

ATV and Side-by-Side Safety for Workers and Families in Agriculture



Charles Jennissen, MD

Clinical Professor

Departments of Emergency Medicine and Pediatrics

University of Iowa Carver College of Medicine



All-Terrain Vehicles (ATVs)



Utility ATV



Sports ATV

Utility Task Vehicles (UTVs)



Recreational Off-Highway Vehicles (ROVs)



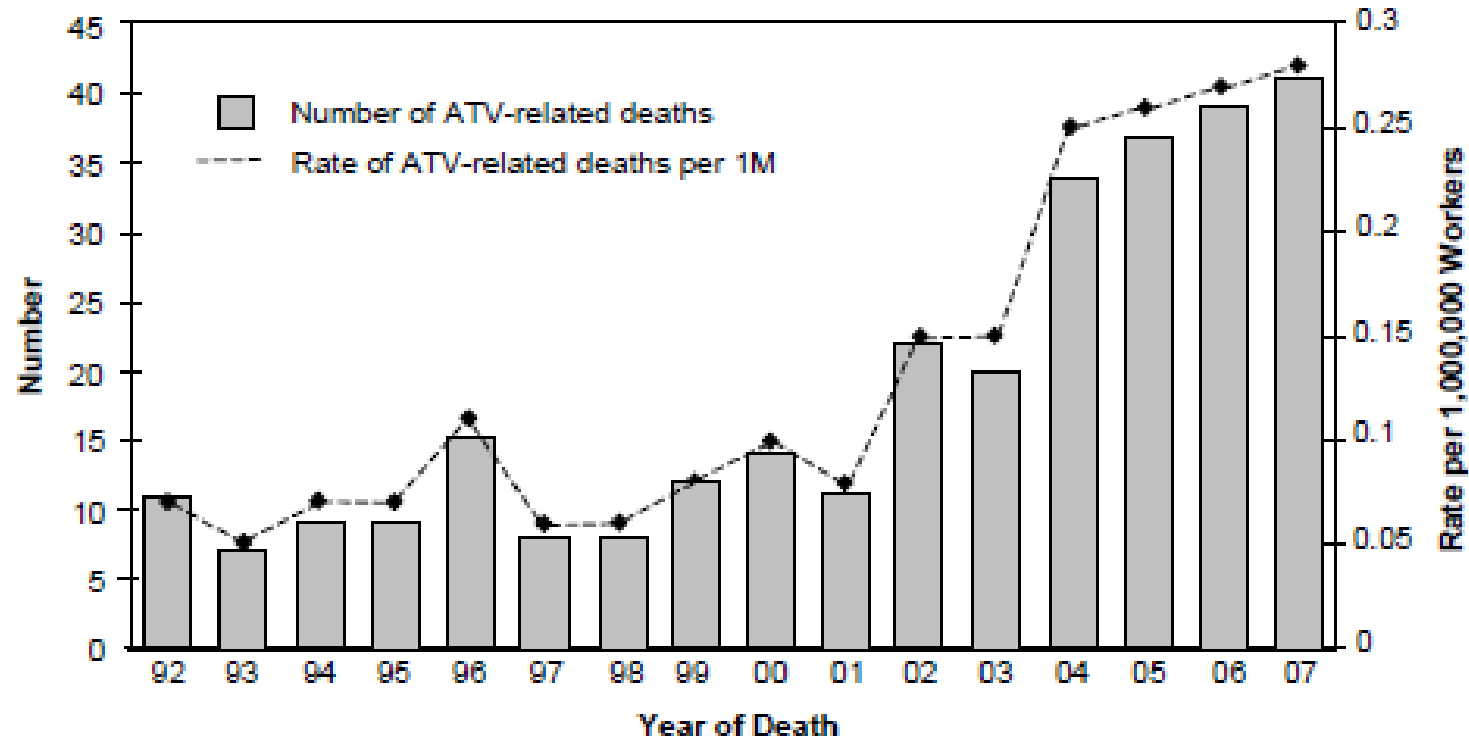
Sport ROV



Multipurpose ROV

Bureau of Labor Statistics' annual Census of Fatal Occupational Injuries 1992-2007

– 297 work-related ATV deaths (>18 years of age)



61% were in the agriculture production industry

Fatality rate per million workers 143 X greater than all other industries



Article

ATV-Related Workers' Compensation Claims in Montana, 2007–2012

Elise A. Lagerstrom ^{1,†,*}, David P. Gilkey ^{1,†}, David J. Elenbaas ^{2,†} and John C. Rosecrance ^{1,†}

¹ Department of Environmental and Radiological Health Sciences, Colorado State University, 1816 Camus Delivery, Ft. Collins, CO 80523-1681, USA;

E-Mails: david.gilkey@colostate.edu (D.P.G.); john.rosecrance@colostate.edu (J.C.R.)

² Montana Employment Relations Division, P.O. Box 8011, Helena, MT 59604-8011, USA;

E-Mail: daelenbaas@mt.gov


† These authors contributed equally to this work.

* Author to whom correspondence should be addressed; E-Mail: lagerste@colostate.edu;
Tel.: +1-503-867-4375.

Academic Editor: Raphael Grzebieta

Received: 31 August 2015 / Accepted: 9 November 2015 / Published: 13 November 2015

Table 2. Claims by industry group.

 Industry	Number of Claims	Percent of Total Claims
Agriculture	126	58.6%
Public Administration	29	13.5%
Construction	15	6.8%
Professional and Technical Services	12	5.6%
Administrative and Support Services	9	4.2%
Utilities	6	2.8%
Arts, Entertainment, and Recreation	4	1.9%
Education Services	3	1.4%
Manufacturing	2	0.9%
Mining	2	0.9%
Retail Trade	2	0.9%
Not Classified	2	0.9%
Accommodation and Food Services	1	0.5%
Finance and Insurance	1	0.5%
Other Services	1	0.5%
Total	215	100%

Cost of Work-Related ATV Deaths

- Utilized Bureau of Labor Statistics' annual Census of Fatal Occupational Injuries
 - 129 work-related ATV deaths from 2003-2006
 - Mean cost of \$803,100 per death.
 - 65% were workers in agriculture with a cost of \$62.3 million

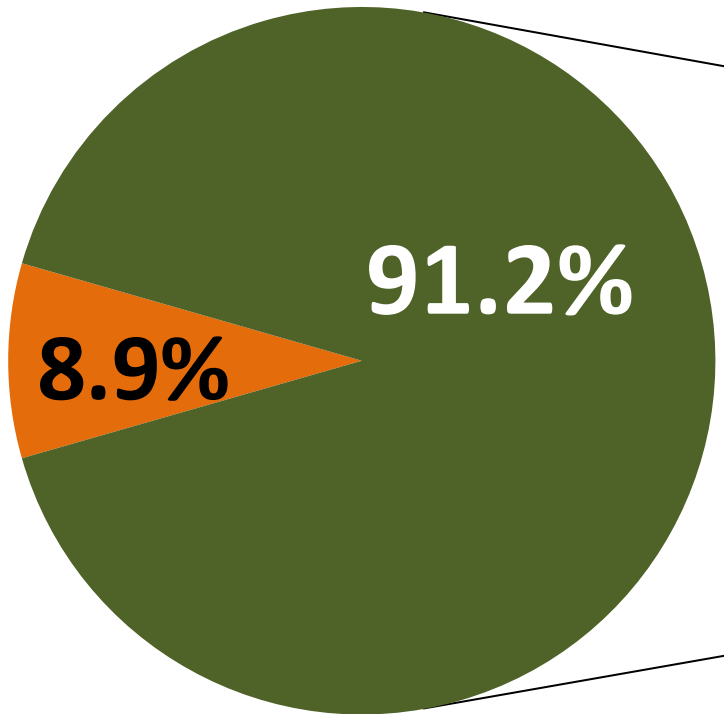
Circle the Earth ~25 ½ Times!



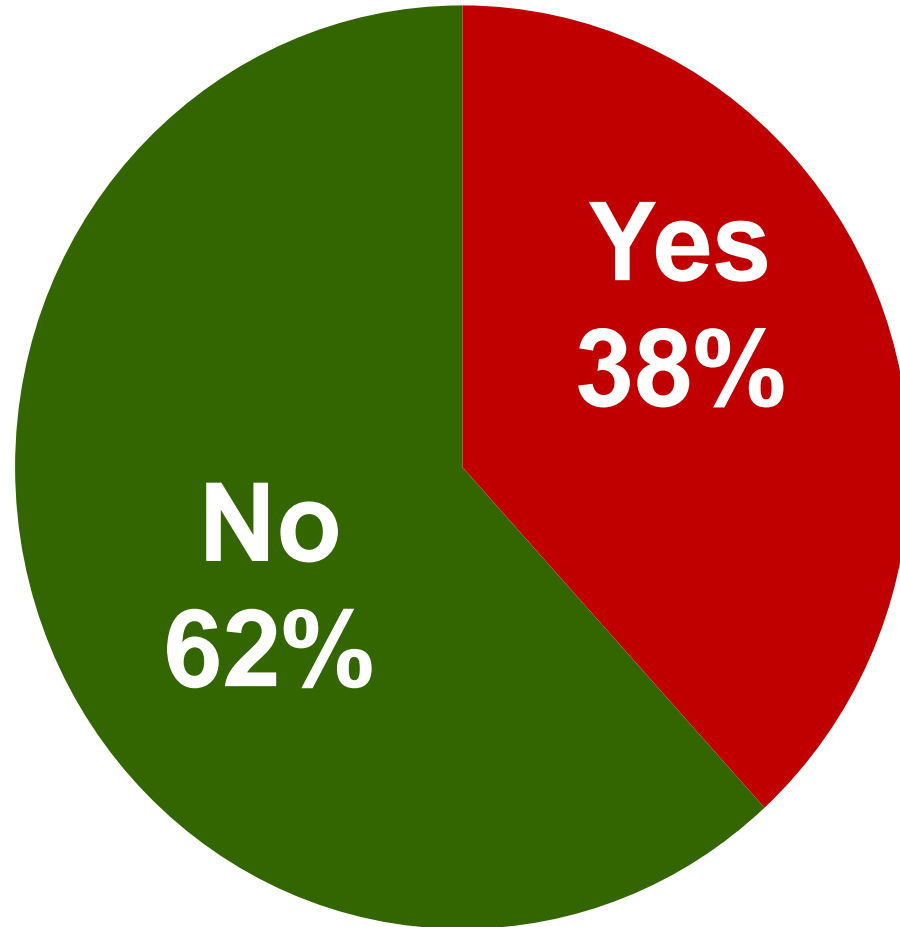
ATV Exposure

Surveyed 635 visitors at the 2012 and 2013 Farm Progress show, the nation's largest outdoor farm show.

Ever ride an ATV?



History of an ATV Crash



Odds of Having Been in an ATV Crash

Unsafe Riding Practices

Neither practice	1.0 (ref)	
Riding with passengers	2.61	0.84-8.09
Riding on the road	4.83	1.23-18.93
Both practices	8.02	2.93-21.96



ATV Exposure

Surveyed 1573 attendees of the 2017 and 2018 Iowa FFA Leadership Conferences.



Family ever owned an ATV?

78% YES

89% YES - Farm

Ever ridden an ATV?

95% YES

98% YES - Farm



**Ave Age First Rode as
Passenger**

**Ave Age First Rode as
Driver**

On Farm

5.3 years

8.3 years

**In Country,
Not Farm**

6.5 years

9.1 years

Town

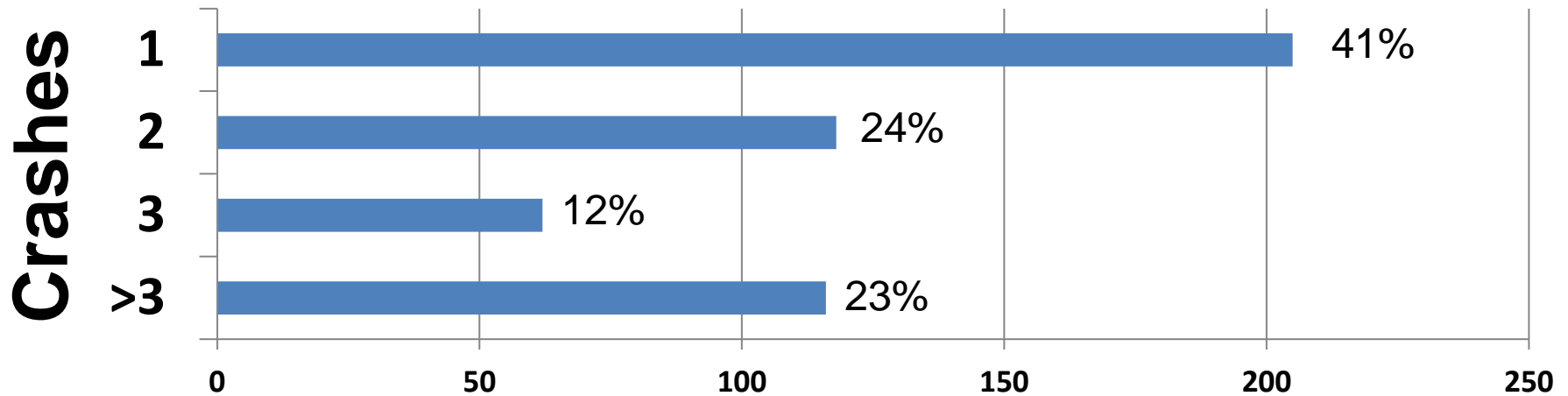
6.8 years

9.6 years



Ever in an ATV crash (as passenger or driver)?

