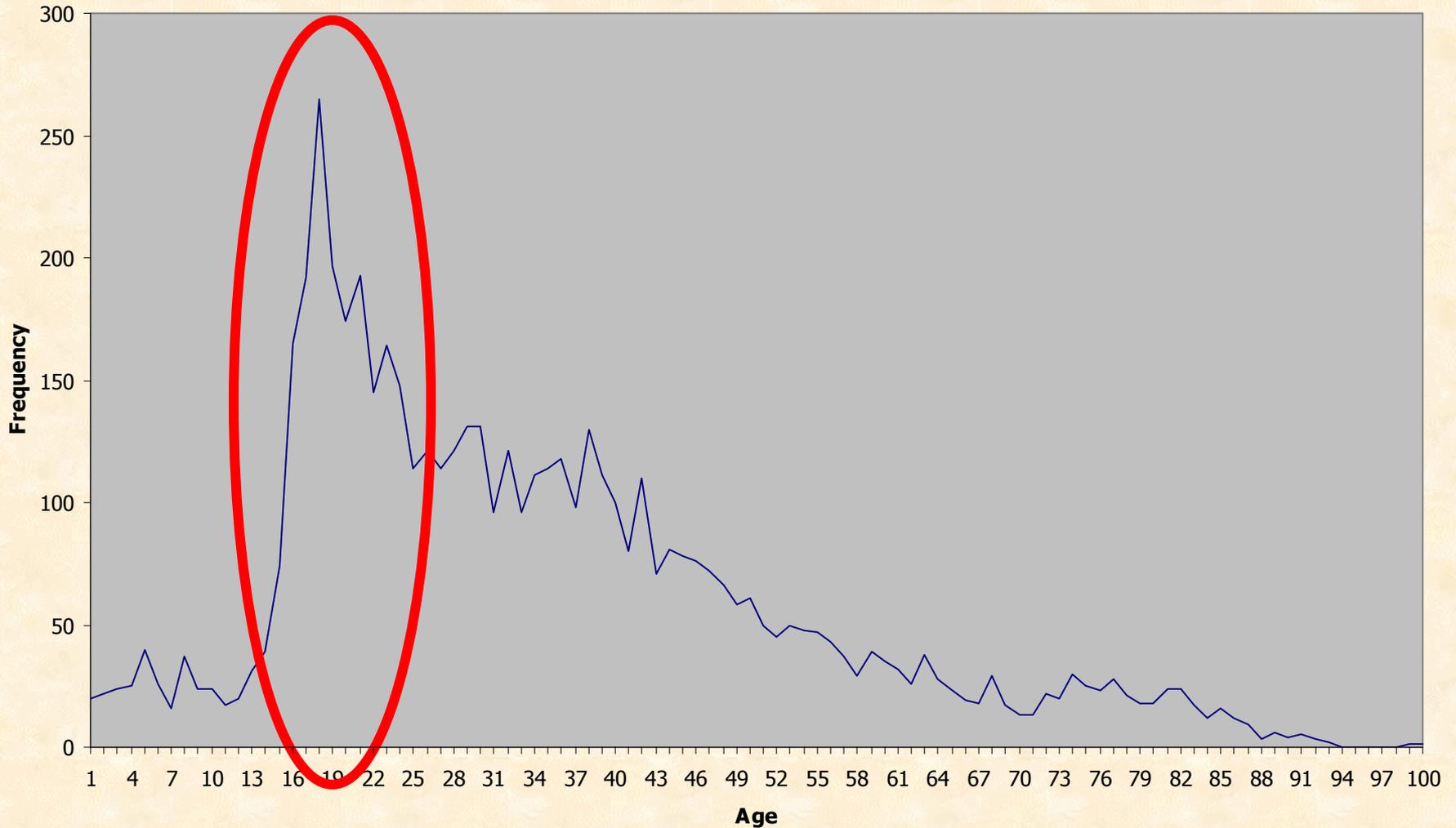
C

Traffic S

AAAM - Sept 2002

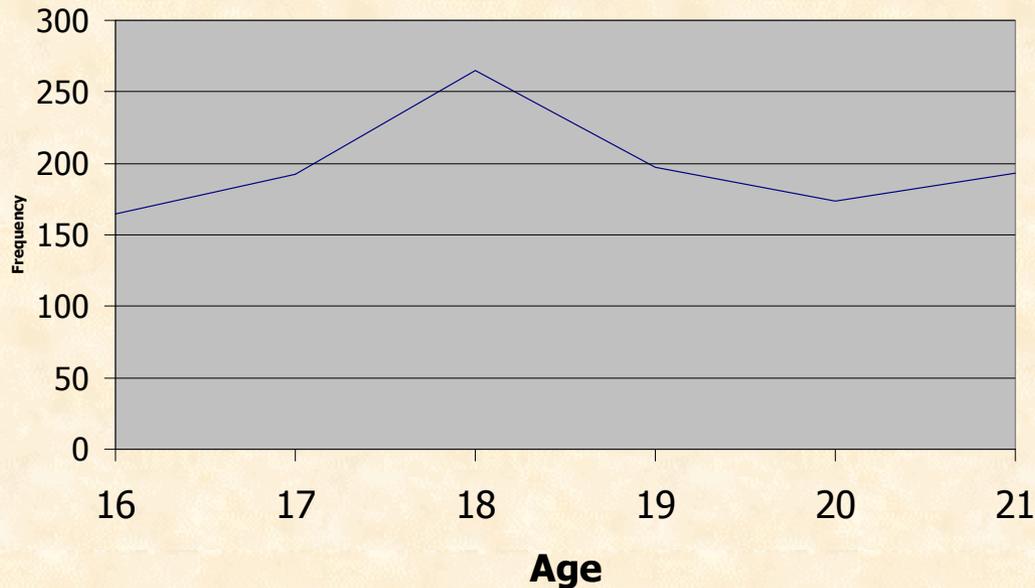
Seattle CIREN - Tracking Data

Age Distribution

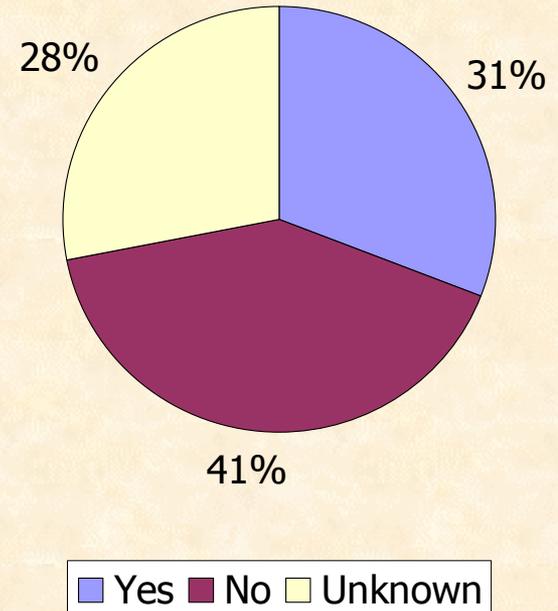


Seattle CIREN - Tracking Data

Age Distribution for Ages 16-21



16-21 Restraint Use



Total for group = 1186 (31%)

Seattle CIREN

Trauma Care Training

Harborview Medical Center

- Staff meetings
- Board Meetings
- In house trauma conferences

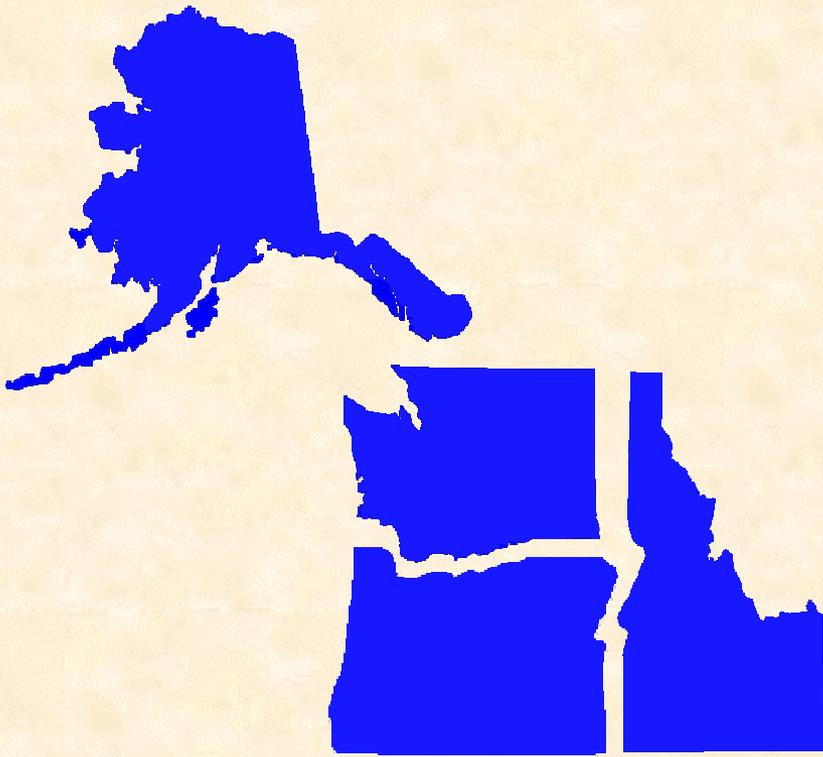
Children Hospital - Grand Rounds/CIREN intro

Good Samaritan/Pierce County Level II

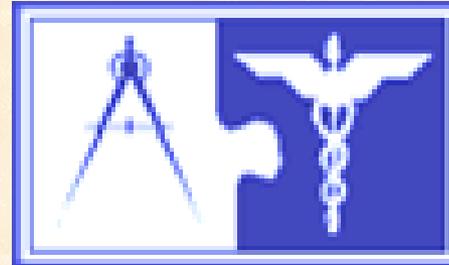
Overlake/King County Level II - Medic, ER training

