



Introduction: Parental Influences on Teen Driver Safety

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Background: US Teen Driving Problem



13.2 Million
licensed teen
drivers



4655 crashes
involving a
teen driver
per day



622 crash-related
injuries per day



16 crash-related
fatalities per day

**Property damage/health
care: \$14 billion per year**

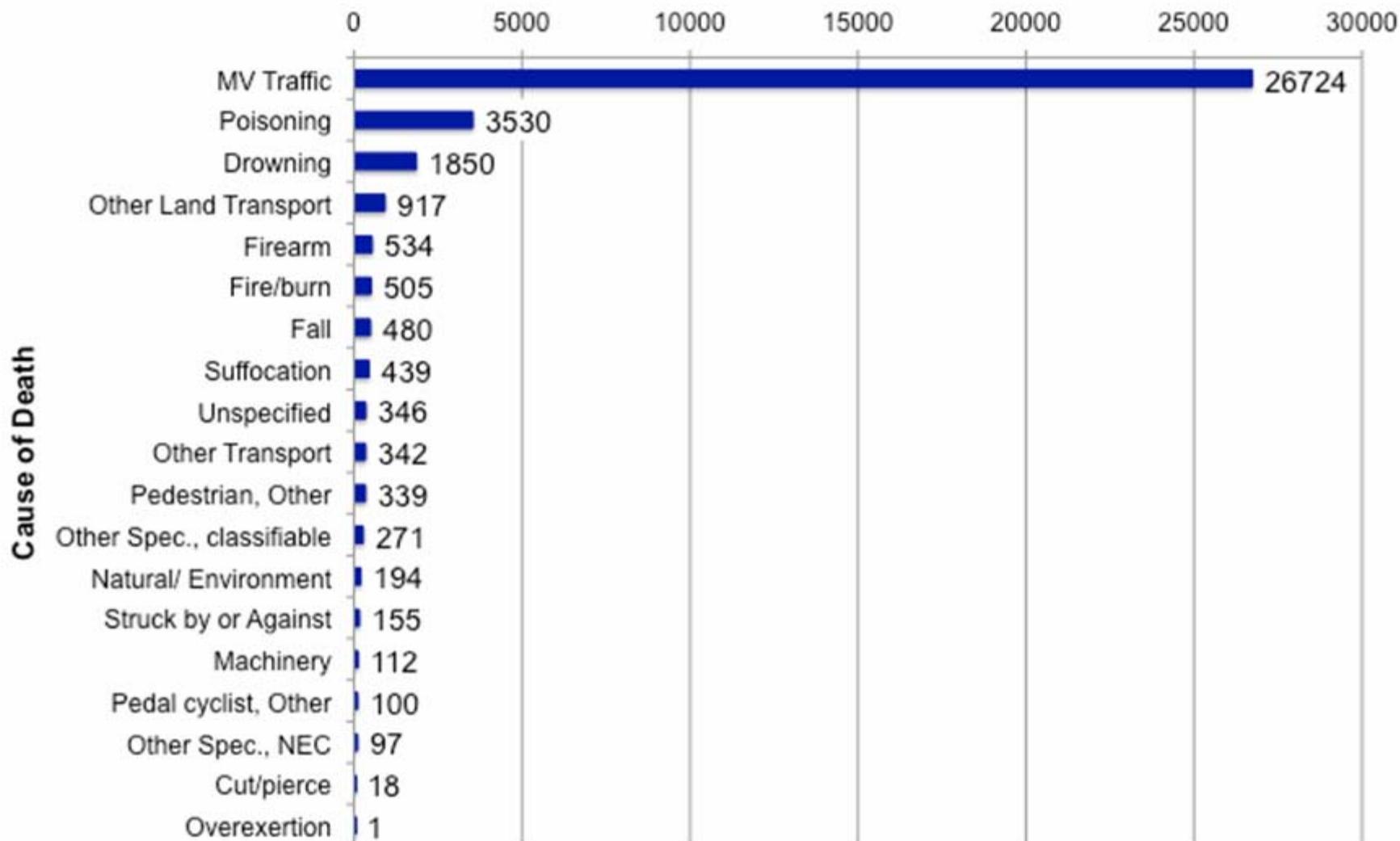
10 Leading Causes of Death, United States 2003 - 2007, All Races, Both Sexes