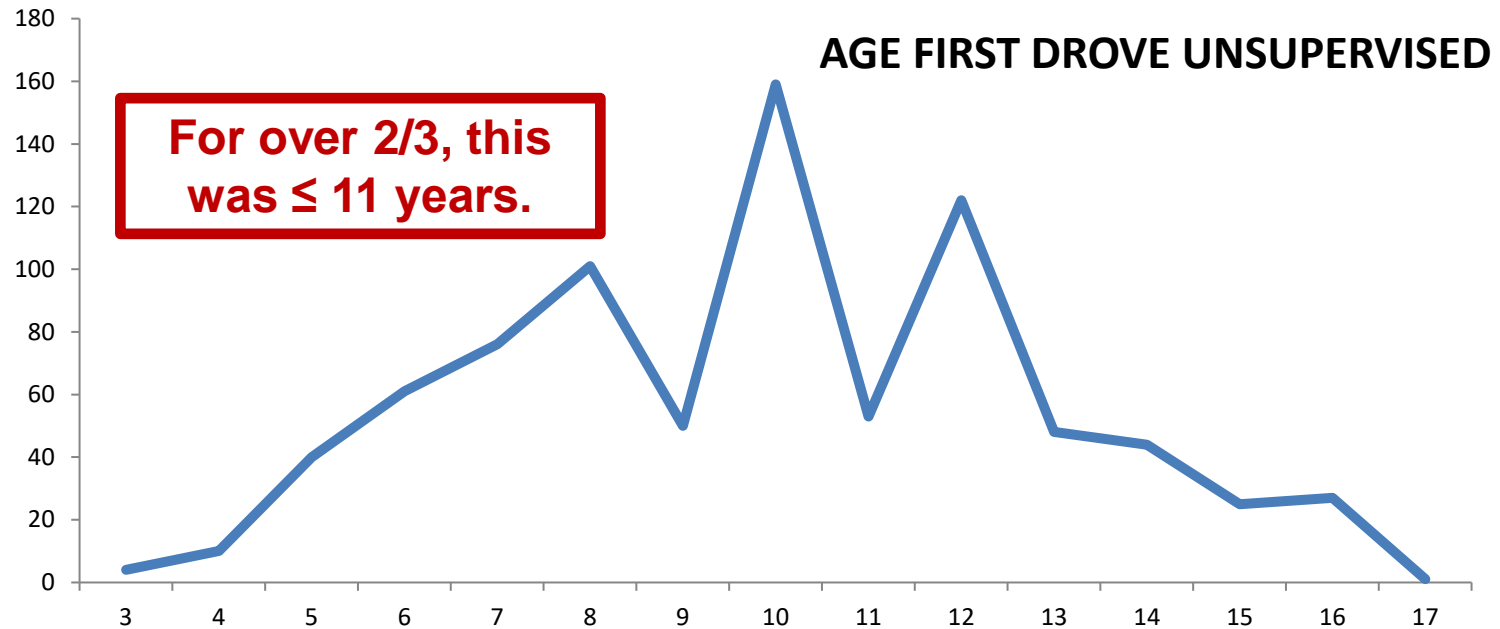
35% YES



Those on farms had a higher percentage with ≥ 3 crashes (40%).

$p=0.025$

Supervision (2018, n=971)



- 46% stated that the ages they first drove and first drove unsupervised were the same age.
- 91% of the respondents' first ATV crash occurred after they were driving unsupervised.
- FFA members from farms drove ATVs unsupervised at younger ages than those that lived elsewhere, $p=0.0002$.

ATV-Related Injury

Of those with an ATV crash, did you **15% YES** ever require getting medical attention?



Since 2004, more kids <16 years have been killed each year from ATVs than from bicycle crashes.

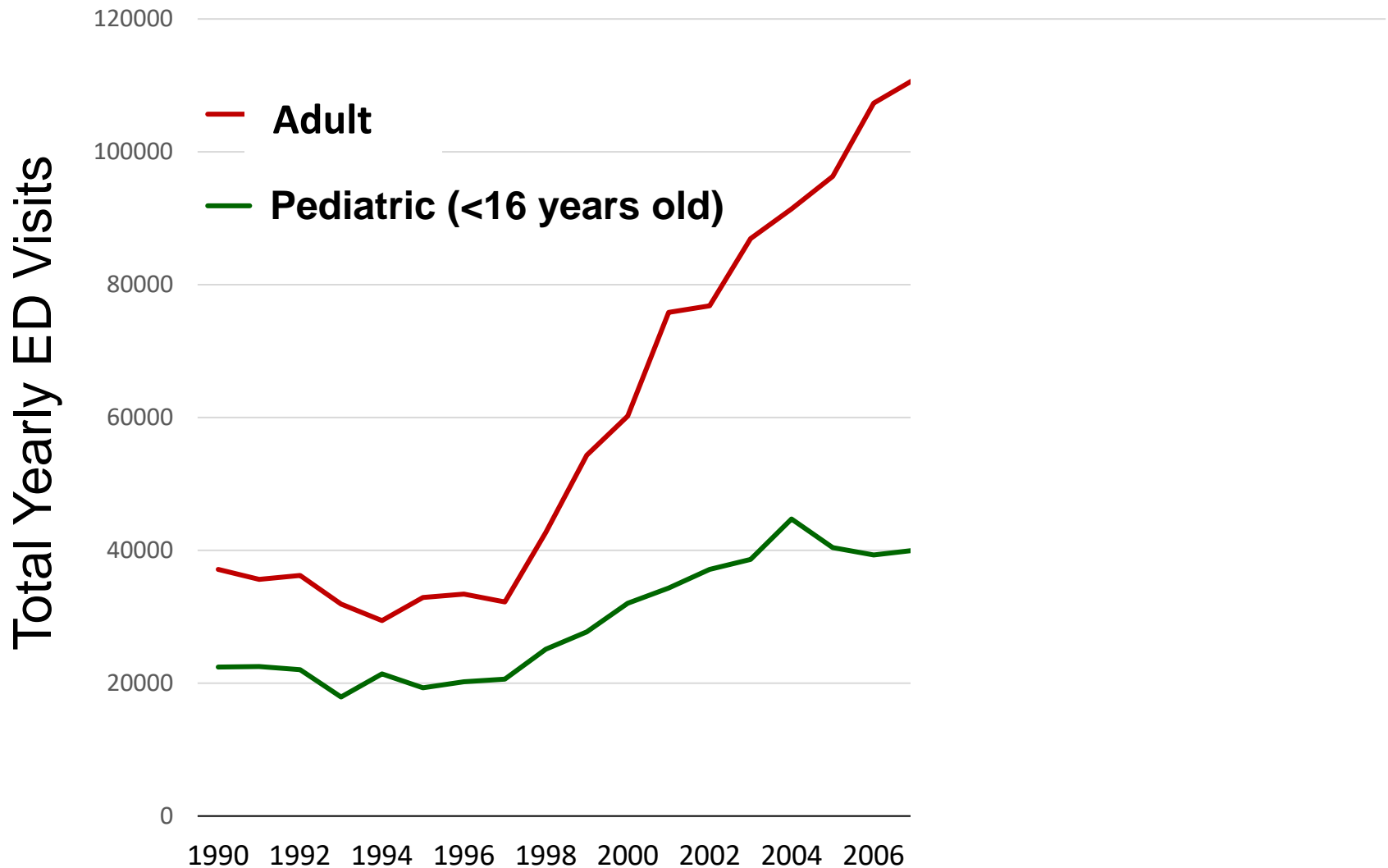


Youth ATV operators have a 12X greater risk of injury compared to adults.



But...

The rate of adult ATV-related injuries and deaths far surpassed that of children in the 2000's.



First 4-wheeler: 1979 Suzuki LT-125

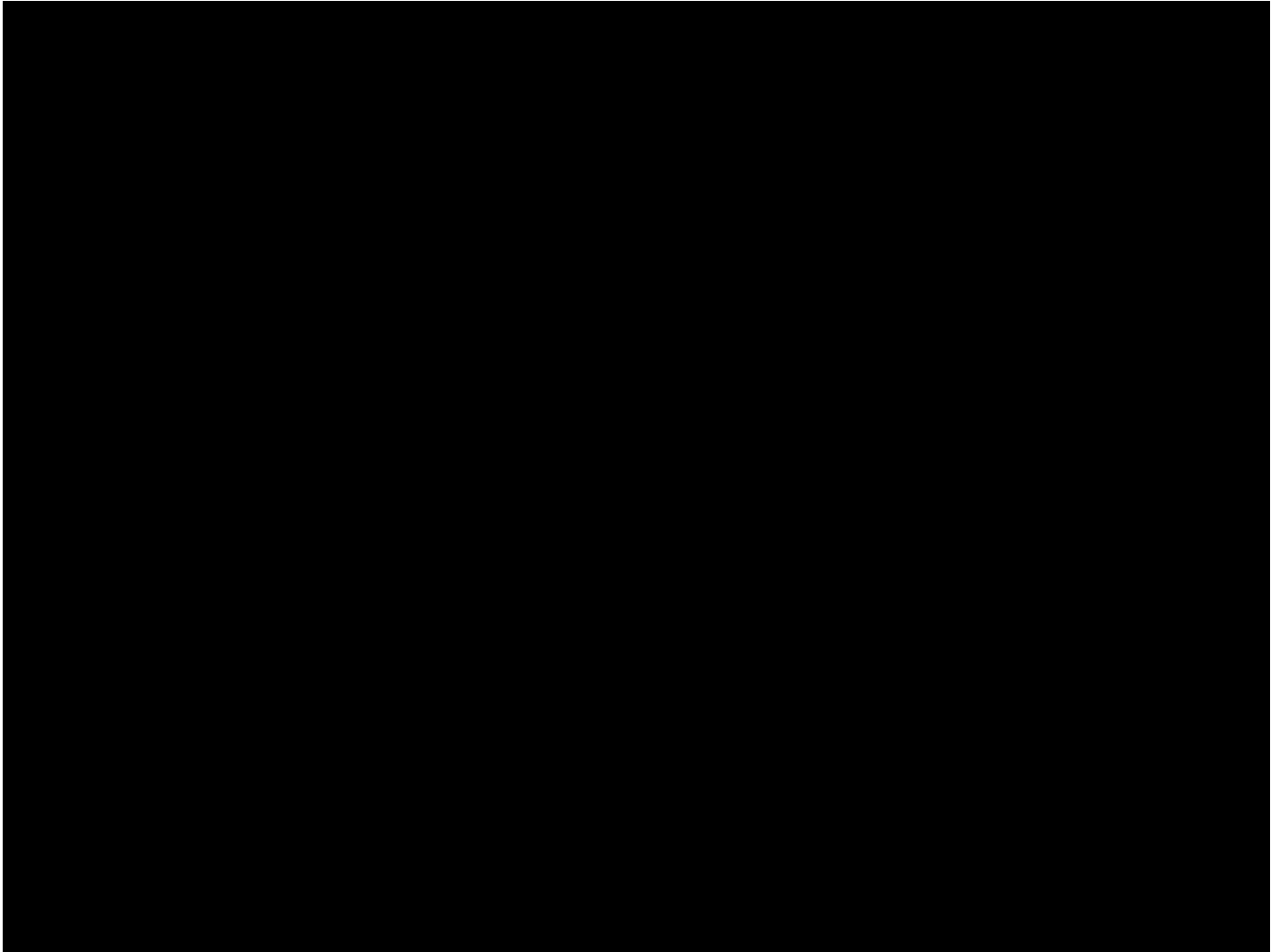


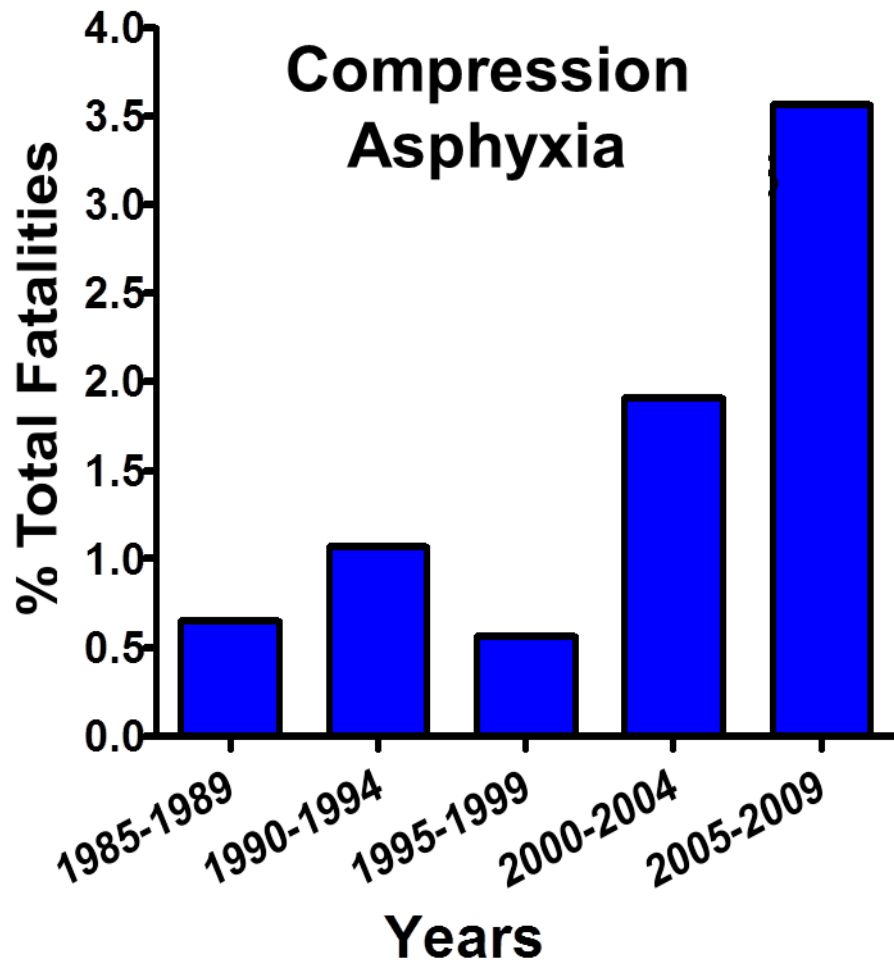


Greater vehicle size and speed result in greater crash forces.