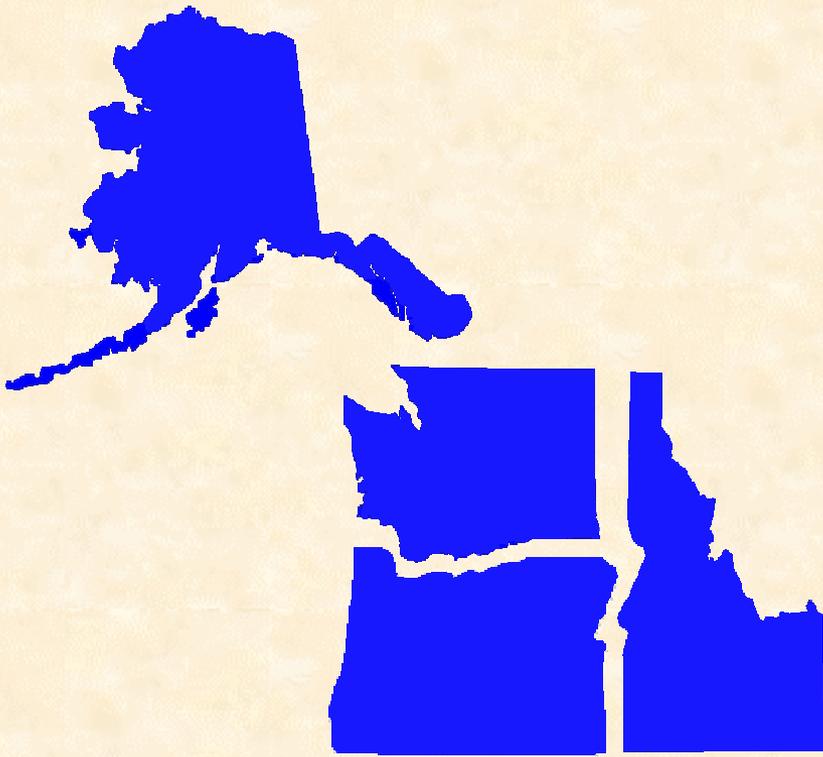
Emmanuel Legacy Level I in Portland, OR

Mason General Level II



Seattle CIREN Outreach Across NHTSA Region X





Seattle CIREN Outreach Across NHTSA Region X

NHTSA Region X All Hands Meeting, Seattle Federal Building

- All State DOT staff from all states in region attend

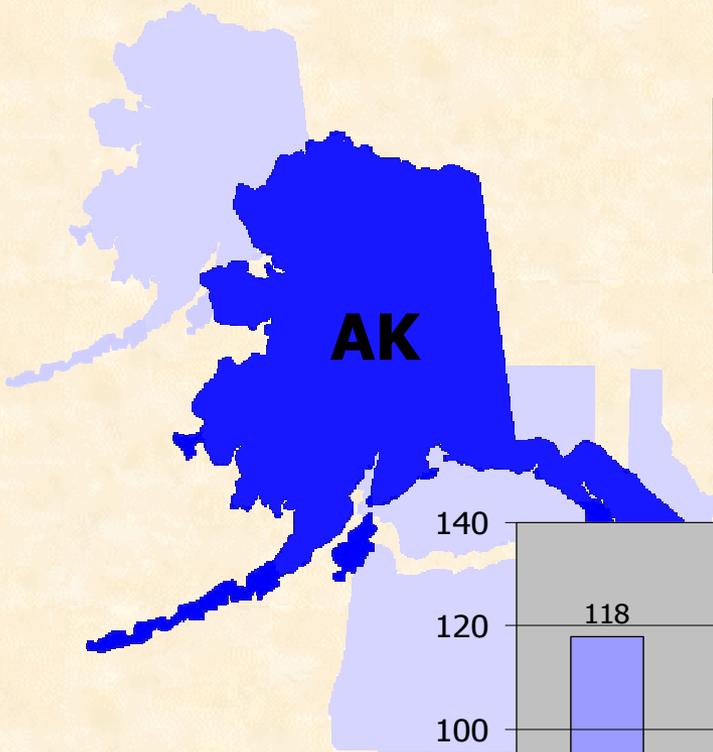
May 2000 - 3 Hour presentation, Kinematics, AIS, Bad to Bone, case reviews, air bag technologies



ALASKA

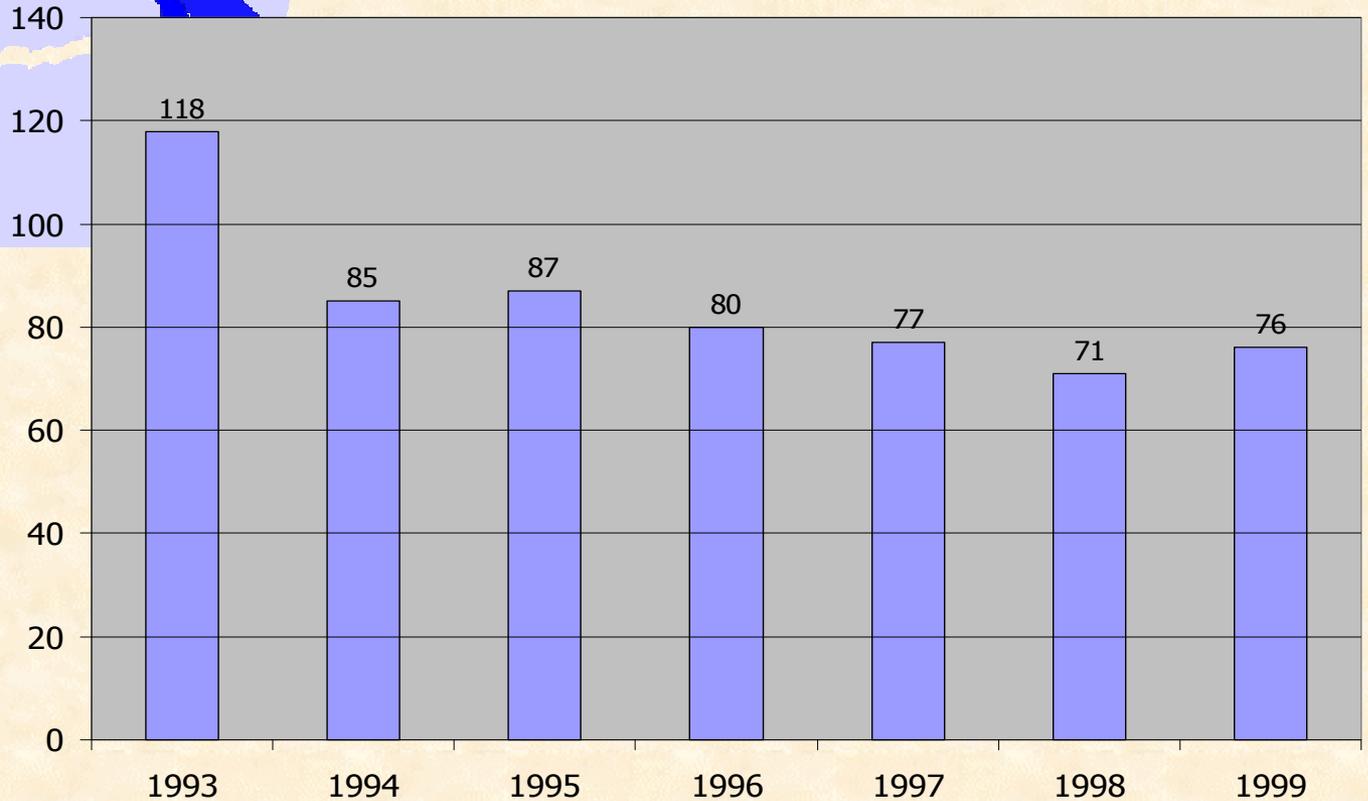
State Seat Belt Law

- Effective 09/12/1990
- Secondary Enforcement
- Seats:
 - All
- Exempt Vehicles:
 - School buses
- \$15 Fine