Rank	Age Groups												All Ages
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	
1		★	★	★	★	★							
2													
3													
4													
5													
6													
7													
8													
9													
10													

10 Leading Causes of Death, United States 2003 - 2007, All Races, Both Sexes

Rank	Age Groups				
	1-4	5-9	10-14	15-24	25-34
1	Unintentional Injuries 8,220	Unintentional Injuries 5,303	Unintentional Injuries 6,848	Unintentional Injuries 78,600	Unintentional Injuries 69,501
2	Congenital Abnormalities 2,693	Malignant Neoplasms 2,466	Malignant Neoplasms 2,495	Homocide 27,187	Suicide 25,392
3	Malignant Neoplasms 1,909	Congenital Abnormalities 959	Suicide 1,193	Suicide 20,845	Homocide 23,246
4	Homocide 1,892	Homocide 647	Homocide 1,083	Malignant Neoplasms 8,374	Malignant Neoplasms 18,094
5	Heart Disease 858	Heart Disease 493	Congenital Abnormalities 930	Heart Disease 5,450	Heart Disease 16,192

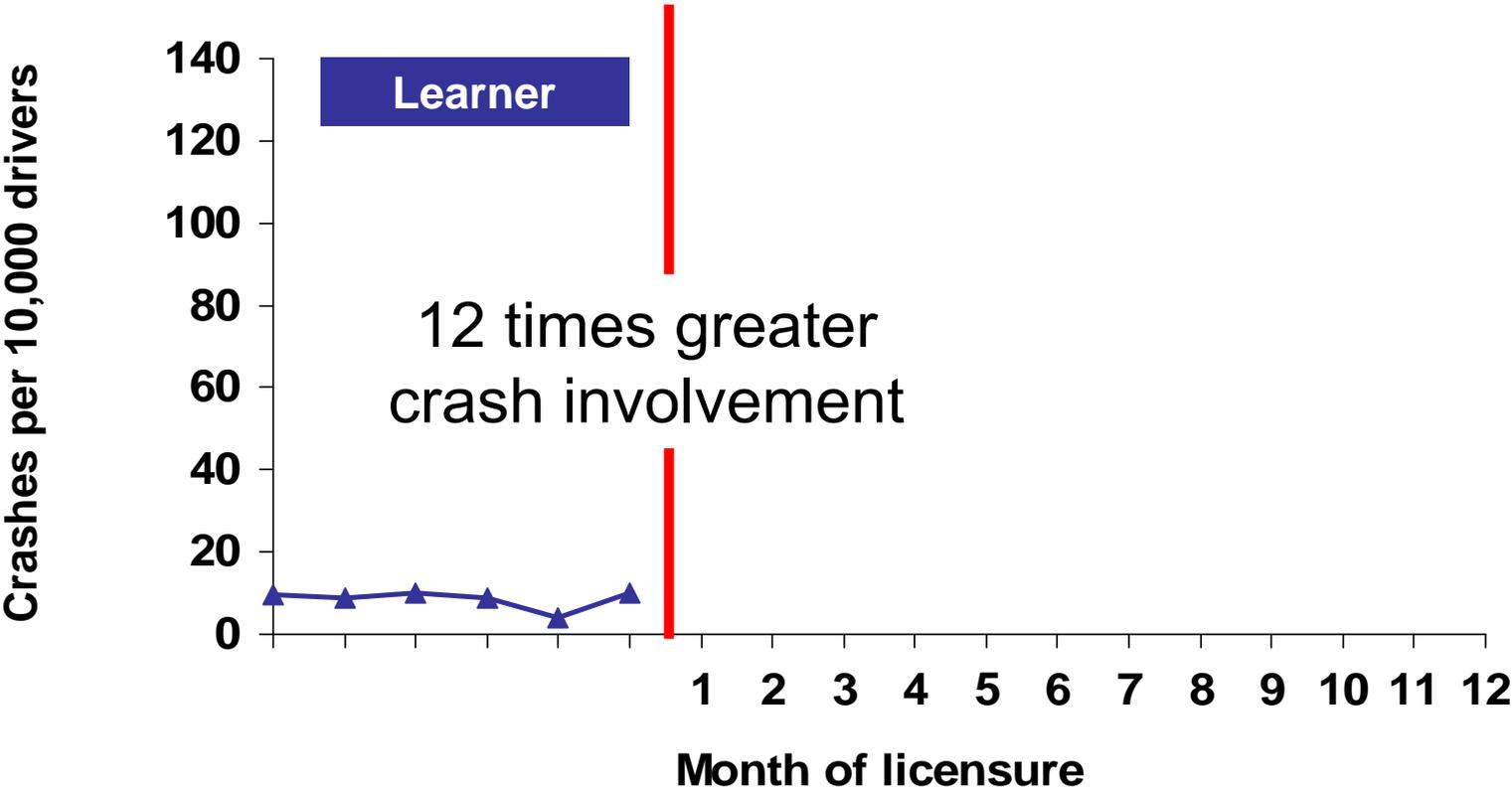
Deaths among 13-19-Year-Olds: 2003-2007



Reasons for Elevated Risk

- n **Immaturity (Bingham et al., 2008)**
- n **Inexperience**
 - o Hazard detection
 - o Safe response
 - o Unskilled at managing vehicle
 - o Don't read other drivers' intentions well
- n **Easily distracted**
- n **Sleepy/Tired/Fatigued**

Crash Rate by Licensure Month



Adapted from: Mayhew et al., 2003 - Accident Analysis and Prevention

Parental Involvement

n Consistent evidence

o More Positive Outcomes

- **School performance** (Fan, Chen, 2001; Frome, Eccles, 1998)