Greater vehicle size increases likelihood of being trapped under the vehicle during a rollover.





The majority of ATV deaths and injuries are due to a non-collision event (rollover or ejection/fall from the vehicle).



8/10 agricultural workers died in non-highway event (most from rollovers)

Bureau of Labor Statistics' annual Census of Fatal Occupational Injuries 1992-2007



Crush Protection Devices (CPDs)



Quadbar ®



ATV Lifeguard ®



Prof. Raphael Grzebieta, New South Wales

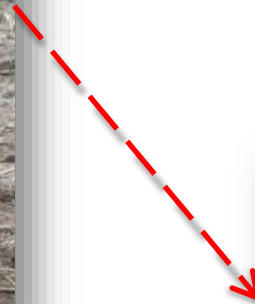
**American Academy of Pediatrics recommends
no children under 16 drive an ATV.**

American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

How do we get from here



...to there?



We decided to target 12-15 year olds and developed a school-based curriculum.



Safety Tips for ATV Riders (STARs)

- 1 Always wear your helmet
- 2 One person at a time
- 3 Ride the right size machine
- 4 Always wear your protective gear
- 5 Never ride on the road
- 6 Take a safety course
- 7 Tell someone where you are going
- 8 Respect private property
- 9 Never use alcohol or drugs
- 10 Always obey the rules



One person at a time.



Most traditional ATVs are designed and recommended for use by one person only



ATVs require active riding.



Passengers complicate and even prevent these weight shifting needs.



rockyroostmx.com



spokesman.com

Passengers or operators with passengers account for 46% of all U.S. pediatric ATV-related fatalities.



Of those Iowa students 11-16 yrs who had been on an ATV, over 90% stated that had ridden with or as a passenger.



Passengers increase the center of gravity height and shift center of gravity backwards.



Backward rollovers were 2.5 times more likely to have passengers as other rollovers



Falls/ejections to the rear were over 5 times more likely to have passengers on the ATV than other types of ejections.



ATV victims with falls/ejections to the rear had the highest overall mean head injury scores.



Never ride on the road.



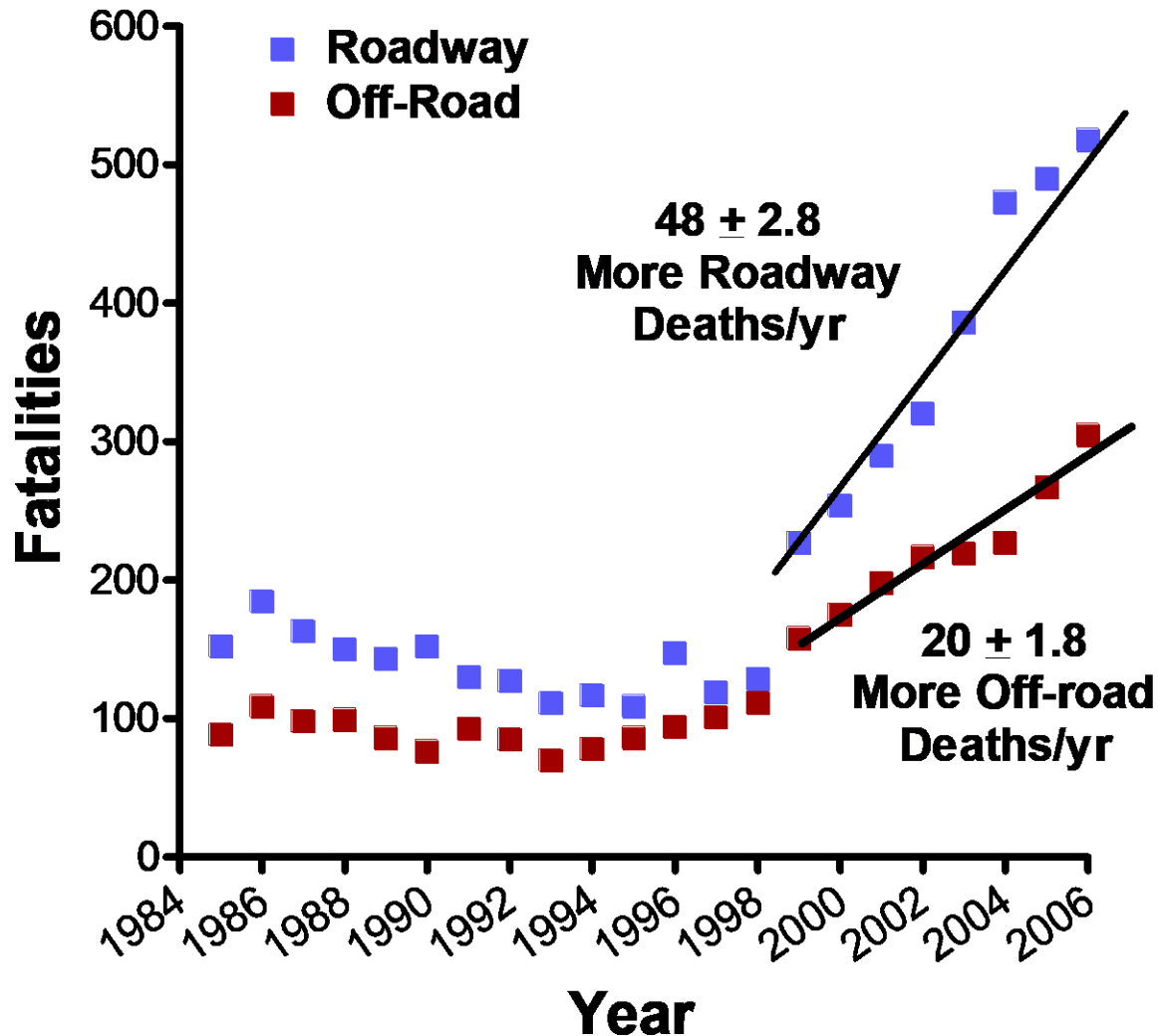
Roadway Crashes

- **Over 60% of all ATV fatalities are on roadways.**

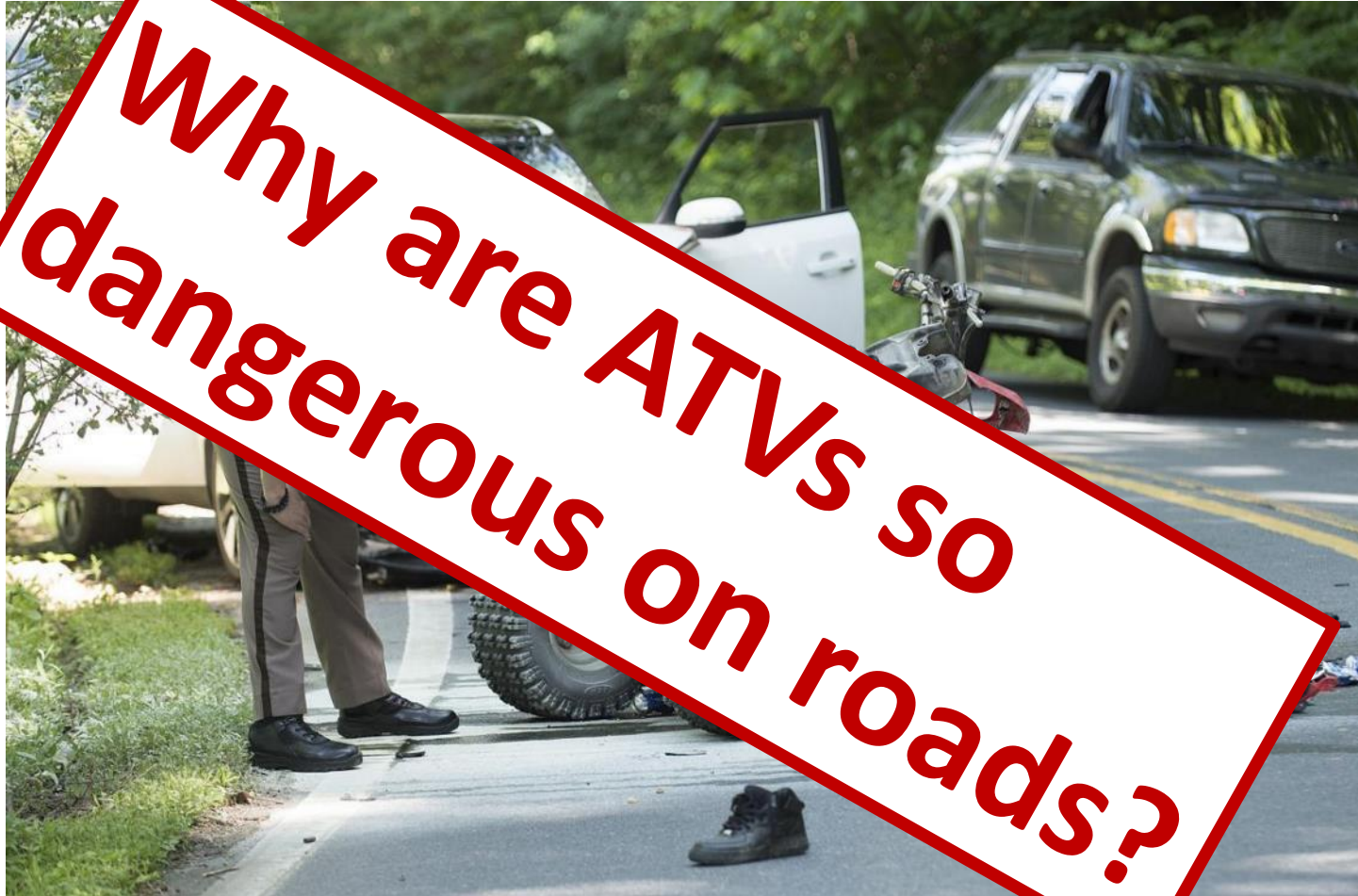


Over 60%!

After 1998, roadway deaths increased at a rate 2x greater than deaths occurring off-road.



However, over 2/3 of roadway fatalities and an even greater % of roadway injuries are not related to collisions with another vehicle.



Not Designed for Roads

- High center of gravity
- Narrow track
- Tires
- Solid rear axle/Fixed rear differential



VS.





The national trade association representing ATVs manufacturers and distributors in the US:

ATVs are not designed, manufactured, or in any way intended for use on public streets, roads or highways and urges that on-highway use of ATVs be prohibited and that law enforcement efforts be strengthened to eliminate this dangerous practice.

Of those Iowa students 11-16 yrs who had been on an ATV, over 80% stated they had ridden on a public road.









Agricultural Exemption

Use must be for a valid agricultural purpose
Between sunrise and sunset
Have a valid driver's license
Travel ≤ 35 mph



Increase visibility by:

Using a fluorescent orange flag.

**Driving orange/yellow ATVs rather
green and camouflage.**

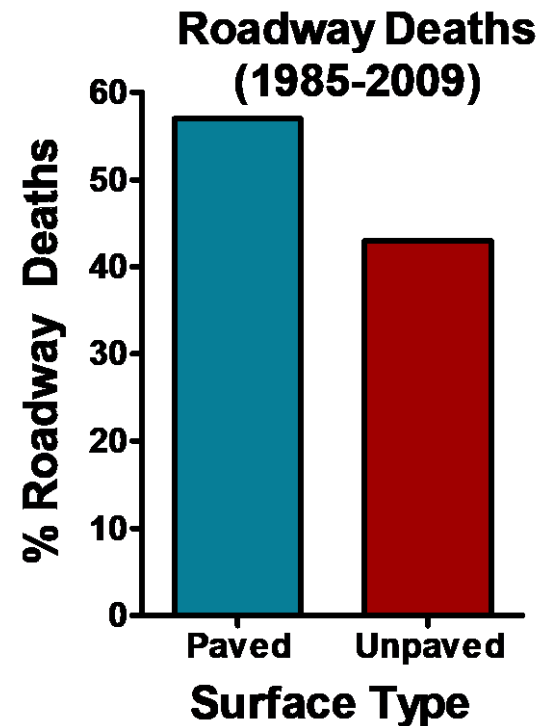


**Avoid driving on road for farm purposes whenever
able to do so.**

Recent trend is of legislation allowing increased ATV access to public roads, especially secondary roads that are unpaved.



But, **43%** of all roadway deaths are on unpaved roads.



Prevent ATV Public Roadway Access

- Be an Advocate
- Join our ATV on Roads Task force
 - Consumer Federation of America has been a lead organization
 - Rachel Weintraub:
rweintraub@consumerfed.org



Consumer Federation of America

Since 1968, CFA has sought to advance the consumer interest through research, advocacy and education.

Always wear a helmet.