ALASKA

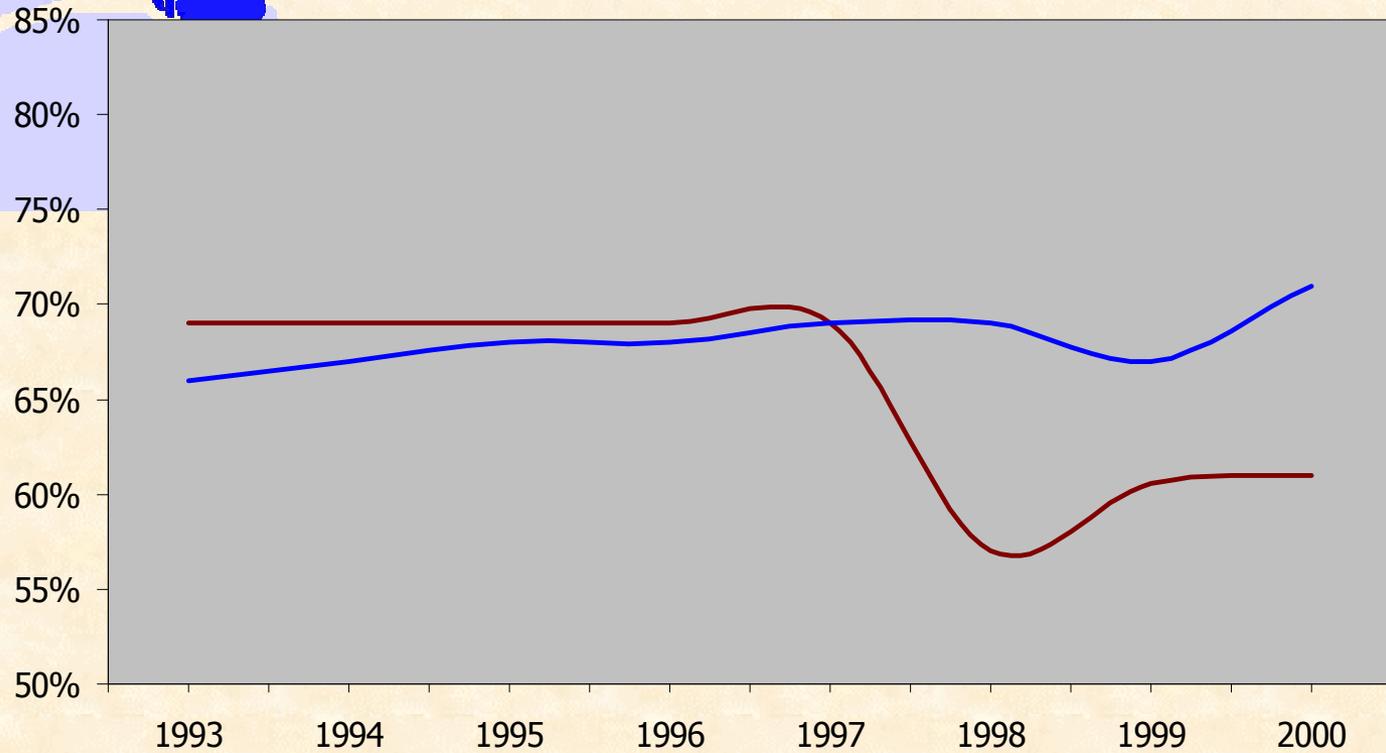
Alaska Traffic Fatalities



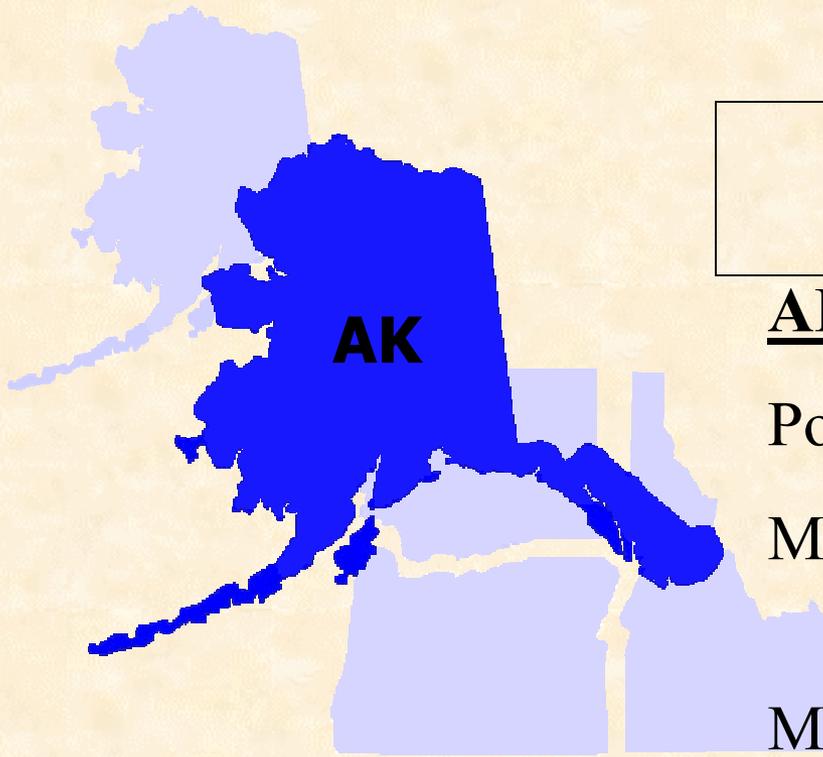
ALASKA

AK

Alaska Restraint Use Rates



— State Use Rate — National Use Rate



ALASKA

AK Buckle Up Summit

Police, DOT, Public Safety, Media

May 2000 - CIREN Intro, Kinematics,
Restraint Use

May 2001 - Children & Crashes

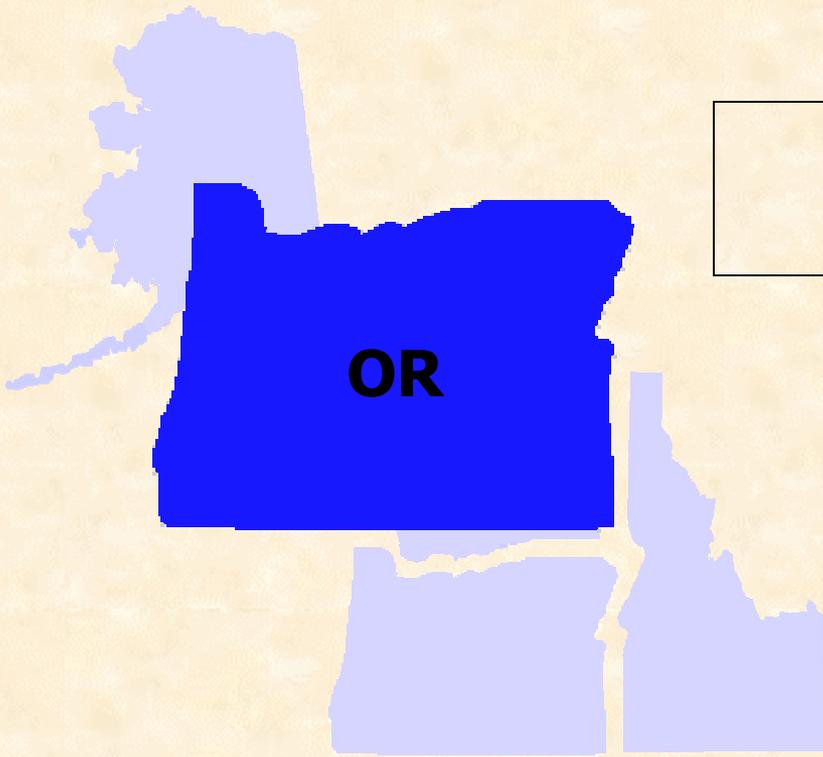
May 2002 - Restrained vs. Unrestrained

(500) October 2001 - Trans-Tech Conference

Restraint Technologies/ Crash Course in Kinematics

(400) November '01-'02 - EMS Symposium- Medic/Med. Staff

Occupant. Kinematics and Restraint Tech., and Bad to Bone.



OREGON

State Seat Belt Law

- Effective 12/07/1990
- Primary Enforcement
- Seats:
 - All
- Exempt Vehicles:
 - NONE
- \$75 Fine

OREGON

OR

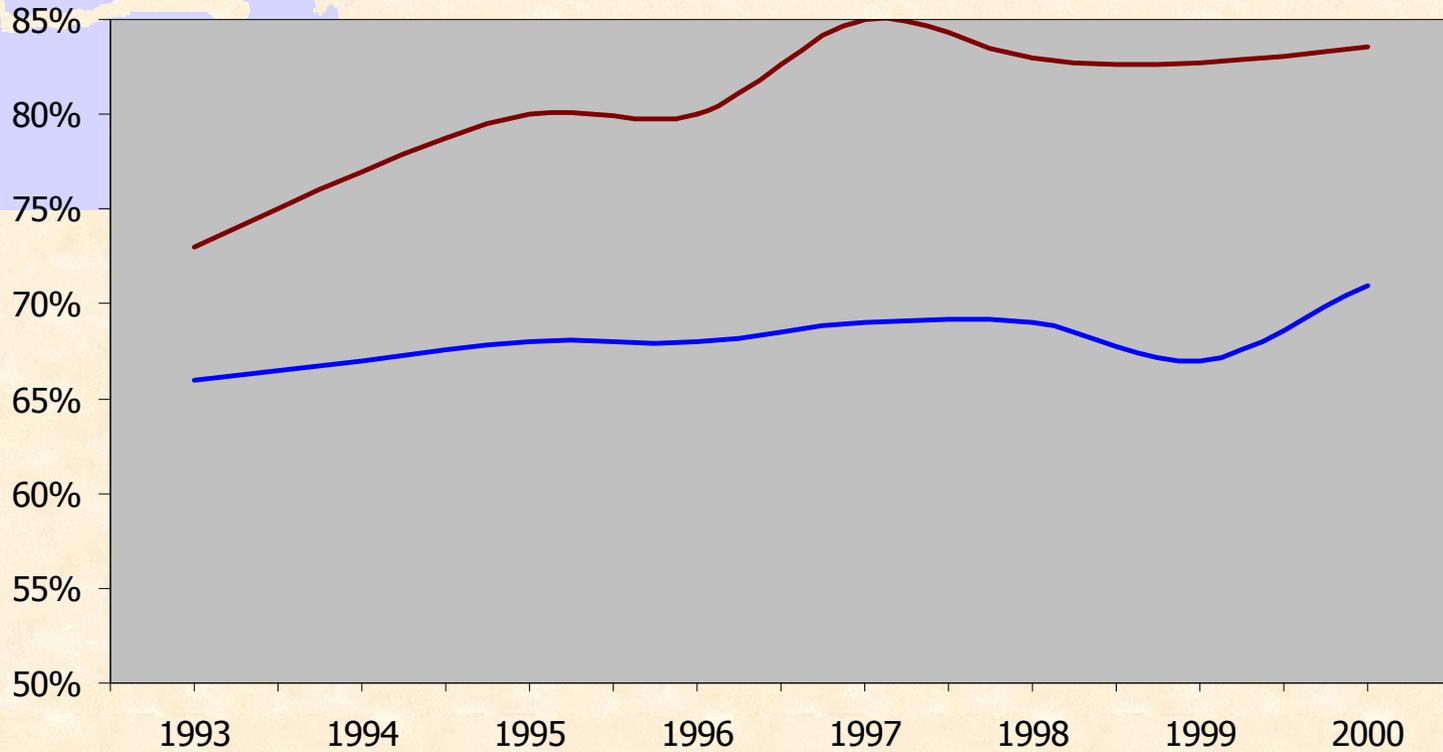
Oregon Traffic Fatalities



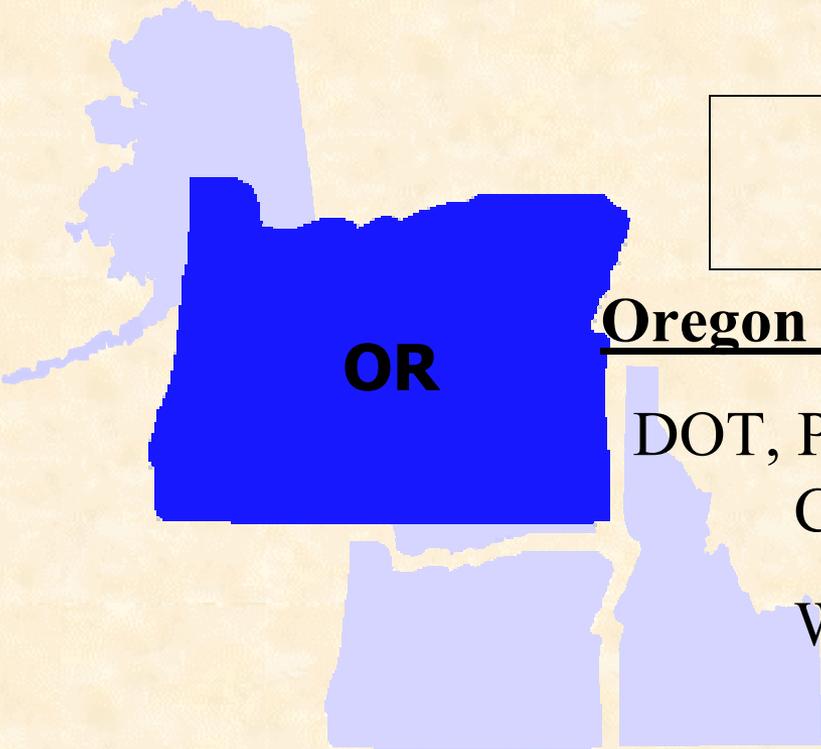
OREGON

OR

Oregon Restraint Use Rates



— State Use Rate — National Use Rate



OREGON

Oregon Transportation & Safety Conference

DOT, Public Safety, Police, Medical
Community, NHTSA, other states

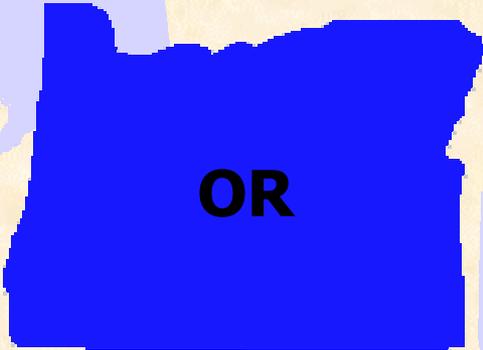
Workshops sessions

October 1999 - CIREN Introduction, Injury Mechanisms, Case Reviews, Airbag Technologies

October 2000 - “Kinematics for Dummies”

October 2001 (2 sessions) - “Occupant Kinematics and Restraint Techniques.” & “Children and Crashes”

October 2002 (3 hour intensive) - Restraints, Force is with you



OREGON

Three Flags (B.C., WA, OR)

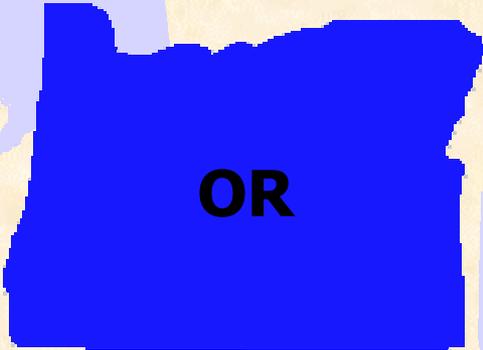
International Law Enforcement Occupant Protection Program

Two officers from each jurisdiction in the state attend. Saturation patrols, PSA taping, guest speakers on seatbelt topics

January 1999 - CIREN Intro, Injury mechanisms, case reviews, air bag technologies

January 2001 - Crash Course in Kinematics - Rotational Forces/Unrestrained vs. Restrained