- **Self-perception** (Frome, Eccles, 1998)

o Fewer Negative Behaviors

- **Smoking and drinking** (Simons-Morton et al., 2001)
- **Problem behavior involvement** (Ary, Duncan, Duncan, Hops, 1999)
- **Less risky drinking at university** (Jaccard, Turrisi, 1999)

n Why not driving behavior?

Similarity in Driving: Parents and their Children

- n Driver history records** (Ferguson et al., 2001)
- n Self-reported driving behavior** (Bianchi, Summala, 2004)
- n Self-reported driving style** (Taubman et al., 2005)
- n Self-reported perceived driving risk** (Lahatte, Le Pape, 2008)

Why Might Children Drive Like their Parents?

- n Shared genes
- n Shared environment
- n Shared vehicle
- n Parenting style
- n Observational learning
- n Parental modeling

Parental
Involvement

Parental Involvement

- n **Self report of parental involvement and teen driving behavior**
 - o **Maryland, US**
 - o **424 parents**
 - o **Provisionally licensed teenage children**
 - o **Greater parent involvement associated with less risky driving**
 - o **Strong associations**
 - » Beck, Shattuck, Ralleigh, 2001

Research at UMTRI

n Longitudinal study

- o Began in 5th and 6th grades in school
- o Continued until the mid 30s
- o Surveys conducted 8 timepoints
 - Psychosocial characteristics
 - Problem behaviors
- o Complete driver history and crash record
- o Examine association between psychosocial characteristics and driving

Developmental Trajectories and Young Adult Problem Driving

n Results

o In adolescence:

- Greater parental monitoring
- Less parental permissiveness
- Greater orientation to parents



o Less high-risk driving in young adulthood

- Less drink/driving
- Less drug/driving
- Less high-risk driving

Parental Behavior and Offense and Crash Involvement

- n **Parental behavior and parent orientation predicted:**
 - o **Lower numbers of offenses**
 - **Minor**
 - **Serious**
 - **Alcohol-involved**
 - **As adolescents and as young adults**
 - o **Fewer crashes**
- n **Can we intervene to enhance parental involvement?**

Session Overview

1. **Ray Bingham: Parent Involvement in Teen Driving: The Checkpoints Program**
2. **Jennifer Zakrajsek: Translating the Checkpoints Classroom Program to a Website**
3. **Linda Scarpetta: Michigan Checkpoints Program Promotion and Evaluation**

Parent Involvement in Teen Driving: The Checkpoints Program

C. Raymond Bingham, PhD
Research Professor

The Checkpoints Program

Bruce Simons-Morton

***Eunice Kennedy Shriver National Institute of
Child Health and Human Development***

- **Parent-directed program**
- **Purpose: To help parents manage their teen's driving to reduce crash and injury risk**

The Checkpoints Program

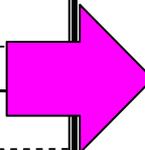
- **Persuasive communication**
 - **Facts about teen driving risk**
 - **Video**
 - **Newsletters**
 - **Parent-Teen Driving Agreement**
- **Initially:**
 - **low-risk conditions, can drive alone**
 - **high-risk conditions, with adult**
- **Later, increase privileges gradually**

Checkpoints Agreement: Part 1

Driving Privileges



LEVEL 2 DRIVING PRIVILEGES				
DRIVING CONDITIONS	CHECKPOINT 1	CHECKPOINT 2	CHECKPOINT 3	CHECKPOINT 4
NIGHTTIME				
TEEN PASSENGERS	Daytime			
	Nighttime			
WEATHER	Daytime			
	Nighttime			
ROADS	Daytime			
	Nighttime			
Length of time in effect				
Next date to review progress: <i>Follow privileges? Improve skills? Enough practice? Obey rules?</i>				
Parent and teen initial: understand and agree to accept driving conditions	Parent _____ Teen _____	Parent _____ Teen _____	Parent _____ Teen _____	Parent _____ Teen _____



Driving Rules: Part 2

Part 2...DRIVING RULES *These are absolutes – ones that apply to every trip every time*

MARK EACH WITH A CHECK TO INDICATE AGREEMENT	
TEEN DRIVER WILL:	PARENT WILL:
<ul style="list-style-type: none"> <input type="checkbox"/> Never drive after taking any drugs or alcohol or ride with a driver who has taken any drugs or alcohol <input type="checkbox"/> Never speed, tailgate, or cut off others <input type="checkbox"/> Always obey all traffic laws <input type="checkbox"/> Always wear a safety belt and require all passengers to wear safety belts <input type="checkbox"/> Always tell parent/guardian where going and with whom <input type="checkbox"/> Always call home if going to be late <input type="checkbox"/> Always call home if for any reason it is not safe to drive or ride with someone else <input type="checkbox"/> Never play around with passengers, talk on a cell phone, mess with the radio or do anything else distracting. 	<ul style="list-style-type: none"> <input type="checkbox"/> Be a good role model behind the wheel <input type="checkbox"/> Point out and discuss safe and dangerous driving situations and practices <input type="checkbox"/> Apply rules fairly and consistently <input type="checkbox"/> Consider necessary exceptions to the driving privileges <input type="checkbox"/> Provide safe ride home when asked (no questions at that time)
CONSEQUENCES IF TEEN VIOLATES DRIVING PRIVILEGES OR RULES:	
<ul style="list-style-type: none"> <input type="checkbox"/> Lose driving privileges for _____ <input type="checkbox"/> Other _____ 	

AGREE: We understand and agree to these driving privileges and rules/consequences.