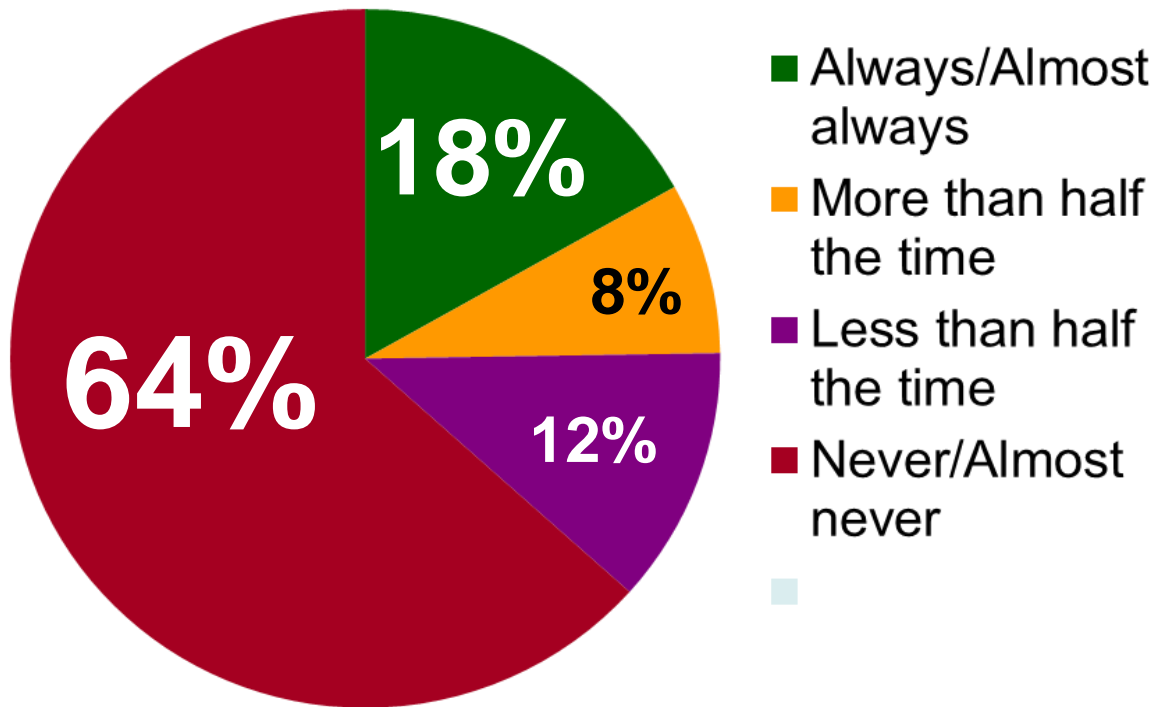
Head injuries most frequent cause of death and permanent disability in ATV crashes.



Reduce risk of head injury by about 80%.



Despite the benefits, helmets are frequently not worn.



Helmet use by adults is much lower than that of children.

An ATV helmet needs to be able to meet standards, similar to a motorcycle helmet.



Arguments made against helmets

**Reduces my
Concentration.**

**Interferes with hearing.
Can't hear livestock around you.**

**Limits Vision.
Can't see dangerous
conditions.**

**Too
Hot!**



“Helmets just look wrong, they get in the way, you can't eat, drink, shout, talk or even spit properly when wearing one... hell they are even an awkward thing to put down somewhere.”



Quadsafe Helmets



Ride the right size machine.



95% of all U.S. child fatalities (<16) were riding an adult size ATV at the time of their crash



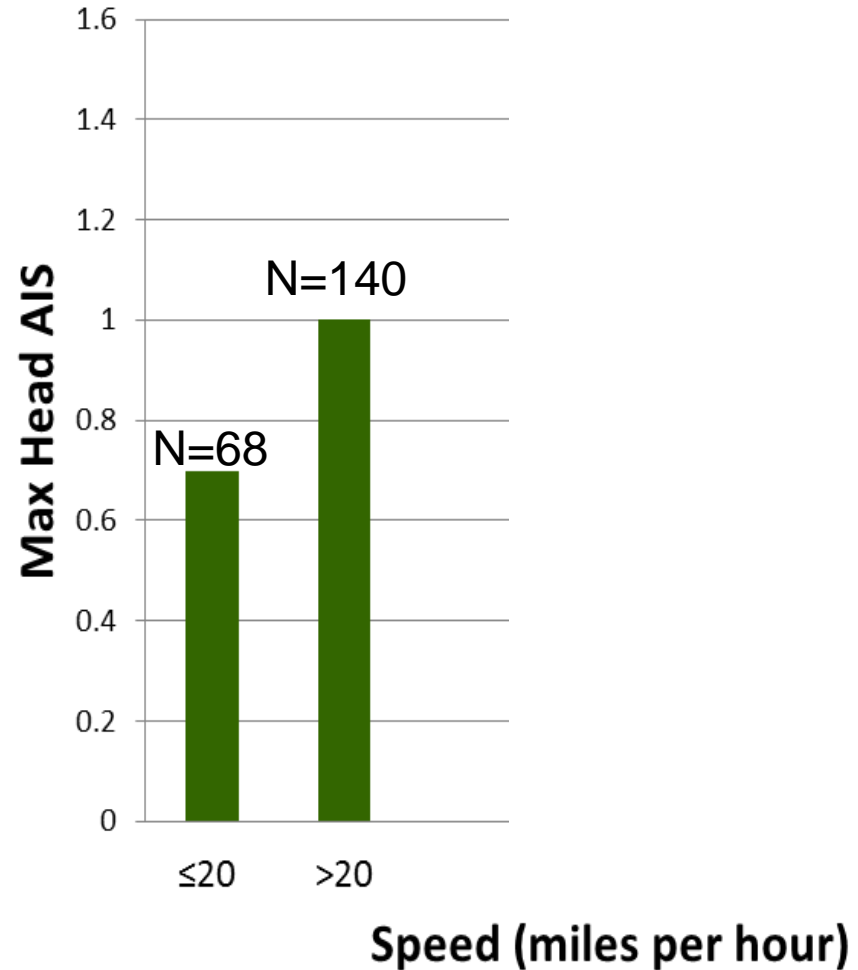
8 yr old who was on an adult ATV with another child.
ATV rolled on top of her and punctured her lung.

CPSI Act changed the definition of youth size vehicles to the vehicle's maximum restricted and unrestricted speeds.

Category	Age Range	Maximum Speed (Restricted)	Maximum Speed (Unrestricted)
Y-6+	Age 6 or older	10 mph	15 mph
Y-10+ Y-12+	Age 10 or older Age 12 or older	15 mph	30 mph
Y-14+/T	Age 14 or older	20 mph	30 or 38 mph

University of Iowa ATV Trauma Data

- Crashes with speeds >20 mph were associated with higher mean head injury scores. ($p=0.05$)



Ever increasing and higher speeds of ATVs are likely contributing to more deaths and serious injuries.



Parents should carefully assess a family member's readiness to operate an ATV.



North American Guidelines for Children's Agricultural Tasks (NAGCAT)

Youth must be able to do/have all of the following to perform this job safely:

- Avoid loose clothing, clothes with strings, tie back long hair
- Reach and operate controls when seated in center of seat or when shifting body to the back of the seat
- Stand upright while straddling the seat and lean forward over the handlebars
- Strong enough to operate the controls without straining
- Push ATV off if pinned
- Understand and control the machine
- Good peripheral vision when wearing a helmet
- Recognize a hazard, problem solve, and respond appropriately
- React quickly to hazards
- Mature enough to consistently do what is expected
- Think through actions and consequences before acting
- ATV has a Crush Protection Device (CPD) designed to prevent crush injuries at lower speed crashes
- Safely demonstrate the job 4 to 5 times
- Maintain two-way communication link

cultivatesafety.org

Not all youth have the size, strength, skills, or maturity to safely operate an ATV.



Recreational Off-Highway Vehicles (ROVs)



Sport ROV

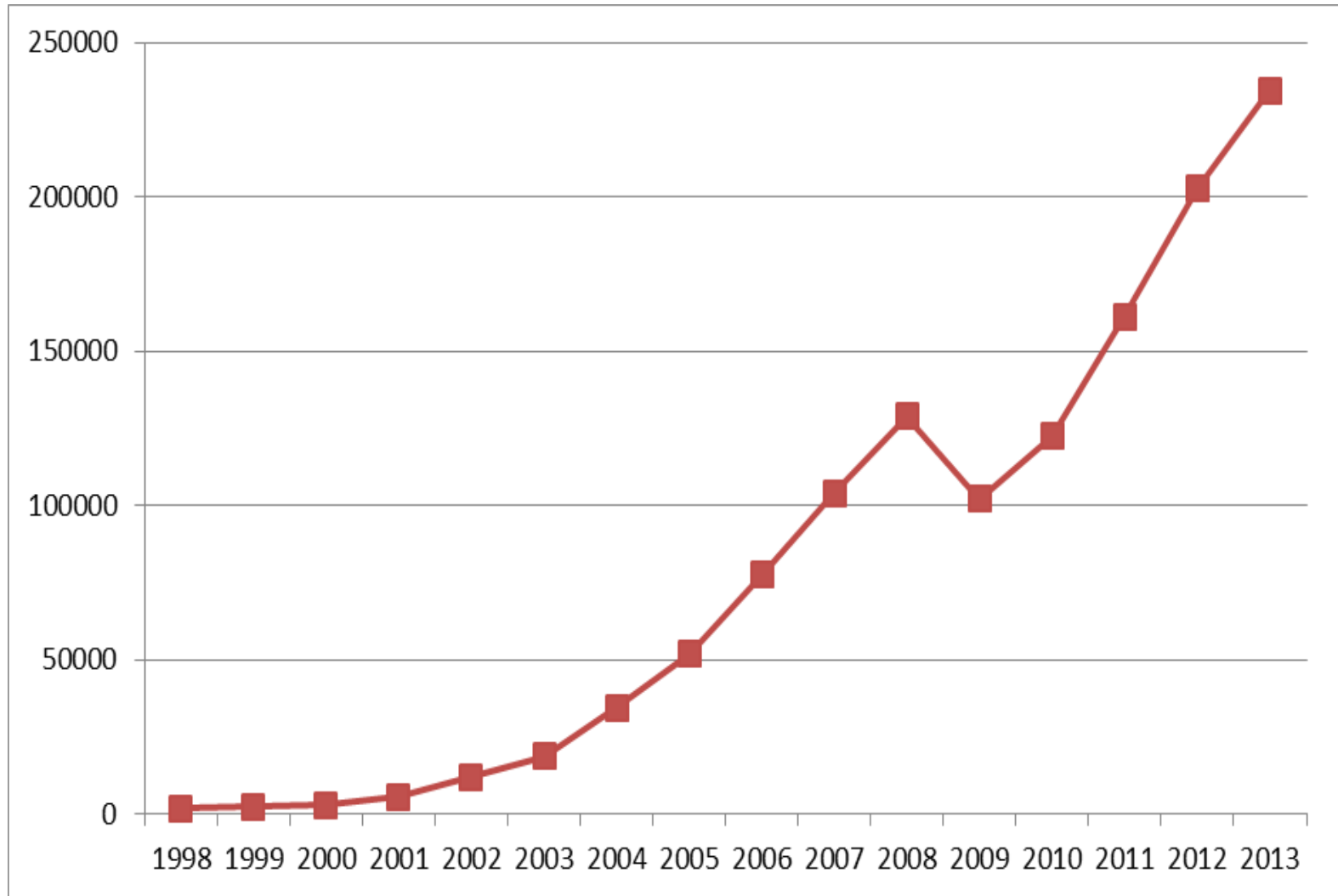


Multipurpose ROV

ROVs are becoming increasingly valuable assets in many work settings, especially agriculture.