August 2002 - Two day work shop with above



OREGON

Child Safety Technician Training - ACTS

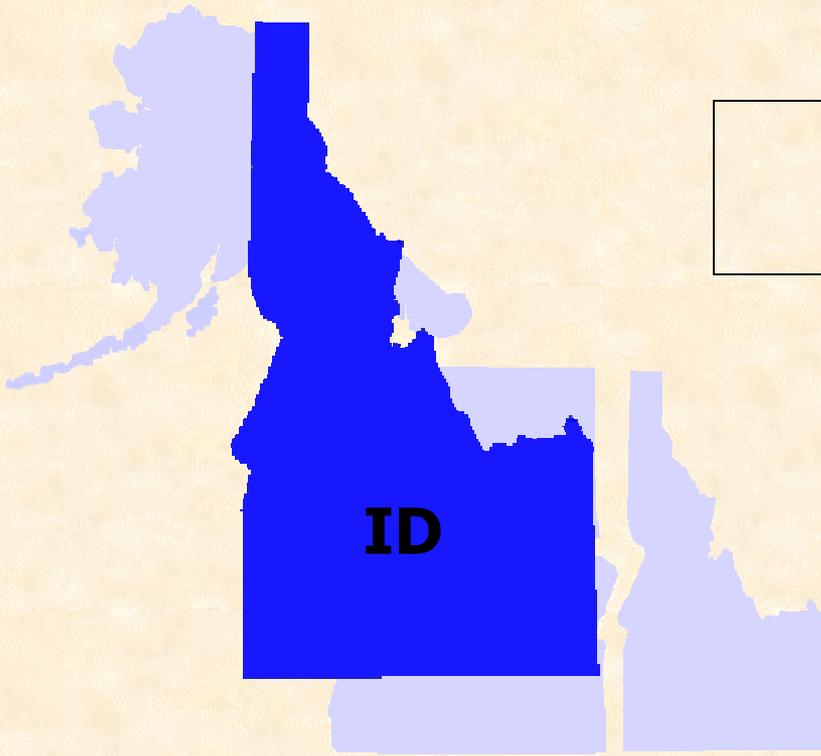
ACTS Oregon - Alliance Coalition for Traffic Safety (state funded)

Regional Update training throughout the state - guest speakers

December 2000 - Children & Crashes lecture

Fall 2001 - Children & Crashes lecture

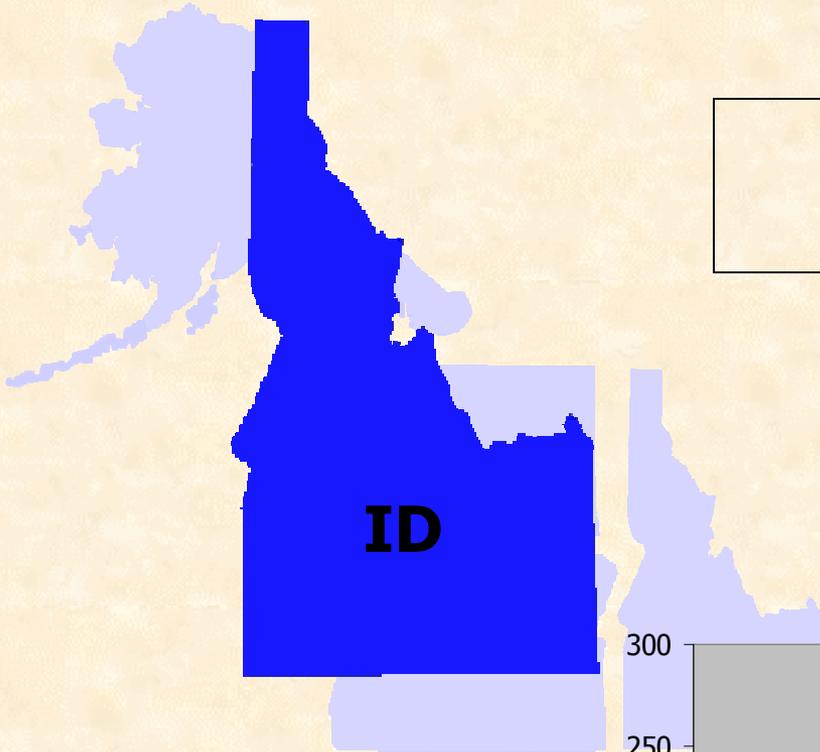
May 2002 - Oregon Dept. of Health - Children & Crashes lecture



IDAHO

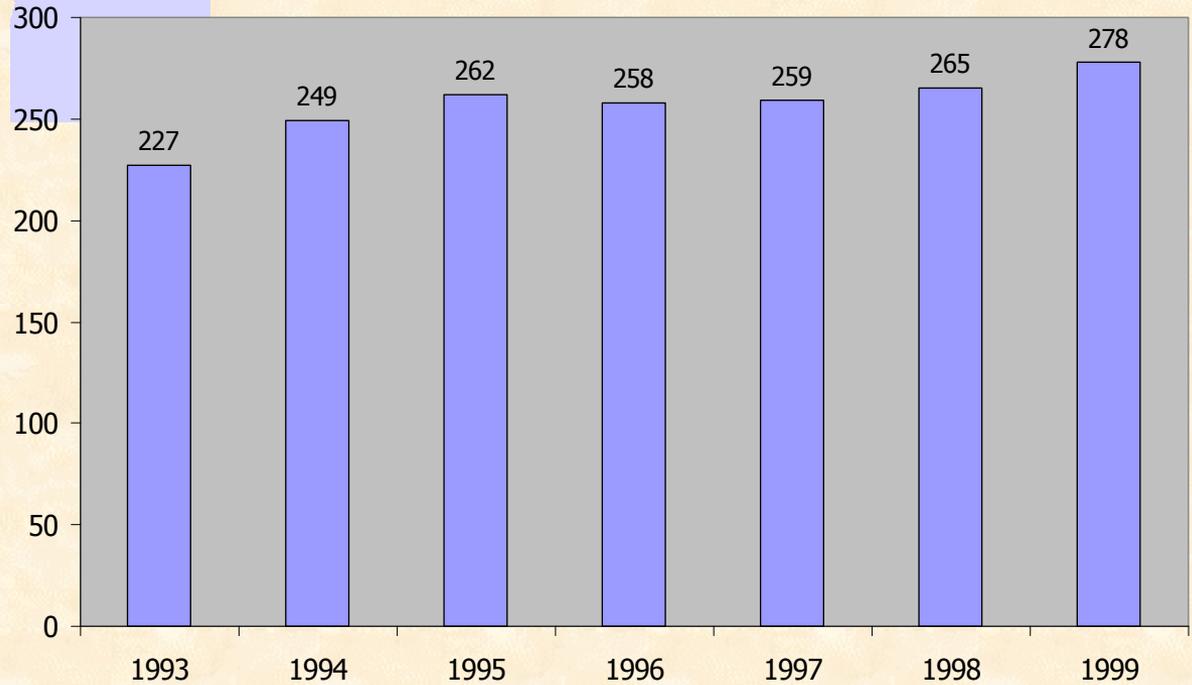
State Seat Belt Law

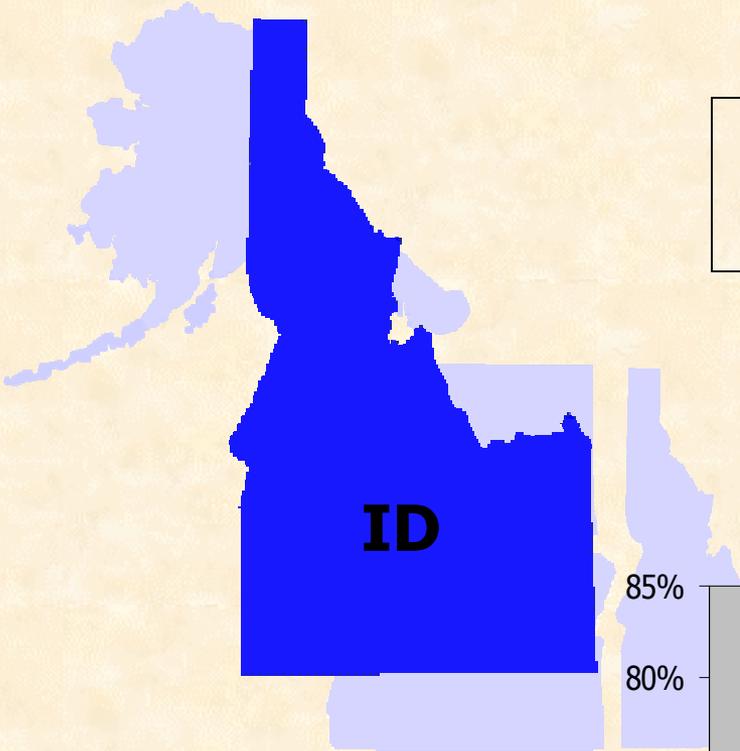
- Effective 07/01/1986
- Secondary Enforcement
- Seats:
 - Front Only
- Exempt Vehicles:
 - Over 8,000 lbs.
- \$5 Fine