Teen Initials: _____

Date: _____

Parent Initials: _____

Date: _____

Risk for Teen Drivers

CERTAIN DRIVING CONDITIONS ARE EVEN MORE DANGEROUS FOR YOUNG DRIVERS THAN THEY ARE FOR EXPERIENCED DRIVERS!			
CONDITION	Lower Risk 	Higher Risk 	Highest Risk 
AGE AND DRIVING INEXPERIENCE Teens have high crash risks the first 2 years and 20,000 miles of driving. Crashes are the #1 cause of teen death and injury.	Over 25	Ages 19 to 25	Ages 16 to 18
NIGHTTIME DRIVING Teen driver crashes at night are much more likely to involve injury or death.	Daylight	9 pm to midnight	Midnight to 6 am
TEEN PASSENGERS Teen passengers greatly increase crash/injury risk.	No teen passengers or adult-supervised	One teen passenger	Two or more teen passengers
ADVERSE WEATHER Teen drivers have more weather-related crashes.	Fair weather	Rain	Heavy rain, snow, fog
HIGH SPEEDS High speeds increase risk and severity of teen crashes.	Local roads (25-35 mph)	40 to 55 mph	55 mph and over
ALCOHOL & OTHER DRUGS Impairs judgment, especially in young drivers.	No one using alcohol or other drugs	Passengers using alcohol or other drugs	Driver using alcohol or other drugs
NOT USING SEAT BELTS Young drivers are the least likely to wear seat belts and the most likely to crash.	Every person wearing a seat belt	Back-seat passengers not wearing seat belts	Driver/front-seat passengers not wearing seat belts

Recommended Driving Limits

LEVEL 2 DRIVING PRIVILEGES				
DRIVING CONDITIONS	CHECKPOINT 1	CHECKPOINT 2	CHECKPOINT 3	CHECKPOINT 4
NIGHTTIME	<i>Sundown or 9 pm</i>	<i>10 pm</i>	<i>11 pm</i>	<i>Midnight</i>
TEEN PASSENGERS	Daytime	<i>None</i>	<i>1, sometimes</i>	<i>2, sometimes</i>
	Nighttime	<i>None</i>	<i>None</i>	<i>1</i>
WEATHER	Daytime	<i>Dry</i>	<i>Dry, light rain</i>	<i>Moderate</i>
	Nighttime	<i>Dry</i>	<i>Dry</i>	<i>Dry, light rain</i>
ROADS	Daytime	<i>Neighborhood</i>	<i>Local</i>	<i>All but highways</i>
	Nighttime	<i>Neighborhood</i>	<i>Neighborhood</i>	<i>Local</i>
Length of time in effect	<i>First 1-3 months</i>	<i>Next 1-3 months</i>	<i>Next 3-6 months</i>	<i>Next 3-6 months</i>
Next date to review progress: <i>Follow privileges? Improve skills?</i> <i>Enough practice? Obey rules?</i>	<i>January 1</i>	<i>April 1</i>	<i>July 1</i>	<i>October 1</i>
Parent and teen initial: understand and agree to accept driving conditions	Parent _____ Teen _____	Parent _____ Teen _____	Parent _____ Teen _____	Parent _____ Teen _____