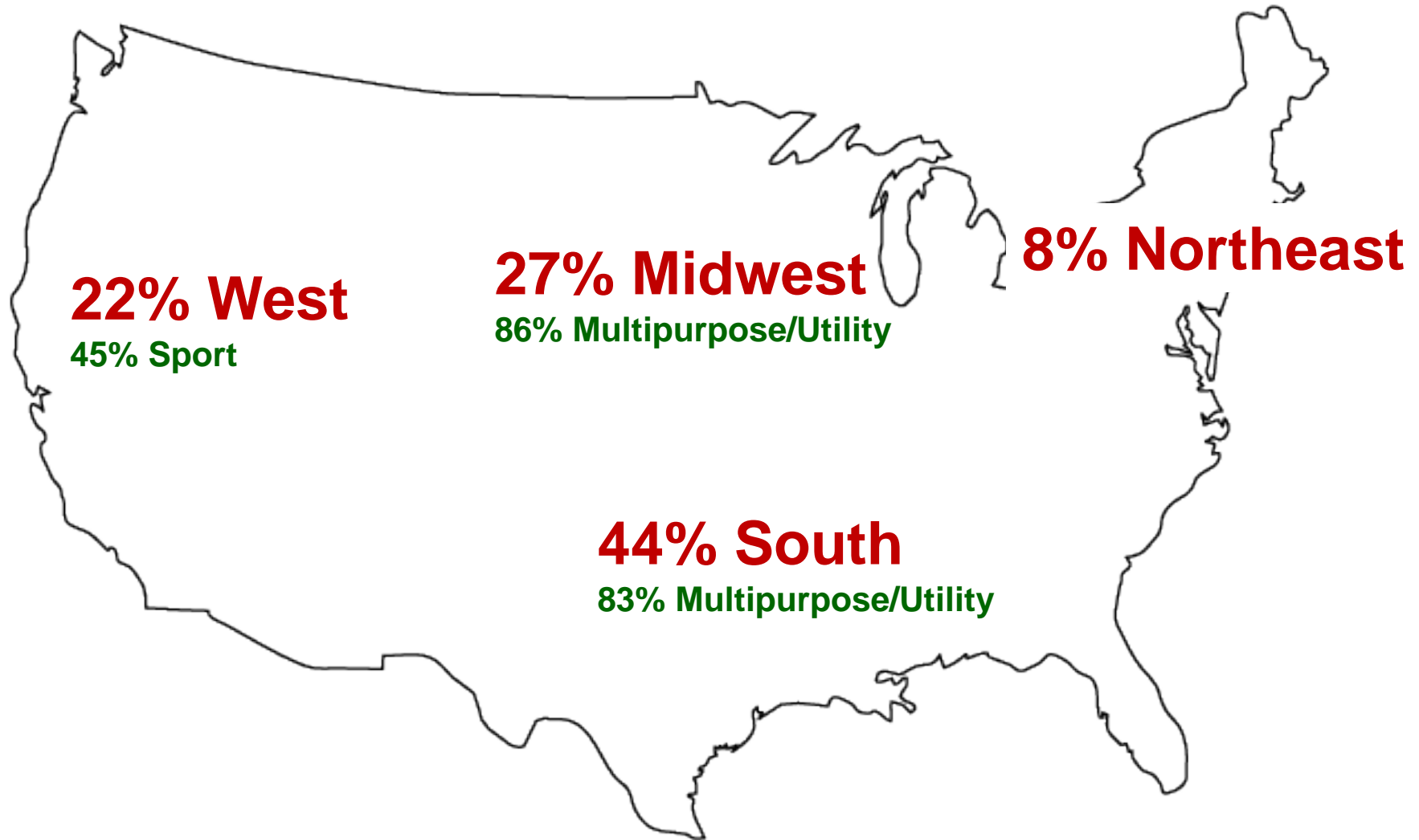


ROV Sales 1998–2013

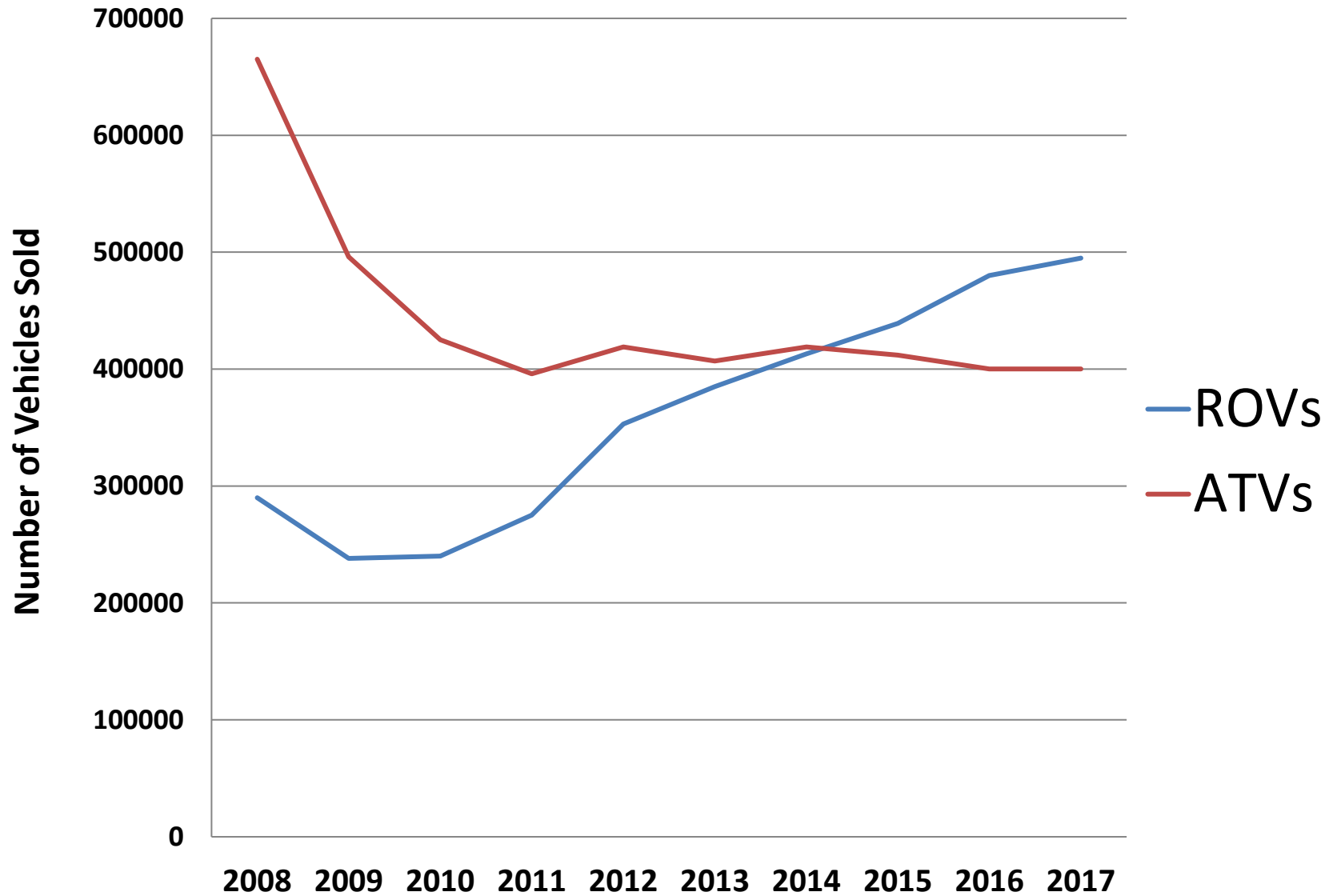


Source: CPSC analysis of data compiled by Power Products Marketing.

ROV Sales by Region



Estimated Worldwide Sales of ROVs and ATVs



Source: Compiled from Annual Reports of Polaris Industries.

ROV Exposure

- Surveyed attendees of the 2015 and 2016 Iowa FFA Leadership Conference.
- 2075 surveys completed



ROV Exposure

Owned an ROV

35%

Farm families had higher ROV ownership (77%)



Ever Ridden a ROV

81%

Ridden in the Past Year

66%

Occupational

ROV Riding Frequency in Past Year

Occupational

32%

A Few Times

19%

Monthly

Recreational

54%

24%

26%

Weekly

Daily

36%



ROV Exposure

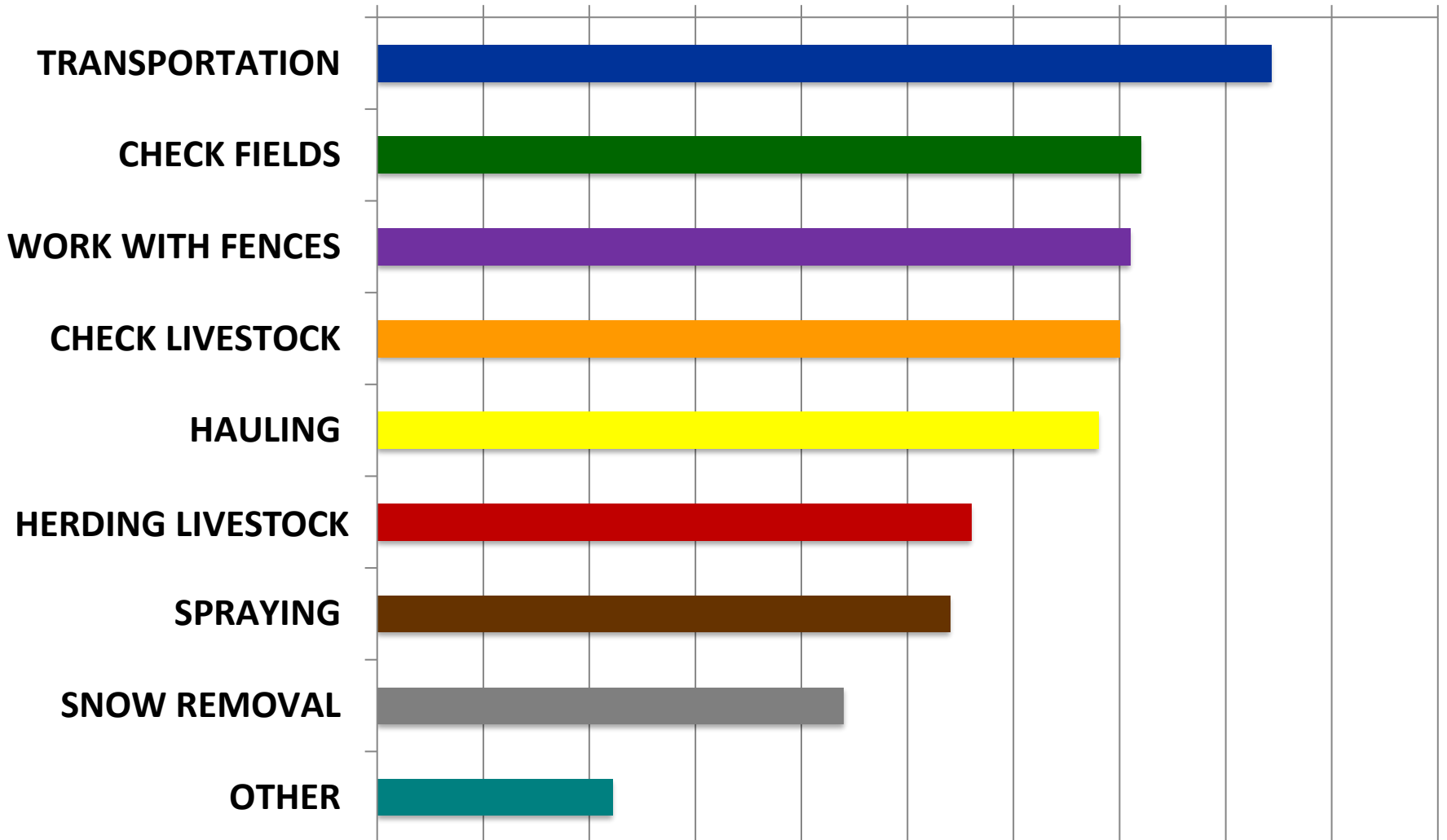
- Those living on farms had higher proportions with occupation exposure (74%)
- Higher % of males had ROV occupational exposure (77% vs. 57%).
- Males more frequent riders compared to females both occupational and recreational.

All comparisons with $p < 0.001$



Occupational ROV Work Tasks

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



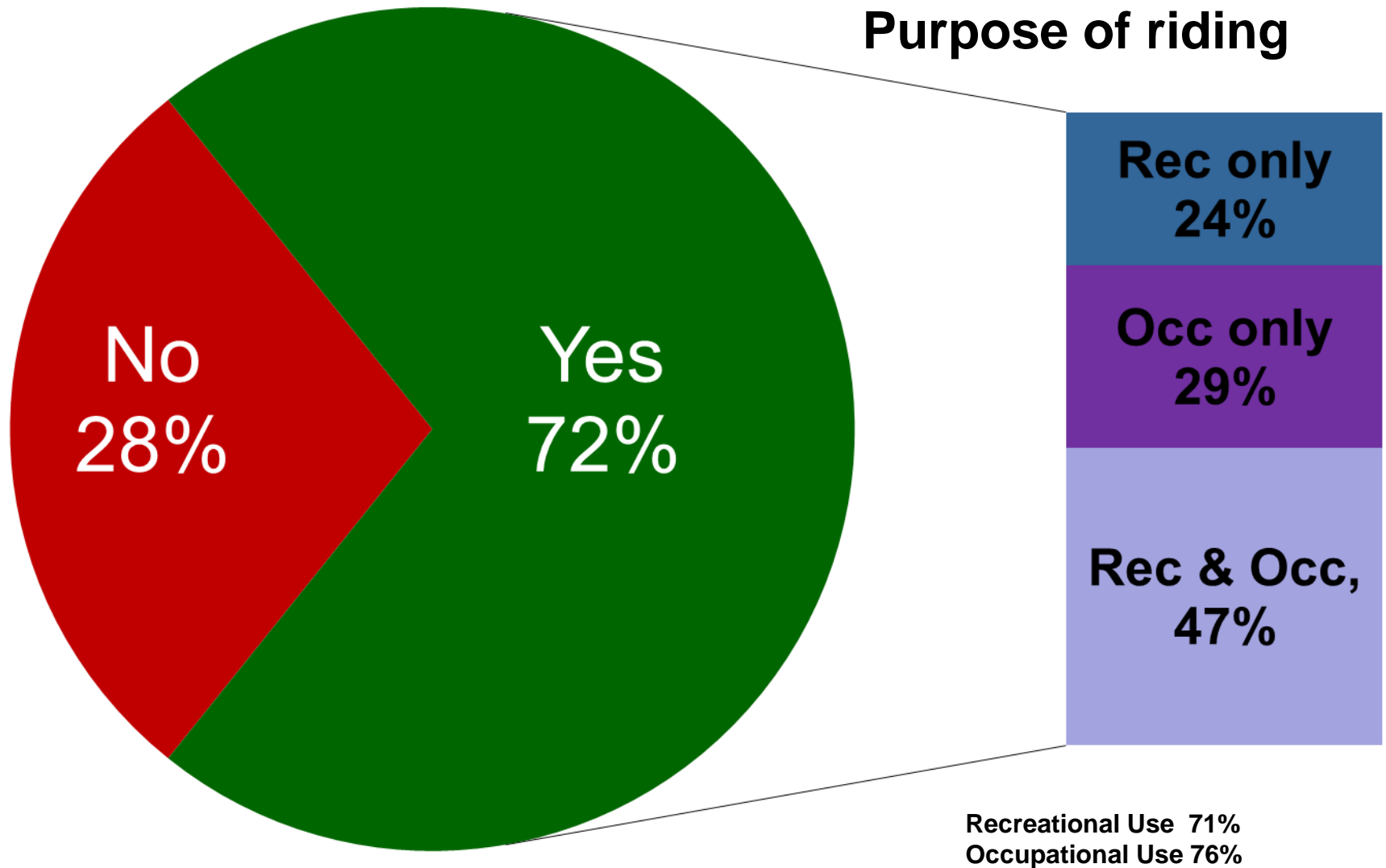
Farm Progress Show ROV Study

- Surveyed visitors to the 2014 Farm Progress Show in Boone, Iowa
- 55% lived on a farm
- 32% family currently owned a side-by-side



Driven/Ridden in an SxS in the Last Year?