IDAHO

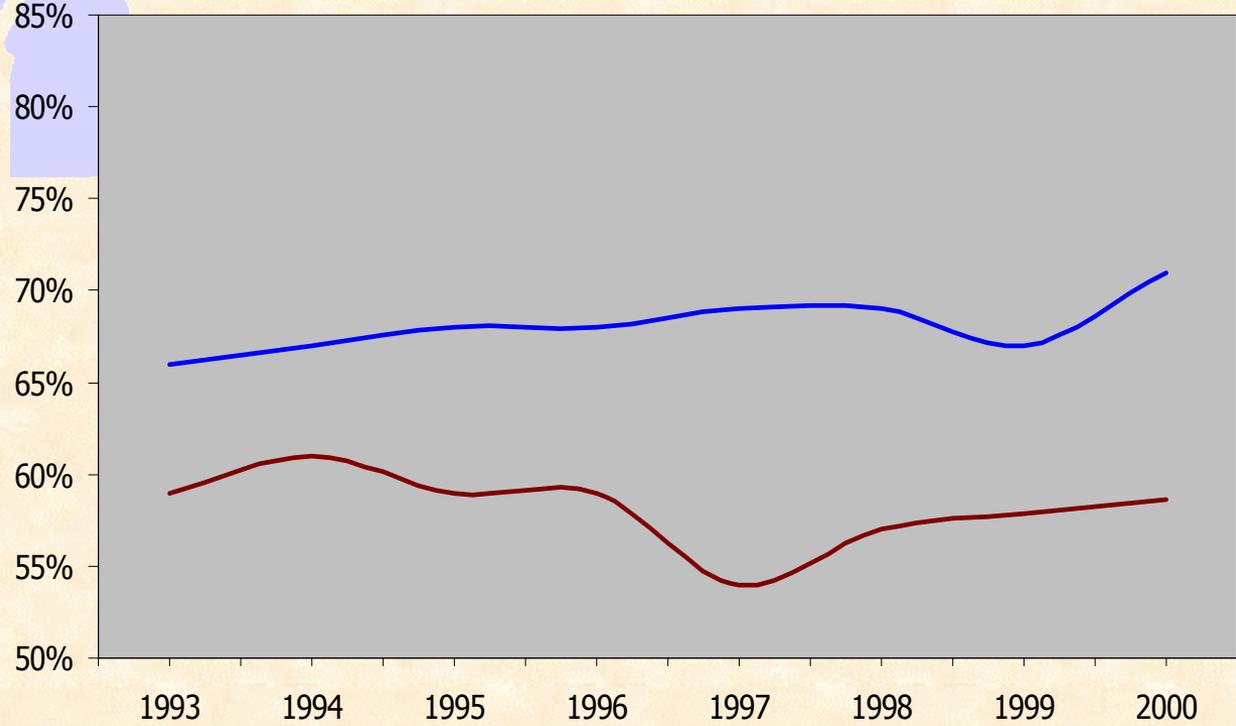
Idaho Traffic Fatalities



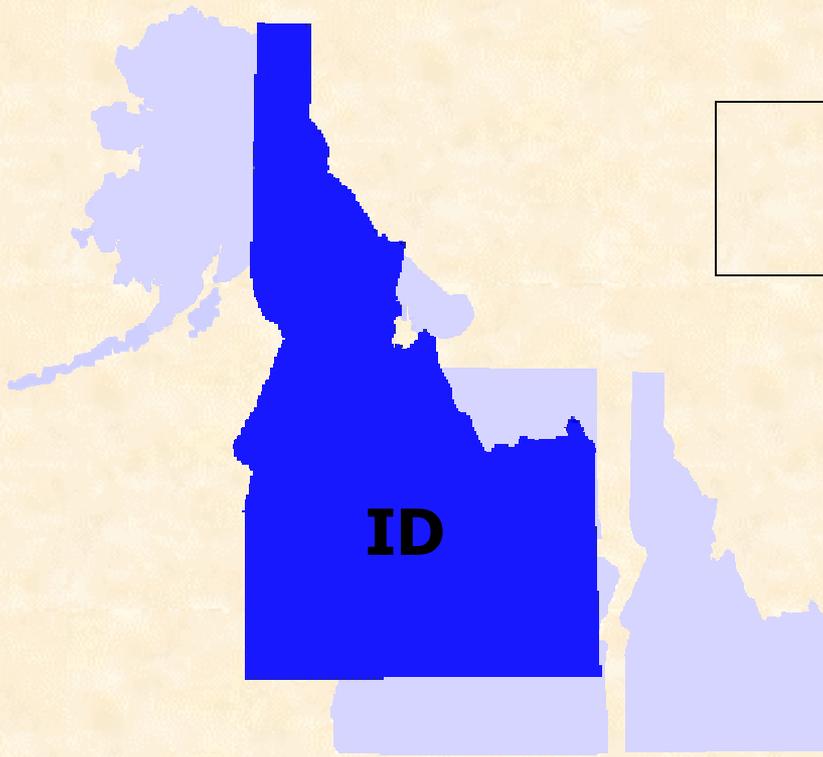


IDAHO

Idaho Restraint Use Rates



— State Use Rate — National Use Rate



IDAHO

Start Smart Buckle up! Summit

Law Enforcement Occupant
Protection Program/Saturation
Patrols

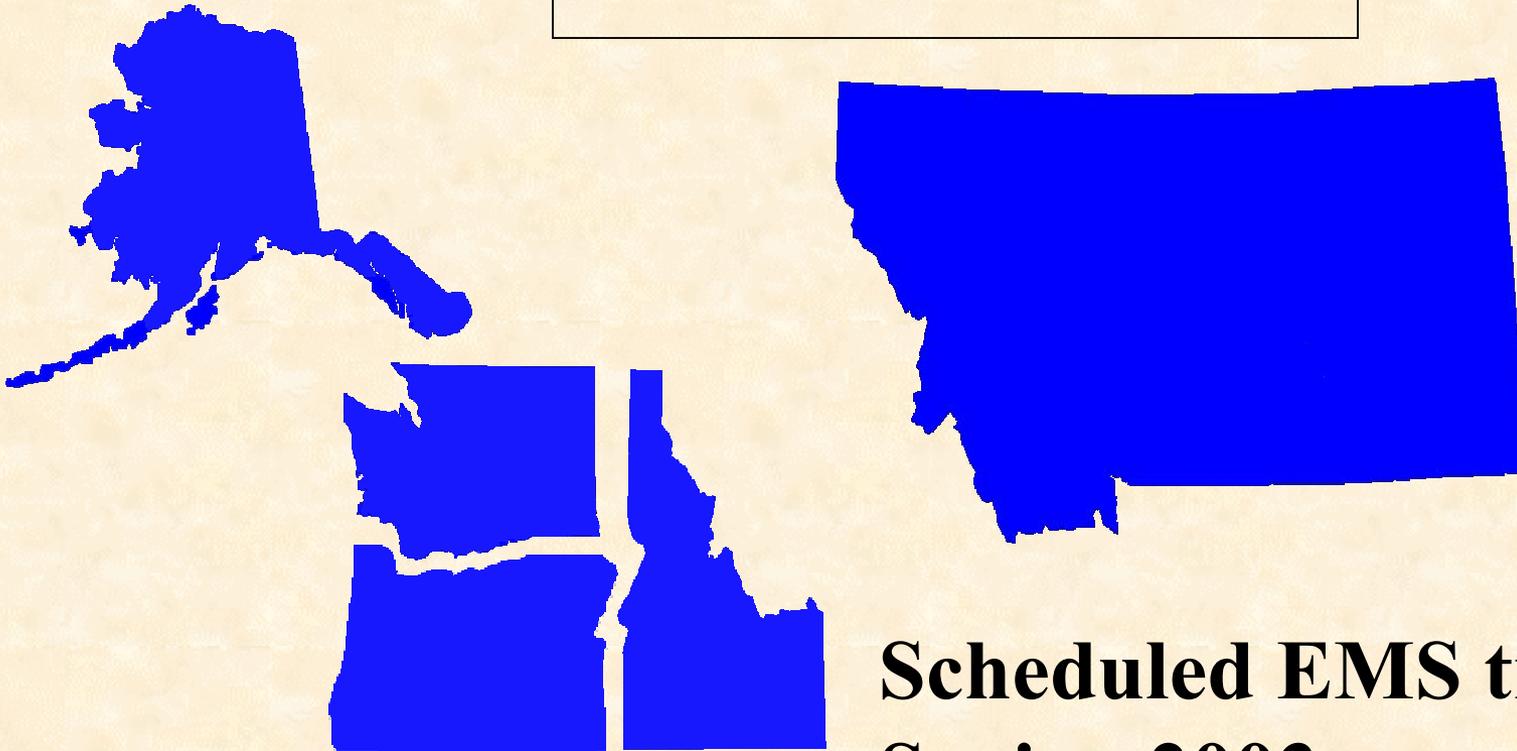
Also, includes Public Safety
groups, DOT, and media attention

February 2000 (1st ever)- Intro. to CIREN, Injury mechanisms,
case reviews, rotational forces - 2 hrs

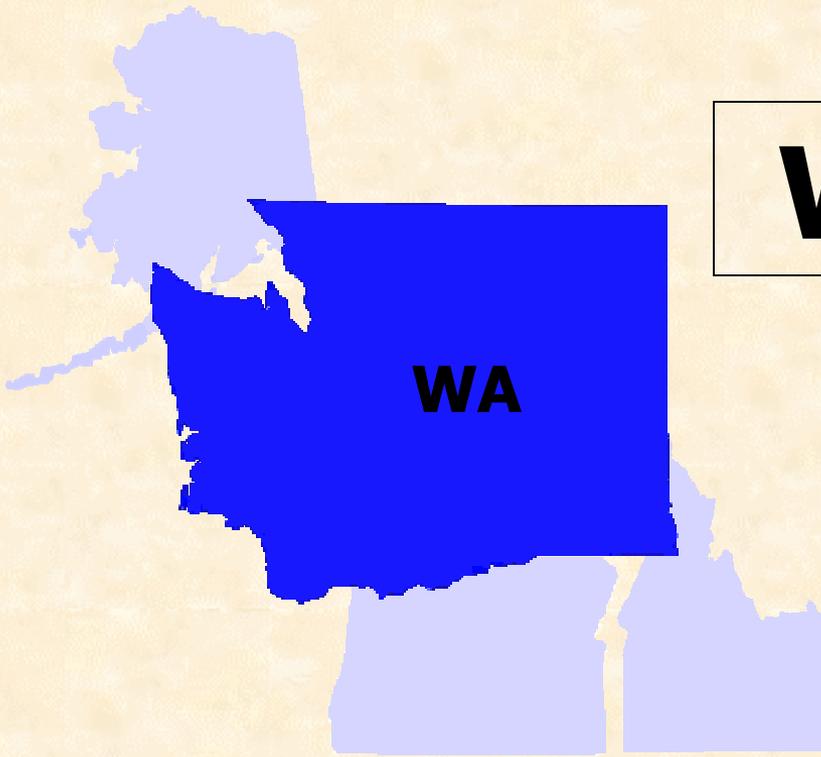
July 2000 - Keynote speaker / Kinematics for Dummies, AIS,
Unrestrained vs. Restrained. - 3 hrs

Sept 2001 - Key note Restraint Tech./Children & Crashes - 2 hrs.

Montana



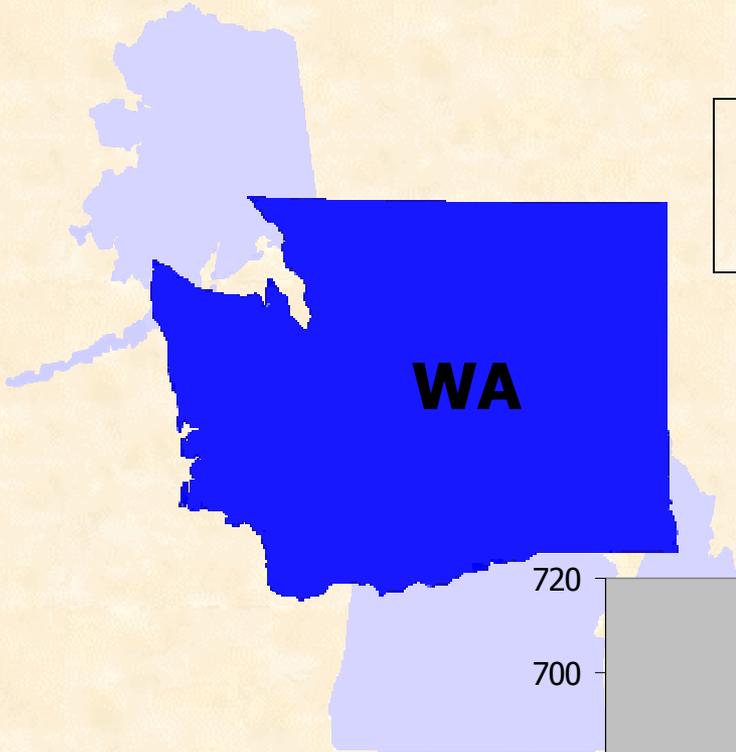
**Scheduled EMS training
Spring 2003**



WASHINGTON

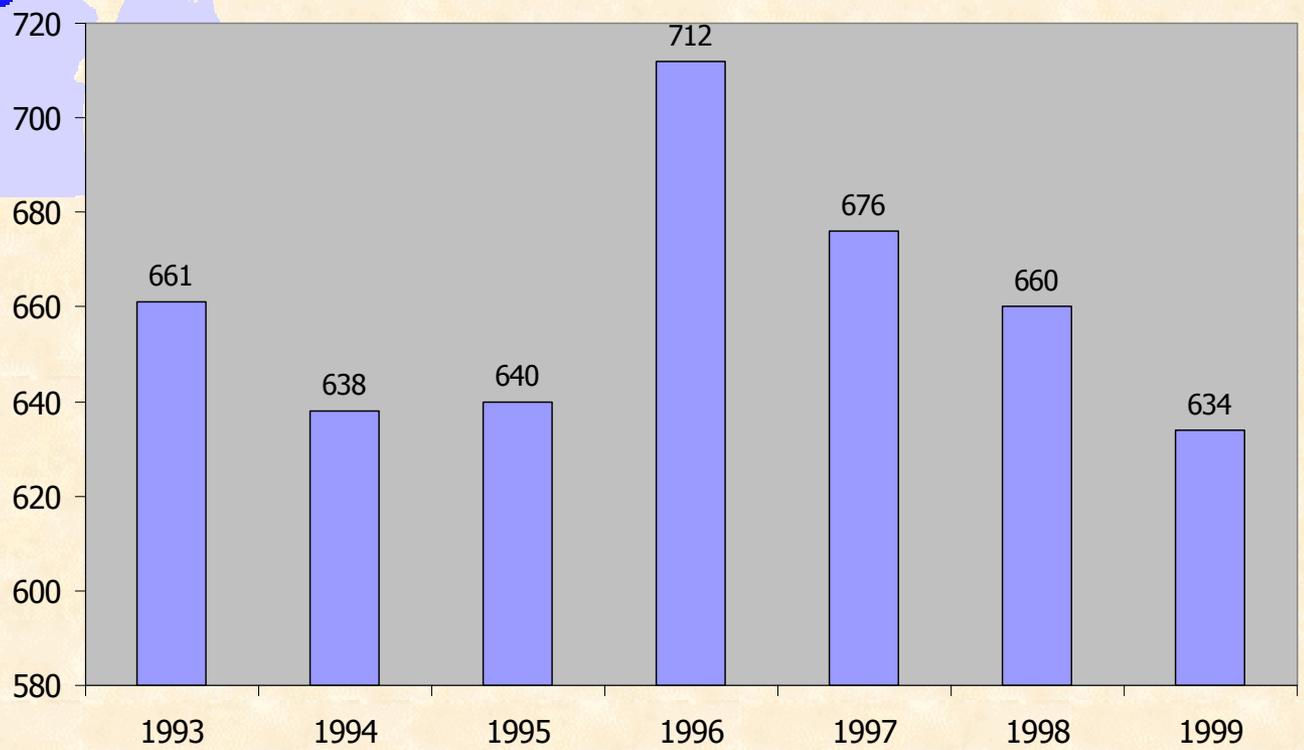
State Seat Belt Law

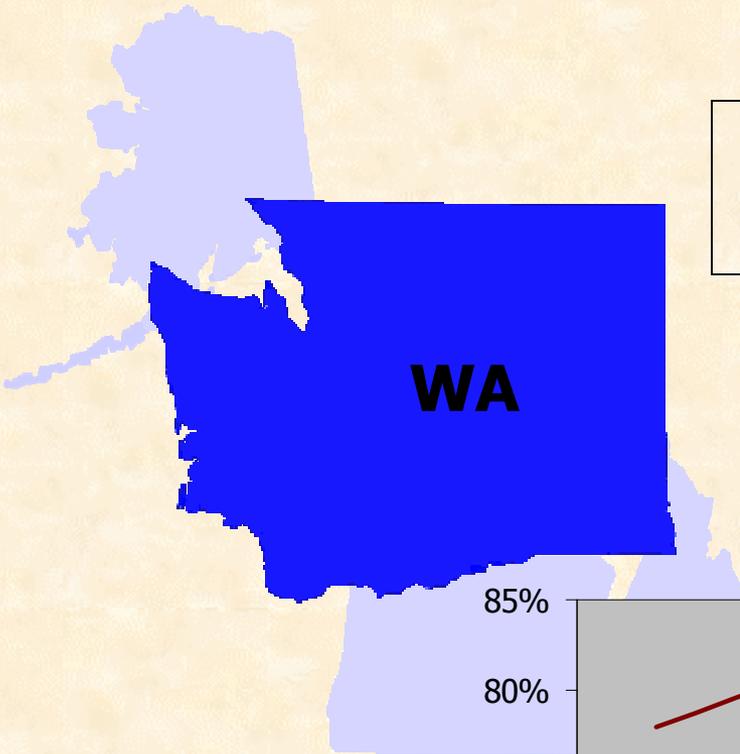
- Effective 06/13/02
7/1/2002 - Booster seats
- Primary Enforcement
- Seats:
 - All
- Exempt Vehicles:
 - Designed for more than 10 people
- \$86 Fine



WASHINGTON

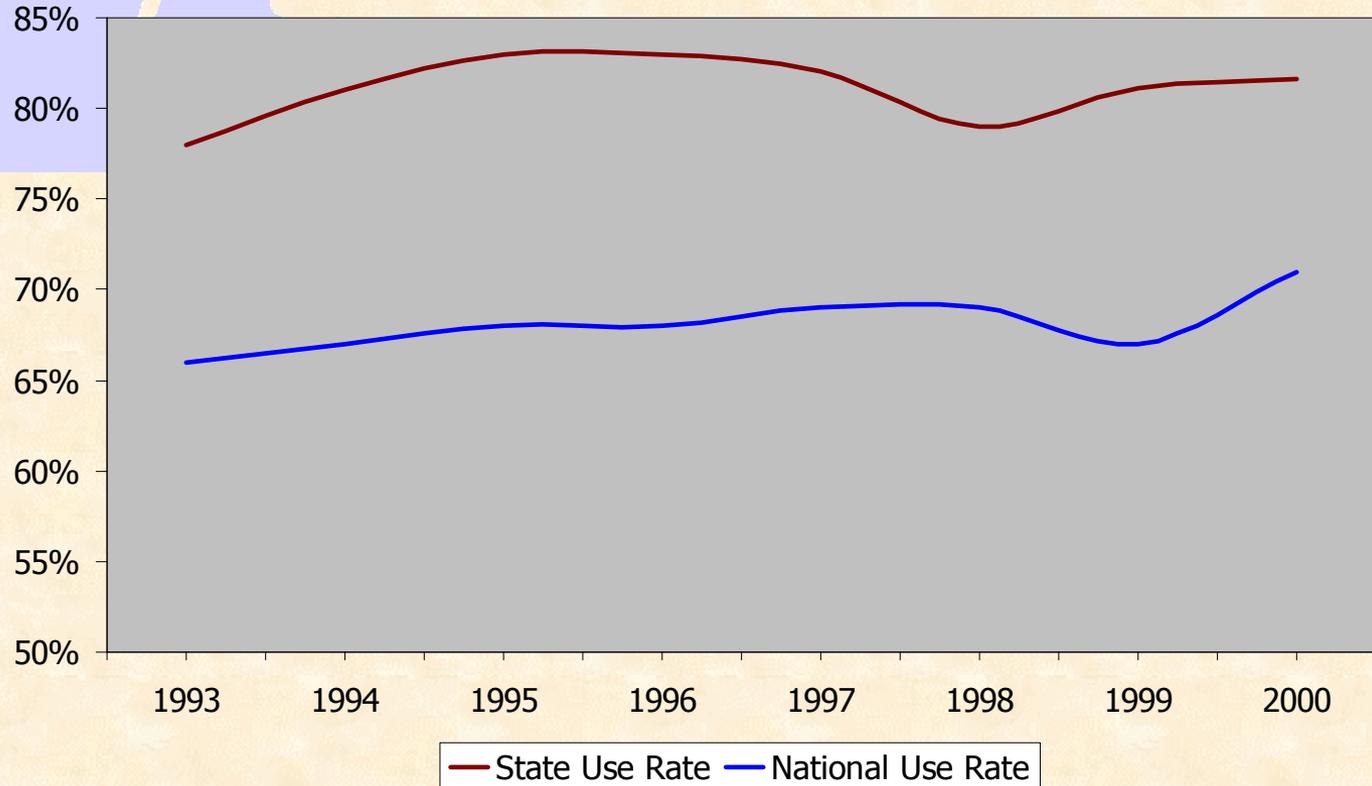
Washington Traffic Fatalities

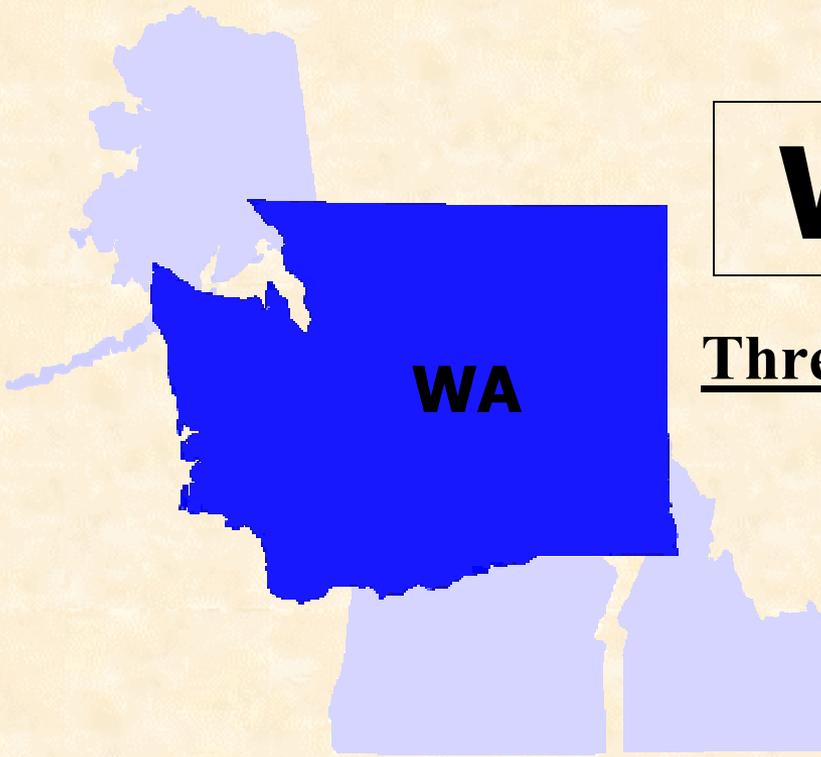




WASHINGTON

Washington Restraint Use Rates





WASHINGTON

Three Flags (B.C., WA, OR)

International Law Enforcement
Occupant Protection Program

Two officers from each jurisdiction in
the state attend. Saturation patrols,
PSA taping, guest speakers on
seatbelt topics

(150) July 1999 - CIREN Intro., case reviews, AIS,
Restrained vs. Not restrained

(150) July 2000 - CIREN and Pediatric injuries (Rivara)



WASHINGTON

CIREN Collision Investigation Training

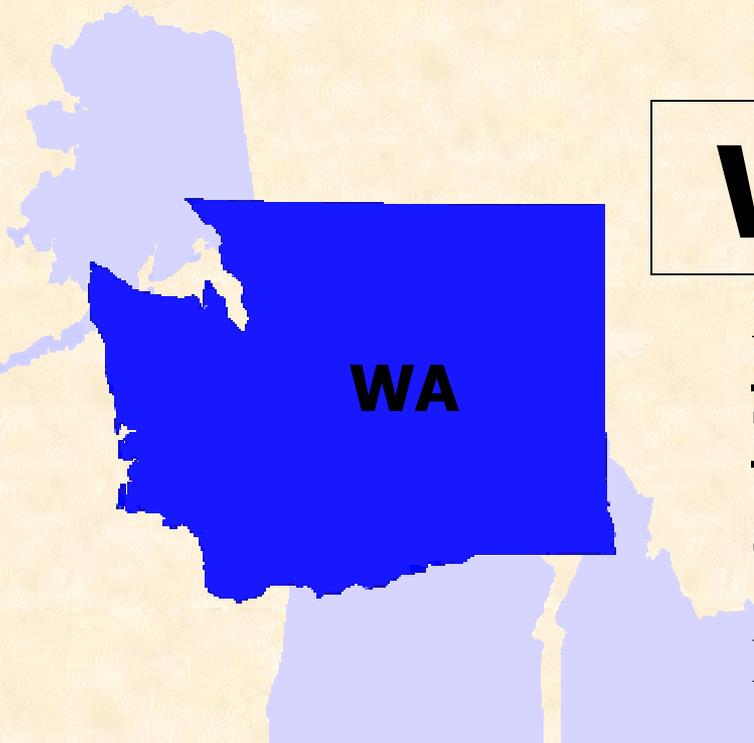
Sponsored by Washington Traffic Safety Commission, Criminal Justice Training Center and HIPRC/CIREN.