Purpose of riding



Farm Progress Show

Frequency of ROV Use over the Past Year

	Occupational		Recreational	
	N (%)		N (%)	
All Riding				
Almost daily	28 (26.7)	59%	20 (20.2)	38%
About once/week	34 (32.4)		18 (18.2)	
About once/month	19 (18.1)		16 (16.2)	
A few times/year or less	24 (22.9)		45 (45.5)	

Safety Behaviors ROV



Ridden on Unpaved Public Road in Past Year

98%

Nearly one-half (45%) reported doing so at least weekly

Ridden on Paved Public Road in Past Year

77%

Over one-third reported doing so at least weekly

Helmet Use

Always/Almost Always

11%

Never, Almost Never

79%



Restraint Use

Always/Almost Always

31%

Never, Almost Never

49%



Farm Progress Show

Frequency of ROV Use over the Past Year

	Occupational		Recreational
Riding on a <u>paved</u> public road			
Almost daily	14 (13.3)		17 (16.8)
About once/week	20 (19.0)	32%	18 (17.8)
About once/month	22 (20.9)		19 (18.8)
A few times/year or less	38 (36.2)		43 (42.6)
Never	17 (10.5)		4 (4.0)
Riding on a <u>unpaved</u> public road			
Almost daily	20 (17.1)		11 (11.6)
About once/week	37 (31.6)	49%	10 (10.5)
About once/month	31 (26.5)		13 (13.7)
A few times/year or less	24 (20.5)		36 (37.9)
Never	5 (4.3)		25 (26.3)

Safety Device Use among Occupational Riders

Restraint use: Never and Almost Never 38% (37% Always and Almost Always)

Helmet use: Never and Almost Never 70%

The most important safety rule is to always wear the seat belt!



Never carry more passengers than spots with seat belts, and no passengers in the bed.



Keep extremities within the protection of the rollover structure



Most newer vehicles have a net or a small door to help prevent riders from extending their leg out during a rollover.



Helmet use is recommended by manufacturers.



Helmets may be wise when driving on the road or when there is any increased risk of rollover.



Most ROVs are not designed for or recommended to be driven by children <16 years of age.

Children who cannot rest their feet on the floor with their back against the seat while restrained should not ride the ROV.



Owner's manuals usually state that there should be no passengers less than 12 years of age.



Iowa Child Dies From ROV Injuries



Kara Meyer, 6 years old, was unrestrained and ejected during a rollover and pinned by the ROV.

Consumer Product Safety Commission (CPSC) ROV Database (2003-2011).

428 crashes with 899 vehicle occupants



UNITED STATES OF AMERICA
CONSUMER PRODUCT
SAFETY COMMISSION



CPSC ROV Study

95% were NOT wearing a helmet



73% were NOT wearing their seat belt or harness system



Alcohol use in drivers \geq 16 Years
55% of Non-Fatally Injured
47% of Fatalities



- **Roadway crashes**
 - 55% of fatalities
 - 57% of non-fatal injuries
- **Road surface type**
 - 35% paved
 - 65% unpaved



Press-Clipping Study

About 1 in 5 ROV crashes on roadways involved another motorized vehicle.

Crash Mechanism

93% Rollovers



95% Sideways



80% Turning



62% Left



82% of those unrestrained were fully or partially ejected.

- Ejected riders were 8 times more likely to have died than riders who weren't ejected.
- Riders pinned by the vehicle were almost 5 times more likely to have died.



FFA Study--ROV Crashes

Occupational

Recreational

14%

Past Year

12%

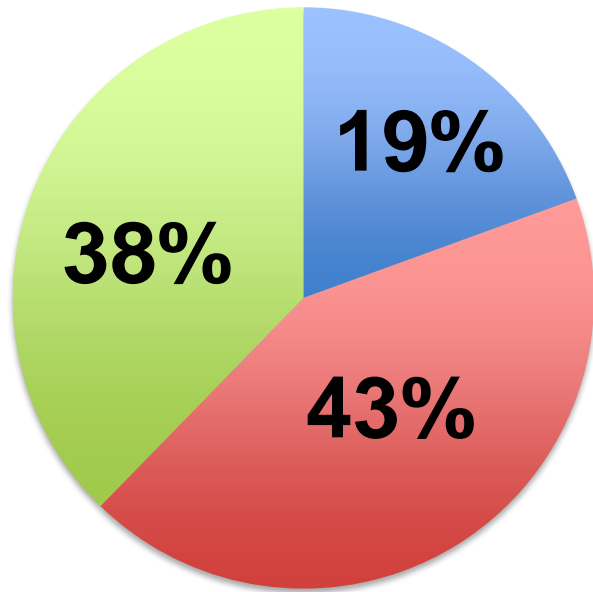
14% Sought Medical Attention

15%

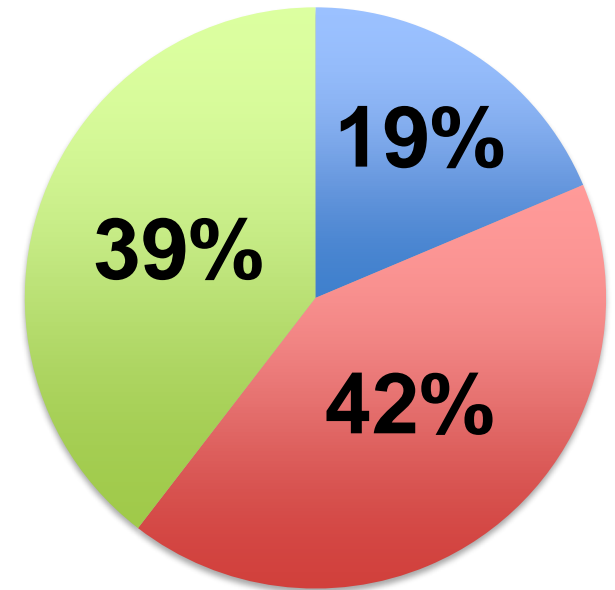


ROV Crash Mechanisms in Past Year

Occupational



Recreational



■ COLLISION WITH MOTOR VEHICLE

■ COLLISION WITH OBJECT

■ Rollover

ROV Crash

- Those living on a Farm were more likely to have had both an occupational and recreational crash than those living in Country/Not Farm and in Town. $p=0.0004$ and $p=0.022$
- Having been in a crash in the past year was not associated with riding frequency.



Farm Progress Show

Prevalence of ROV Crashes

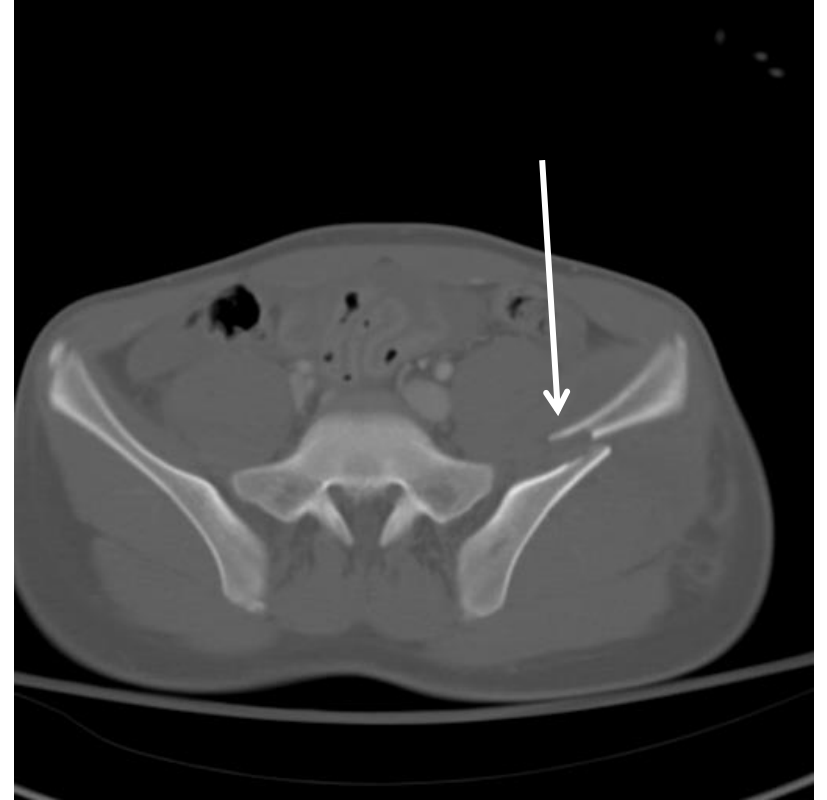
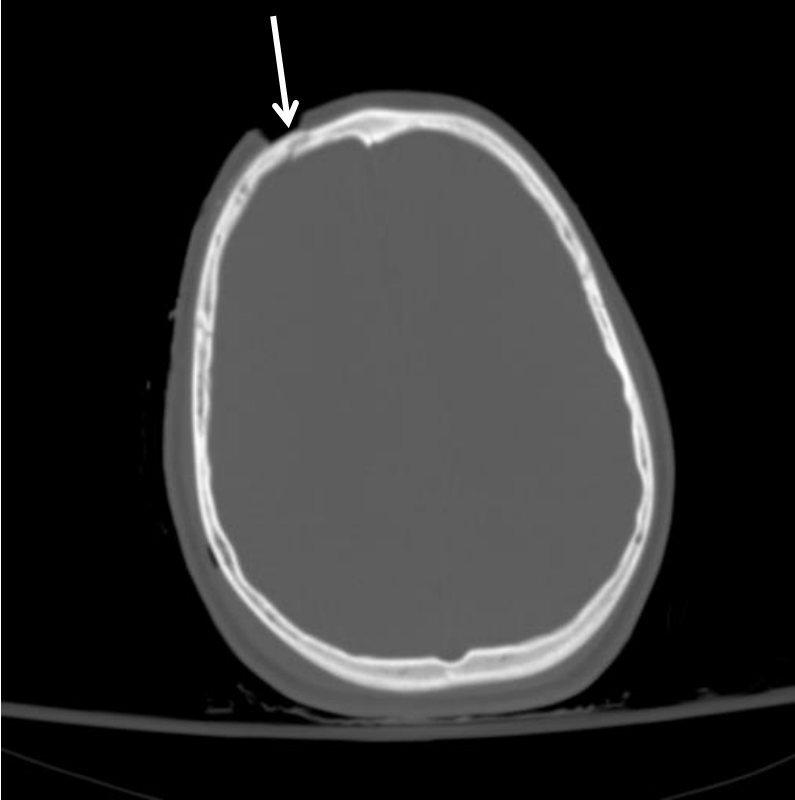
- **15% reported a lifetime occupational crash**
 - 37% had a crash in the last year
- Person injured in 38% of the crashes
- Of those injured, 1/3 sought medical attention



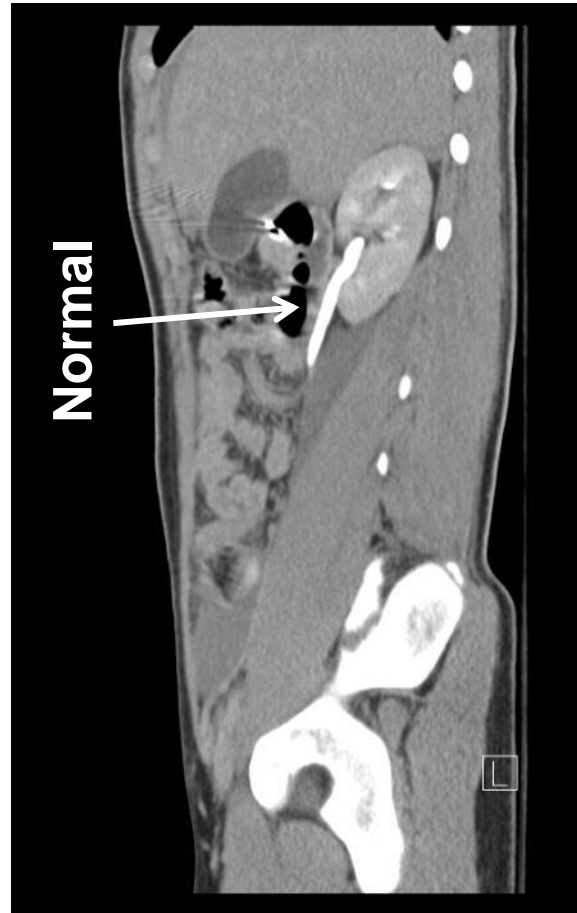
Case Study 2

- 13 year old male
- Riding alone in a Yamaha Rhino pulling a sprayer
- Turning from tar road onto gravel farm road
- Started to rollover and over-compensated with steering and rolled over the other way
- Not wearing safety belt
- Pinned under vehicle
- Stepfather was following and helped get vehicle off victim
- Multiple trauma
- Altered consciousness
- Internal organ injuries

Case 2: Multiple Trauma



Case 2: Multiple Trauma



Agricultural ATV Deaths and Injuries

Few studies have focused on ATV and SxS-related occupational deaths and injuries.



Most ATV injuries and deaths on farms are from recreational use as well.

U of I study ATV-related injuries from 2002-2008

- All occupational-related injuries were in agriculture



More than half involved herding or chasing cattle.