All Law Enforcement Detectives/Recons or Techs. statewide

June 2000 - Two day training sessions on kinematics and injury mechanisms

June 2001 - One full day training, focus on cases reviews. Did last year's training enhance your investigation?- near all stated yes.

June 2002 - WATAI group



WASHINGTON

Washington State Patrol Division Technical Training

Quarterly Tech training for troopers

Basic scene documentation/speed calc.

July 2000 - Single day training, CIREN intro, injury mechanisms, case review, kinematics

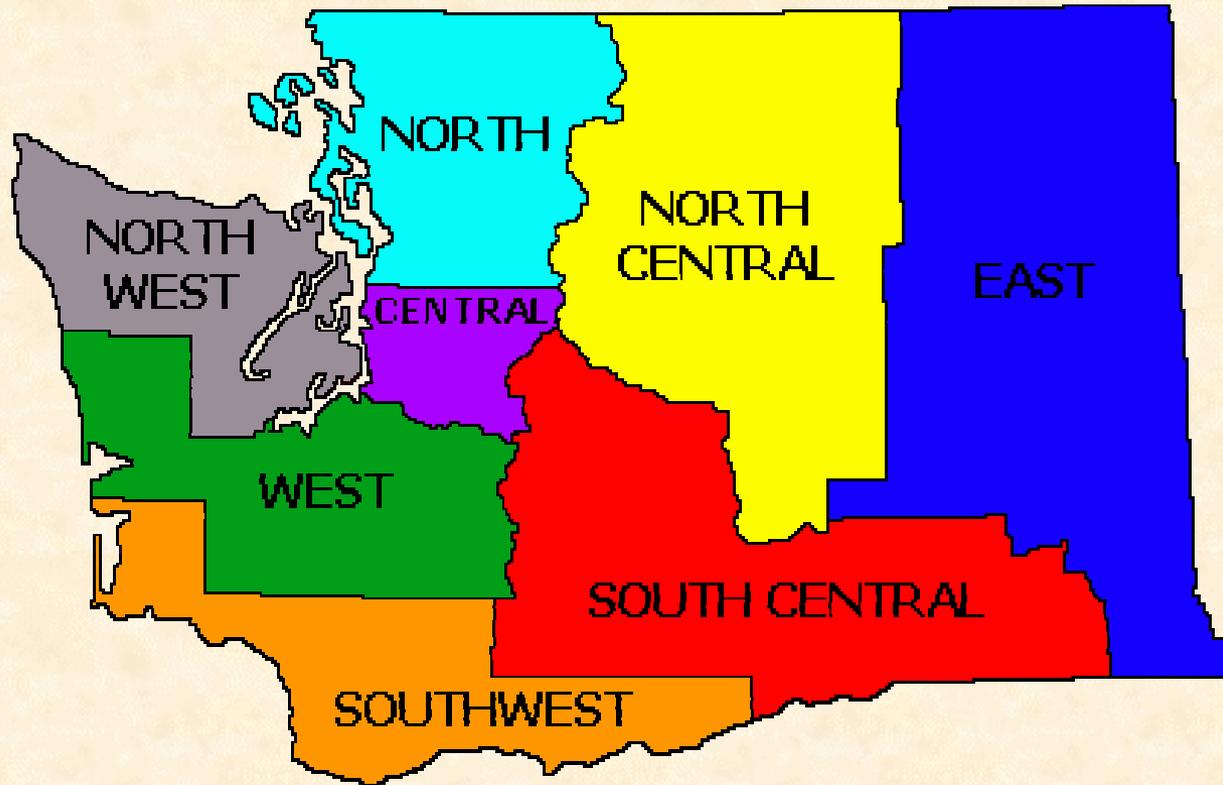
July 2001 - Repeat training conducted in June for state

October 2002 - planned eastern WA tech training

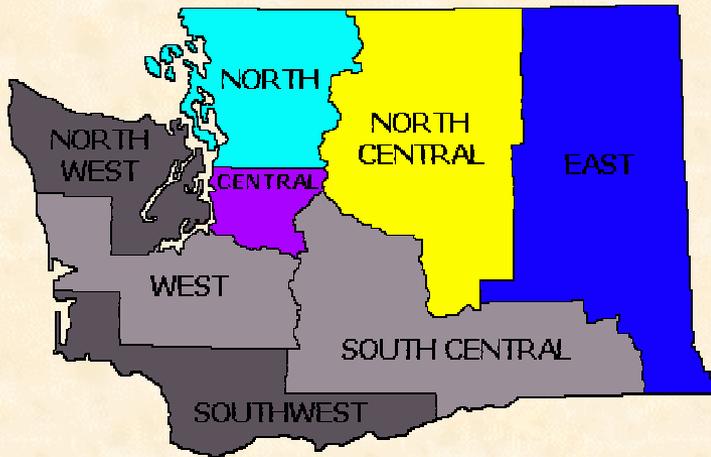
Washington State Driver Impaired Conference

December 2000 - Alcohol related cases, Crash Course in Kinematics

WASHINGTON State Regional EMS



WASHINGTON State Regional EMS



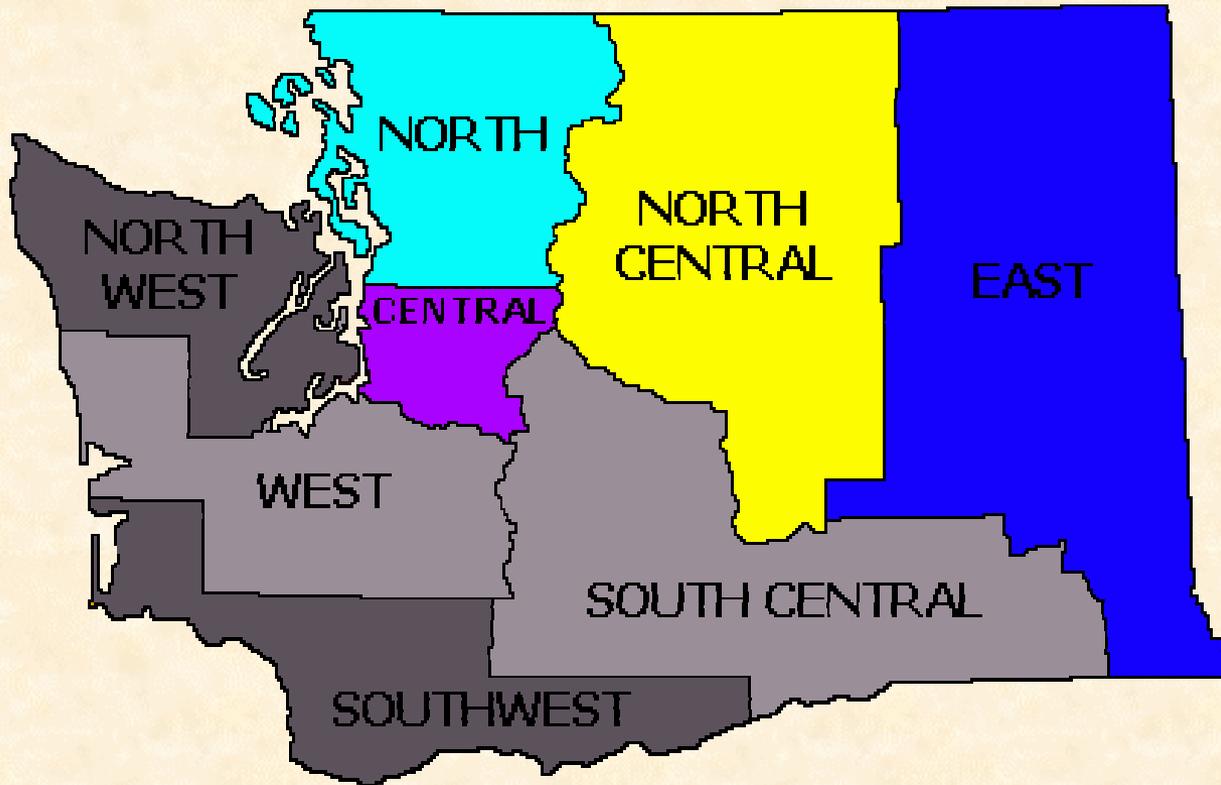
Annual Regional EMS conferences offered to meet CME credits. One and two day events with numerous topics and workshops

East (300) August 2000 Statewide EMS conference - 2 hrs.
CIREN, Kinematics for Dummies, AIS , Bad to Bone (96% E,G)

North Central (60) April 2000 - CIREN intro, Kinematics - 1.5hrs

North (100) April 2000 - Kinematics, restraint tech, Bad to Bone, rotational forces

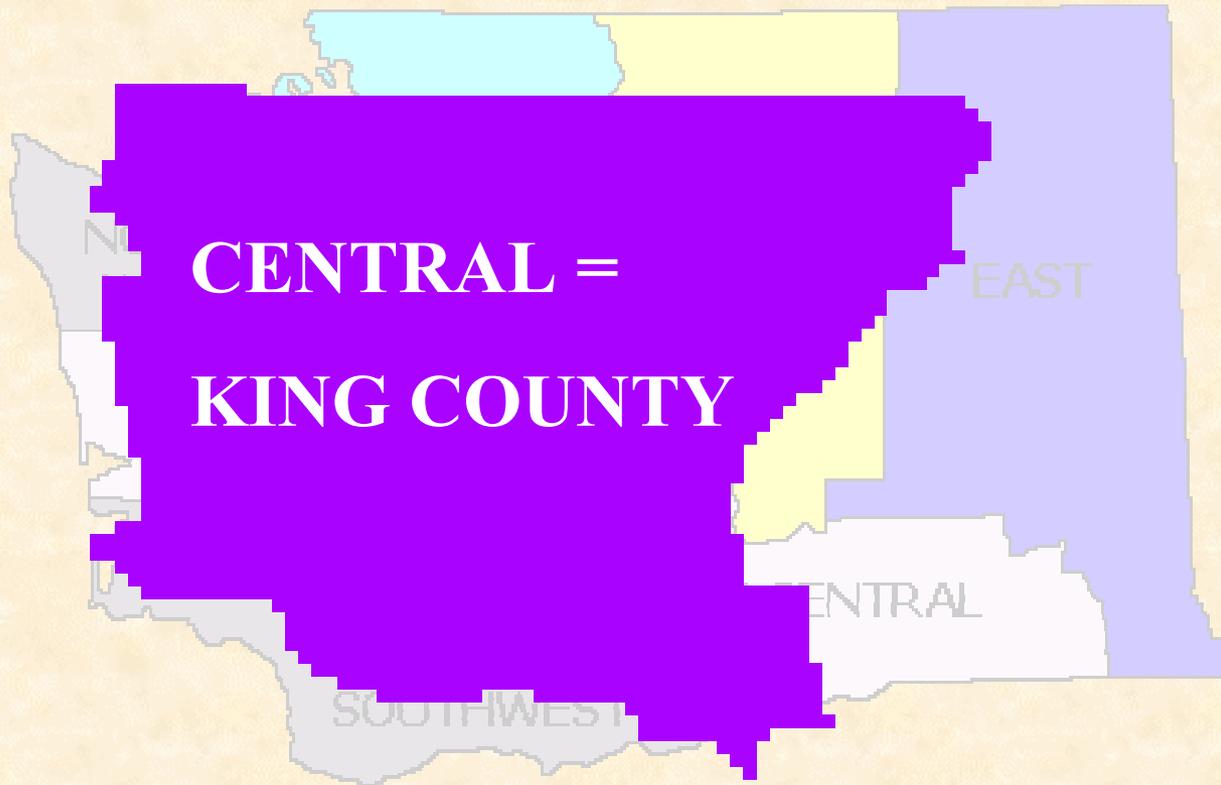
WASHINGTON State Regional EMS

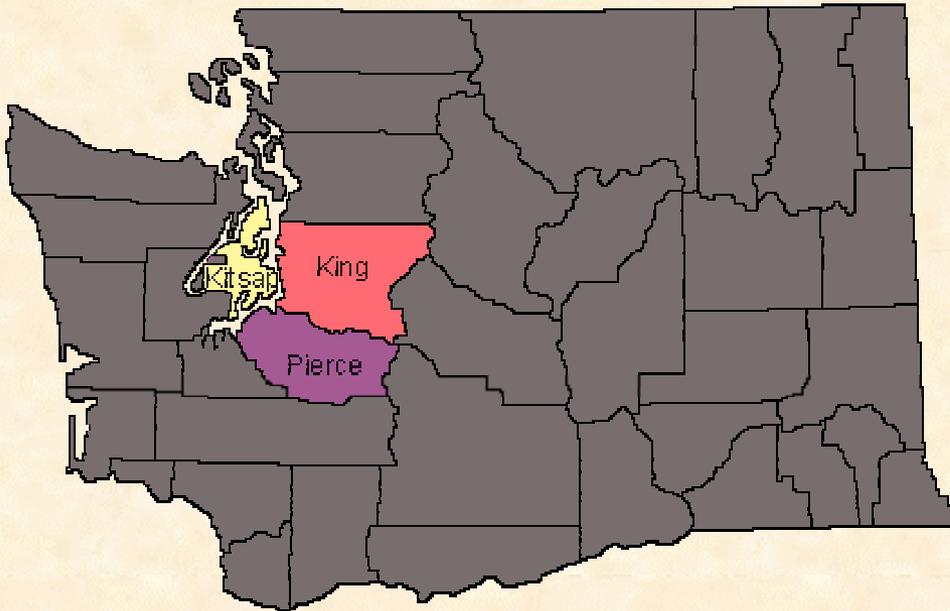


EMS training planned this September in Southwest/West regions

WASHINGTON

State Regional EMS





Rescue CME
B

King County / CENTRAL EMS Region

April 1998 - CIREN Intro, Case Reviews, Injury Mechanisms

January 2001 - CIREN, Crash Course in Kinematics, Bad to the Bone, Assessment

January

King Co

)1

King Co

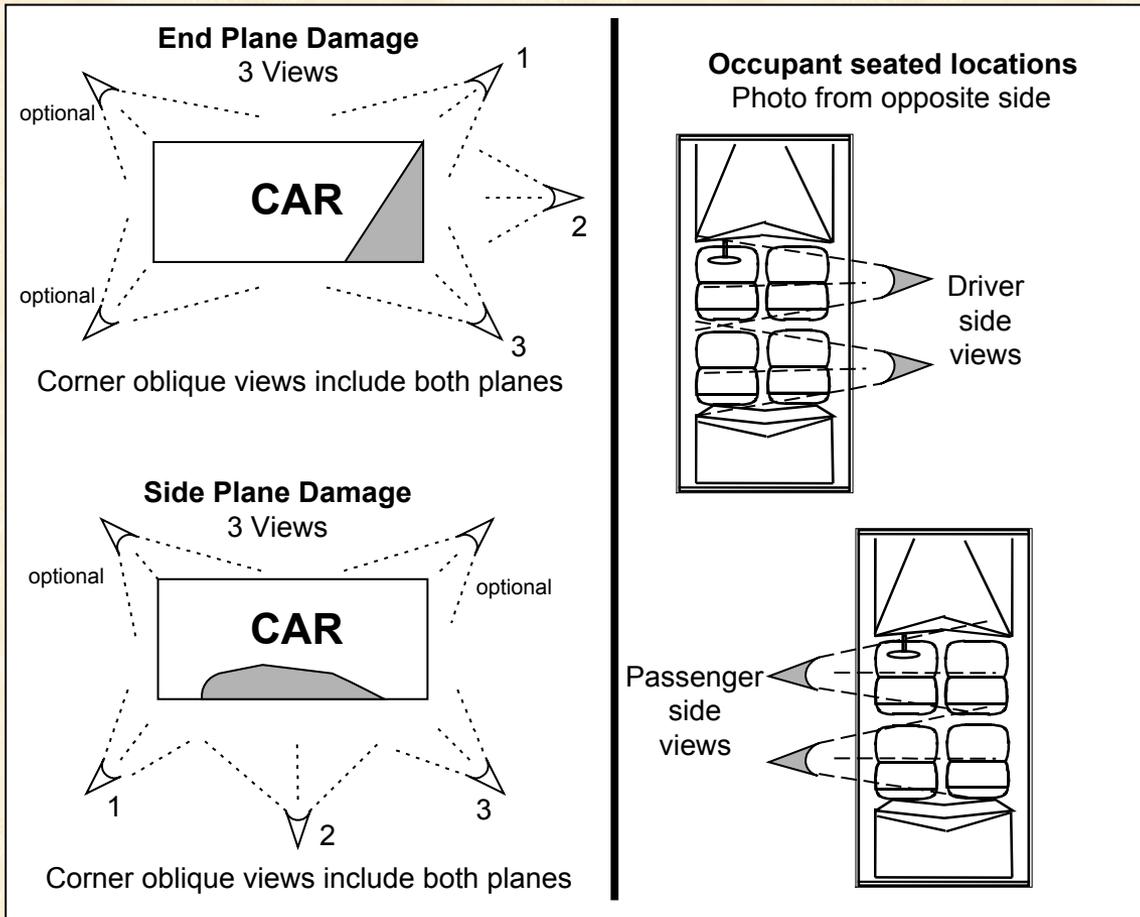
King County Medic One Digital Camera Project



- 22 Digital Cameras on all Medic One and MSO units
- Seattle Medics trained locally at HMC base
- County Medics develop a CD-ROM movie for training the rest of the county medics
- Training conducted for photography protocol and how to assess injury patterns based on INTRUSION = INJURY



King County Medic One Digital Camera Project





King County Medic One Digital Camera Project

Medic One units trained to assess injury severity and photography protocol at Jan. 2001 Regional Meeting

Floppy disks brought into HMC Resus #2 where a 20" TV monitor with another camera is located for slide show viewing.

June 2001 -Trauma Conference / Surgeons Weekly training conference

Trained all Nurses, ED staff, Trauma Surgeons

“How to assess the severity and injury patterns of MVC” Emphasis on INTRUSION = INJURY, side and frontal impacts



CIREN on the Web

Quarterly Presentations

Electronic Cases

Injury Mechanism Themes

Crash patterns

Microsoft Internet Explorer
Address: <http://www.nrd.nhtsa.dot.gov/departments/nrd-50/ciren/CIREN.html>

History: 3 Weeks Ago, 2 Weeks Ago, Last Week, Today

Third Annual CIREN Conference
October 28, 1999
San Diego Paradise Point Resort
San Diego, California

- [2000 Quarterly Presentations](#)
- [2001 Quarterly Presentations](#)
- [2002 Quarterly Presentations](#)

UPCOMING EVENT
The next Quarterly CIREN meeting will be held Thursday August 22, 2002
Harborview Injury Prevention and Research Center,
Research and Training Building Auditorium
9th and Alder Streets, Seattle, Washington
TOPIC: Each center will be presenting research on their center's speciality

If you would like to register online for the upcoming meeting, please click here: <http://www.hiprc.org>

Second Annual CIREN Conference
September 15, 1998
University of Michigan Medical Center
Ann Arbor, Michigan

First Annual CIREN Conference
October 20, 1997
University of Michigan Medical Center
Ann Arbor, Michigan

NEW CIREN Electronic Cases
The CIREN database consists of multiple discrete fields of data crashes including crash reconstruction and medical injury profiles. Pe highly sensitive medical information have been removed from the confidentiality. CIREN cases, extending back to 1996, for which cod completed, are available for public viewing. Additional cases are rele available

Microsoft Internet Explorer
Address: <http://www.nrd.nhtsa.dot.gov/departments/nrd-50/ciren/quarterly2002.html>

History: 3 Weeks Ago, 2 Weeks Ago, Last Week, Today

Eight Quarterly CIREN meeting - April 25, 2002. Topic: Head and Traumatic Brain Injuries

Presentations Included:

- "Simulated Injury Monitor (SIMON) - Dr. Rolf Eppinger, Director, National Transportation Biomechanics Research Center
- "Brain Injury: The Role of Directionality" - Dr. Brent Eastman and Steve Erwin - San Diego CIREN Center and Dr. Thomas Gennarelli, Froedtert Hospital and Medical College of Wisconsin CIREN Center
- "Risk of Head Injuries: Comparison of Actual Crashes and NCAP" - Dr. Raminder (Ram) Nirula and Robert Kaufman - Seattle CIREN Center
- "Characteristics and Outcomes of Traumatic Brain Injury among Motor Vehicle Occupants" - Maryland CIREN Team
- "Head Injuries: Neurosurgical and Automotive Perspectives" - Michigan CIREN Team
- "An Analysis of Pediatric Head Trauma" - Children's National Medical Center CIREN Team (**ZIP file: 52MB**)
- "Unbelted Occupant Kinematics and Head Injury in Frontal Crashes" - Ford Inova Fairfax Hospital CIREN Team (**ZIP file: 14.6MB**)
- "Patterns of Injury in Association with Mild, Moderate and Severe Brain Trauma as a Function of Motor Vehicle Crash Direction and Restraint Systems." - New Jersey CIREN Team
- "Head Injuries in Frontal Crashes" - Miami CIREN Team (**ZIP file: 114MB**)

Start | Inbox - Outlook Express | Microsoft PowerPoint - [SE... | CIREN quarterly pres... | 3:21 PM

Events

Event Number	Vehicle Number	Area Of Damage	Contacted	Class	Area Of Damage
1	1	Front	Vehicle#2	Subcompact/min (wheelbase < 254 cm)	Front

Vehicle 1995 DODGE NEON
4-door sedan, hardtop

CDC 11FYEW3
PDOF 320 degrees
Total Delta V 55 kmph/34 mph
Estimated Reconstruction Delta V coded

CDC [Intrusion](#) [Contacts](#)

Occupant

Age	Sex	Height	Weight	Role	Posture	Position	Maximum AIS	Restraint Use
28 years	Female - pregnant-3rd trimester (7th-9th month)	145 cms/ 4ft. 9 in.	68 kgs/ 150 lbs	Driver	Normal Posture	Front Row Left	3	Manual Belts Used

ISS 22