Unexpected terrain changes and distraction with the task at hand were likely contributing factors

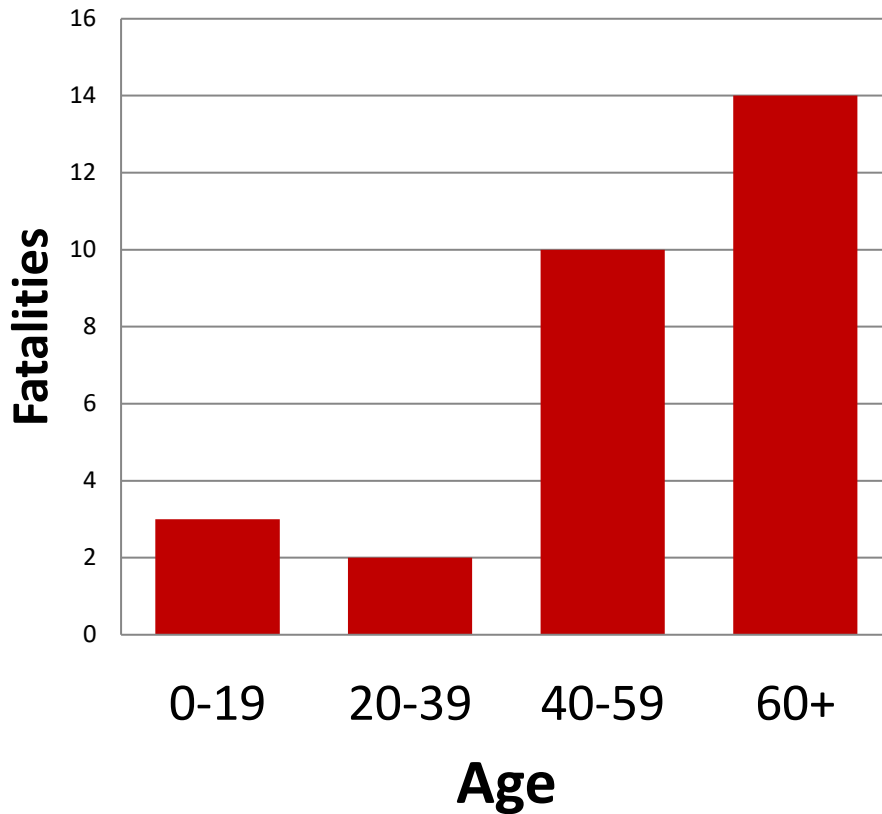


Iowa Fatality Assessment & Control Evaluation (FACE) Program

29 ATV work-related fatalities from 1996-2014

- All agriculture related.
- 86% of victims were male





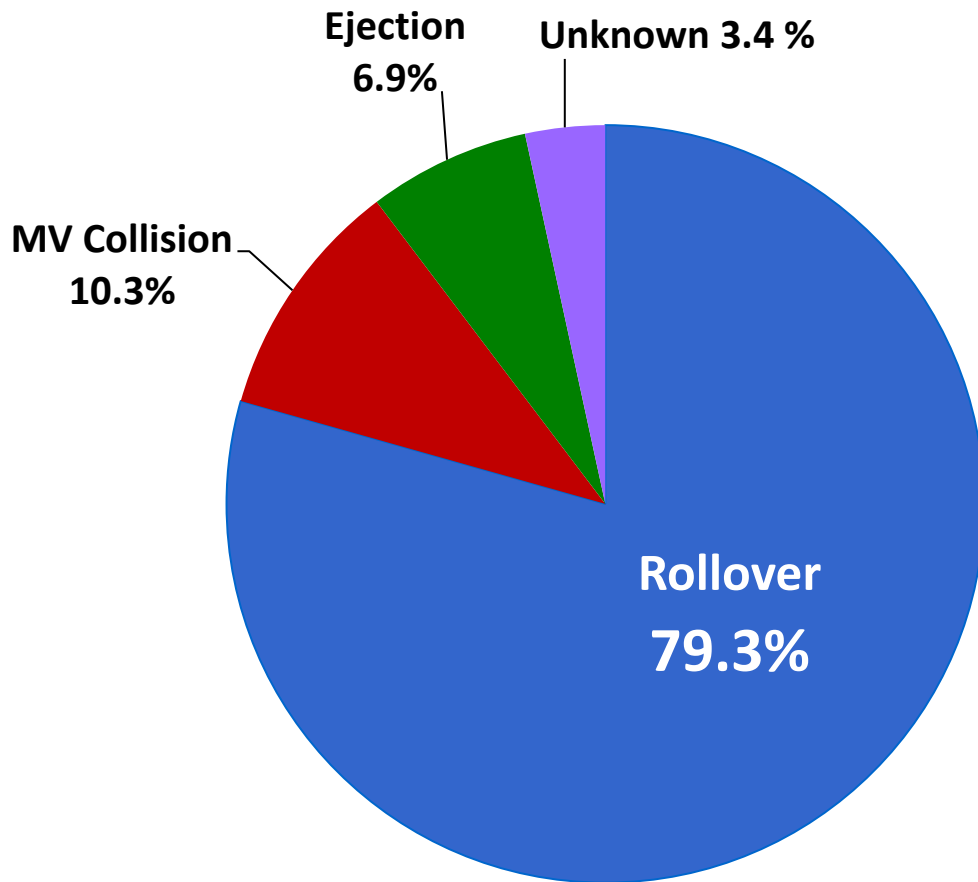
ATV occupational deaths appear to have a very different age distribution than recreational fatalities.

Fatality rate increased with age

- Workers ≥ 65 years of age in the ag production industry had the highest risk of fatality
 - More than twice the fatality rate of other ag workers.



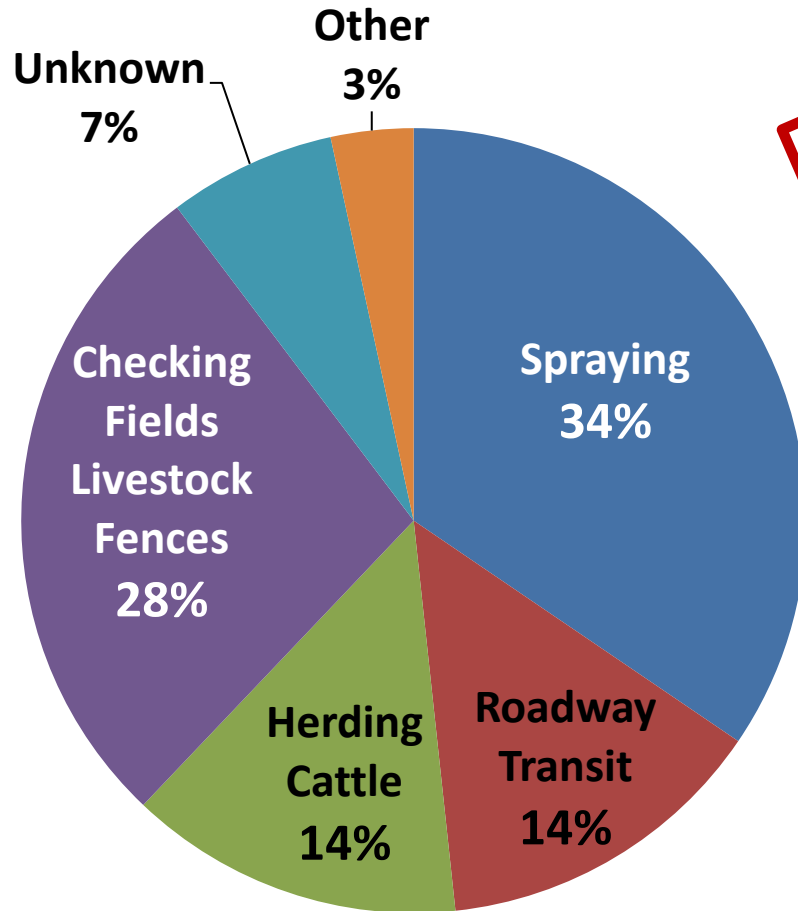
Mechanism of Injury



Cause of death in rollovers

- 100% Pinned and most died from traumatic asphyxiation

Work Activity at the Time of the Fatality



**Over
1/3!**

Spraying: Hauling of any liquid cargo can be a huge risk for rollover with shifting of the fluid, especially when on a slope.



- Surveyed participants of the Private Pesticide Applicator Course performed by Iowa Extension and Outreach from Dec 1, 2015-April 15, 2016.
- 6,322 private pesticide applicators completed the course and evaluation form.
- Nearly 2/3rds (65%) reported having used an ATV for spraying.
- Of these, 8% had been in a crash while spraying with an ATV.



Loads or shifting of loads contributed to rollovers in other ATV work-related deaths.



The maximum rack loads are often lower than one might expect.



For example, for both the 250 cc and 400 cc Polaris Trail Blazer:

- Maximum front rack load is 30 pounds
- Maximum rear rack load is 60 pounds



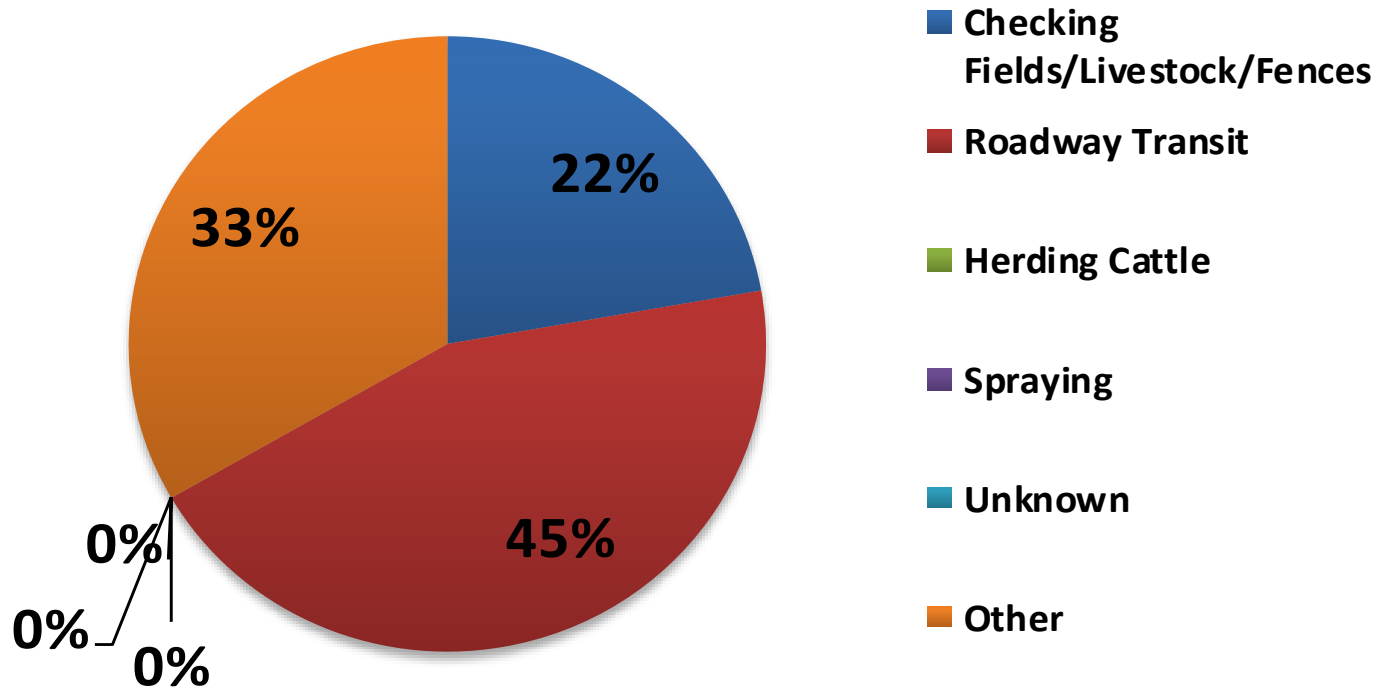
**For a larger ATV example,
the Polaris Sportsman 800 cc has a maximum
weight capacity of 1200 lbs.**

- But:
 - Maximum front rack load is 100 pounds
 - Maximum rear rack load is 200 pounds



Allows for a 900 pound operator when carrying maximum loads on the racks!

Activity at Time of Fatality for ROVs (N=9)



Roadway Transit

Roadway Deaths

16% of the *ATV/ROV* deaths occurred on the road
6/8 involved vehicle collisions



Iowa Agriculture Fatalities

- None of the victims were helmeted
- None of ROV cases were seat belted.
- None of the victims were under the influence of alcohol or drugs
- All pediatric deaths occurred while child was on an adult-sized ATV.



Iowa FFA Members--Training

(2018, n=971)

17% Taught myself

72% Family member

9% Non-family member (not an organized course)

1% Organized ATV safety-training course, no hands-on training

1% Organized ATV safety-training course with hands-on training



Iowa ATV Safety Task Force

2010-2014



2014-Present



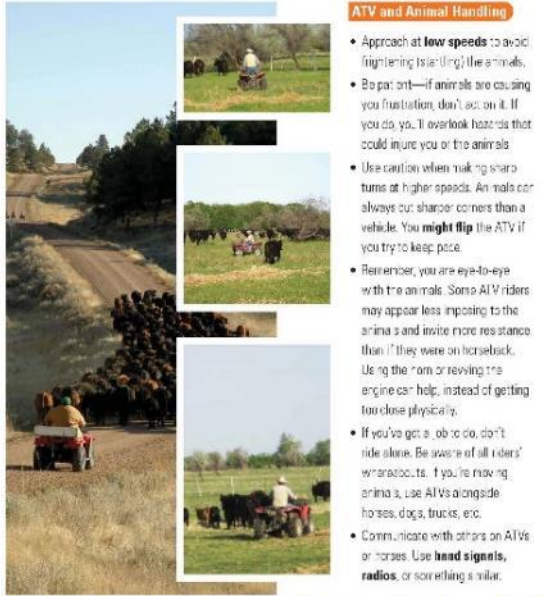
Conclusions

- ATVs and ROVs are extremely common on U.S. farms and ranches.
- Most operators and riders are not following basic safety behaviors.
- Develop and require training for employees that use off-road vehicles (ORVs).
- Have rules regarding the use of ORVs including:
 - No passengers on ATVs
 - PPE including helmets on ATVs
 - Always using the seat belts in ROVs
 - Only riding on public roads for agricultural work when absolutely necessary.
- Widespread efforts are needed to educate agricultural employers and rural families regarding ORV safety and injury prevention.

Questions/Discussion



Farm & Ranch ATV SAFETY



ATV and Animal Handling



- Approach at **low speeds** to avoid frightening (startling) the animals.
- Be patient—if animals are causing you frustration, don't act on it. If you do, you'll overlook hazards that could injure you or the animals.
- Use caution when making sharp turns at higher speeds. Animals can always cut sharper corners than a vehicle. You **might flip** the ATV if you try to keep pace.
- Remember, you are eye-to-eye with the animals. Some ATV riders may appear less imposing to the animals and invite more resistance than if they were on horseback. Use the horn or revving the engine can help, instead of getting too close physically.
- If you've got a job to do, don't ride alone. Be aware of all riders' whereabouts. If you're moving animals, use ATVs alongside horses, dogs, trucks, etc.
- Communicate with others on ATVs or horses. Use **hand signals**, **radios**, or something similar.



701.941.1552
hcahs@montana.edu
www.hcahs.montana.edu



951.941.1750
montana@montana.edu
www.montana.edu



Farm & Ranch ATV SAFETY



Fencing with ATVs

- Use a trailer to transport heavy loads of posts and tools instead of stacking too much weight onto the ATV.
- If you know you're going to have to build or replace a lot of fences, take the pick-up truck or make multiple trips.
- Secure fencing loads and materials.
- Watch your speed—high speeds mean higher chances of losing control, especially if you're carrying extra weight.



701.941.1552
hcahs@montana.edu
www.hcahs.montana.edu



951.941.1750
montana@montana.edu
www.montana.edu

Farm & Ranch ATV SAFETY



Spraying with ATVs

- Don't use an inferior spray system.
- Keep weight balanced—choose a spray system with the lowest practical order of gravity. (Slushing liquid can **significantly** change ATV handling.)
- Use a spray tank that has internal baffles. This will reduce liquid surges and improve overall stability when turning on slopes or hills.
- Choose booms that can be opened as low to the ground as possible or use a nozzle sprayer.
- ATVs should **only** be fitted with rear-mounted spray booms or other equipment to reduce the risk of pesticide exposure.
- Don't ride and spray when using a wand. If you're using this setup, make sure the ATV isn't moving while you're spraying.
- Do not drag your spray hose to avoid losing control of the ATV.
- Only use the speed that you need—the optimal speed for good spray distribution is probably slower than you'd like. **Higher** speeds mean greater chances of missing your target, and worse, possibly losing control of the ATV.



701.941.1552
hcahs@montana.edu
www.hcahs.montana.edu



951.941.1750
montana@montana.edu
www.montana.edu



MONTANA
STATE UNIVERSITY

Agricultural ATV/SxS Safety Workshop

- Presented in conjunction with the Rural Health and Safety Clinic of Greater Johnson County.
- Conducting a pilot study funded by the Great Plains Center for Agricultural Safety and Health.

Rural Health and Safety Clinic



Liability

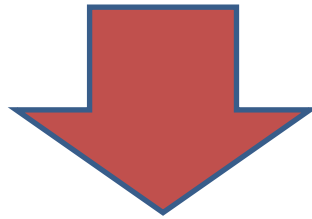
- As an employer, farmers are responsible for:
 - Training workers
 - Assessing each person's competence before authorizing a worker to perform a task

Liability

- Anyone who operates an ATV on a farmer's property or on their behalf (whether worker, family member, or guest) should be properly trained
- ATV operations requires a strong combination of skill, good judgment, attention and physical strength

Liability

- Allowing a worker to utilize an ATV without proper training and safety precautions
 - including recommendations as per warning labels on the vehicle or state laws (i.e. wearing helmets and no passengers)



Could put the farmer, as an employer, at significant liability risk if the worker has an injury

Liability

- Another significant liability risk, is allowing others to ride the vehicle for recreational purposes without proper safety training or safety precautions
- This is a particularly a problem related to children who may not have parental or legal guardian permission to drive an ATV and then drives a farmer's ATV or drives on their property

Liability

- Even if they have parental permission, an injured child's parents may expect or assume that safety precautions are being properly enforced
 - Such as riding the right size machine, helmet use, no passengers, not riding on a road
- May very well hold the family legally responsible for the injury

Liability

- Will want to check to make certain you have adequate insurance related to ATV-related liability issues

National Farm Medicine Center 2015 and 2016

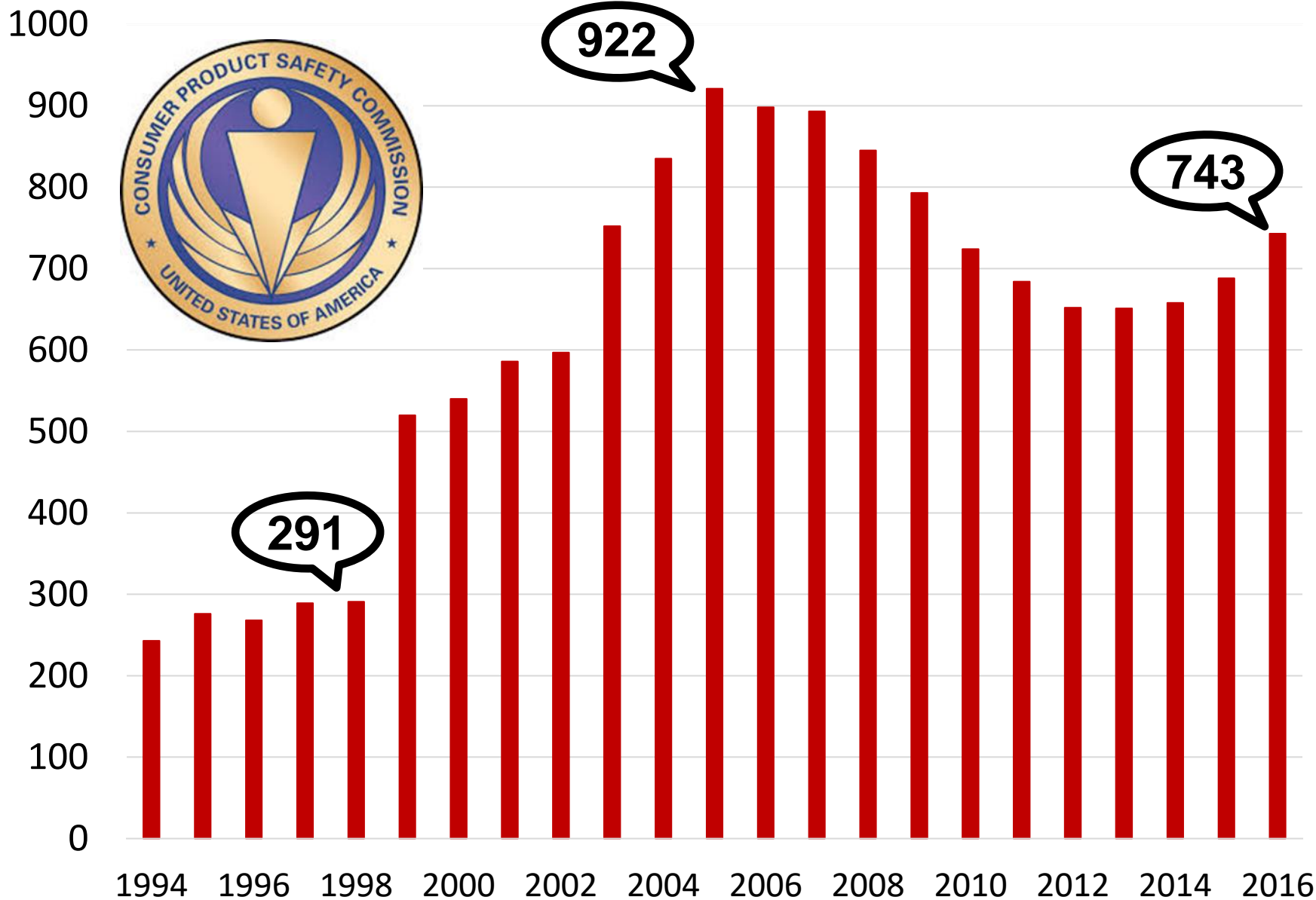
- ATVs/SxSs second most common source of injury in agriculture across all ages
- Leading cause of injury in agriculture among youth (0-17)



Every hour about 11 people are seen in a hospital ED with an ATV-related injury.



Estimated Annual ATV-Related Fatalities



57% reported having been in an ATV crash (rolled over, hit something, or fallen off).

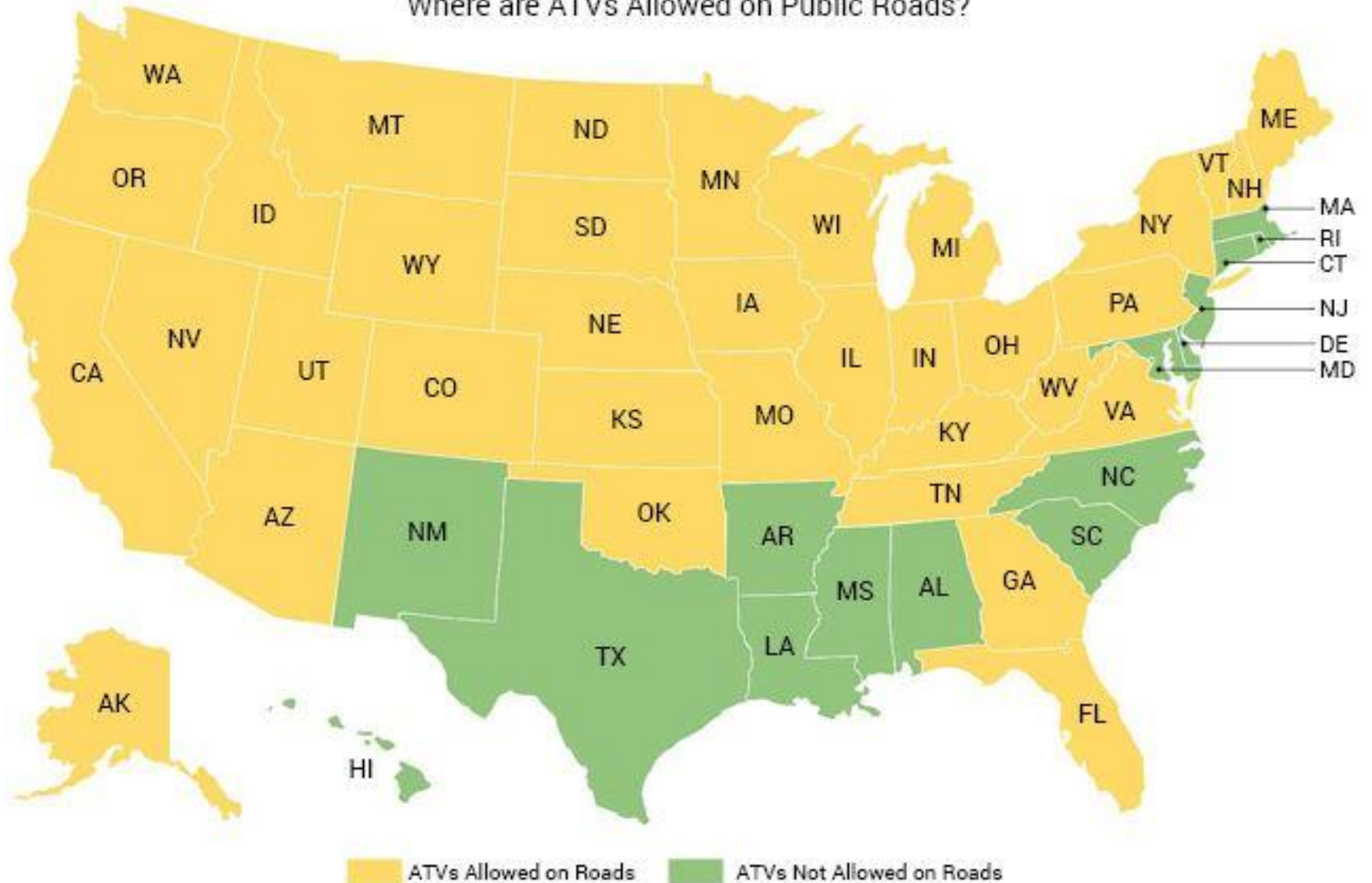


Patients who had self ejected or were thrown/fell to the side experienced the worst extremity injuries.



UNITED STATES

Where are ATVs Allowed on Public Roads?



36 States



Consumer Federation of America

FACE Data Study of SxS Occupational Deaths

- Two of the deaths involved 7 year old children:
 - 10 year-old sister was backing up the SxS to have the 7 year-old brother connect vehicle to a flatbed wagon for baling hay.
 - 7 year-old was checking cattle while driving the SxS as directed by a parent and rolled the vehicle over.





Until 2009, youth ATV size recommendations were based on engine displacement.

Age	Recommendations
<6	No ATV
6-11	70 cc or less
12-15	90 cc or less

Most ATV injuries and deaths on farms are from recreational use as well.

U of I study of 331 patients with ATV-related injuries from 2002-2008

- Only 14 were clearly identified as an occupational related injury
 - All were in agriculture