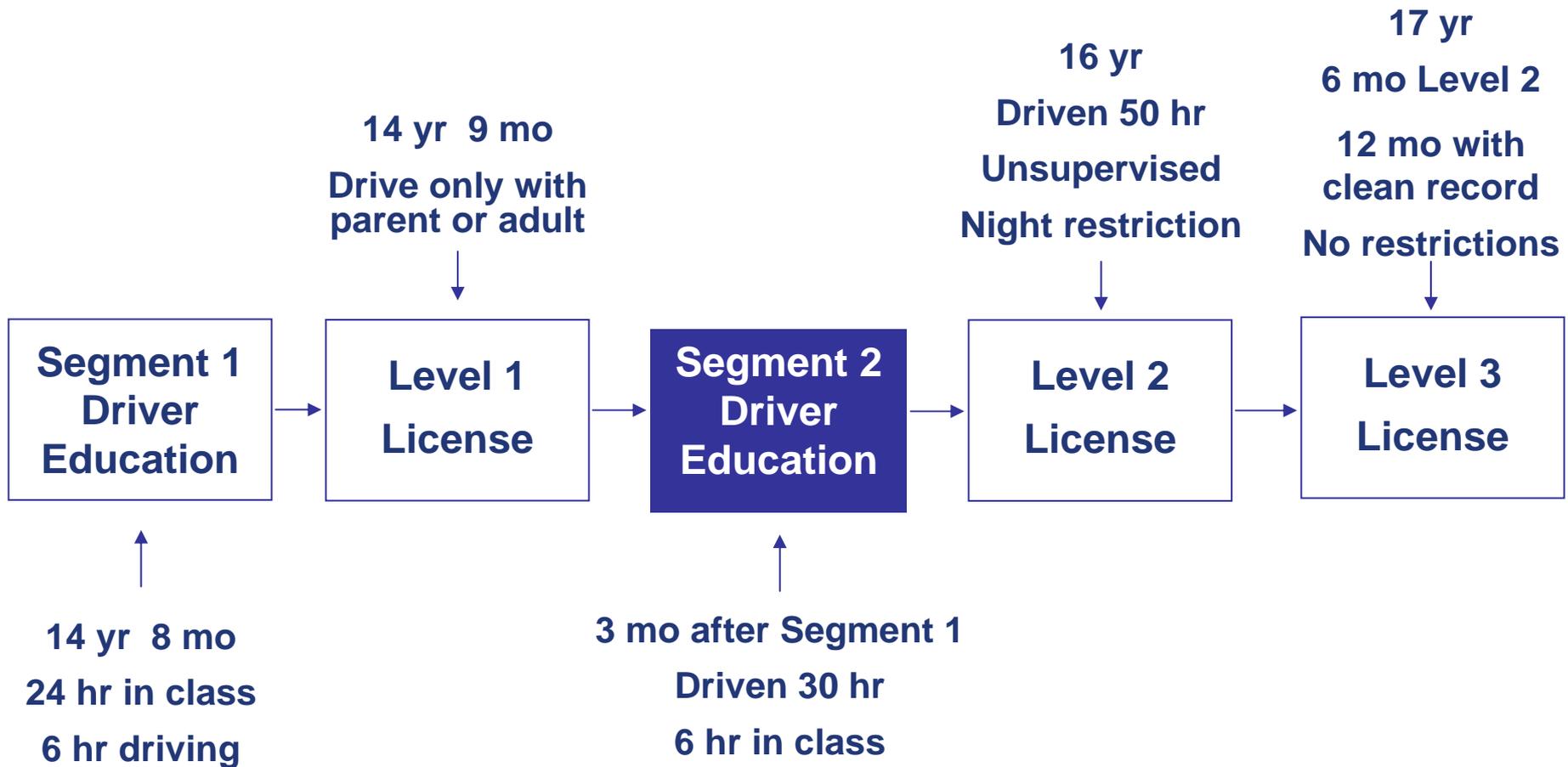
Results of Early Trials

- **Most used intervention materials**
- **Half completed agreement**
- **Set stronger restrictions 1st year of licensure**
- **Most used restrictions: trip permission and return times**
- **Least used restrictions: nighttime driving, passengers, road types**
- **Fewer driving offenses in first 12 months (CT)**

Checkpoints in MI: Efficacy Evaluation

- **Principal Investigator:**
 - **Jean T. Shope, MSPH, PhD**
 - **Funded by National Institute for Child Health and Human Development**

GDL and Driver Education in Michigan



Driver Education as a Setting for Checkpoints

- **Timing - prime moment for intervention**
- **Venue for parent-teen interaction and discussion**
- **Interaction with a facilitator**
- **Most states require driver education – implementation**
- **Sears Athorized Driving Schools**

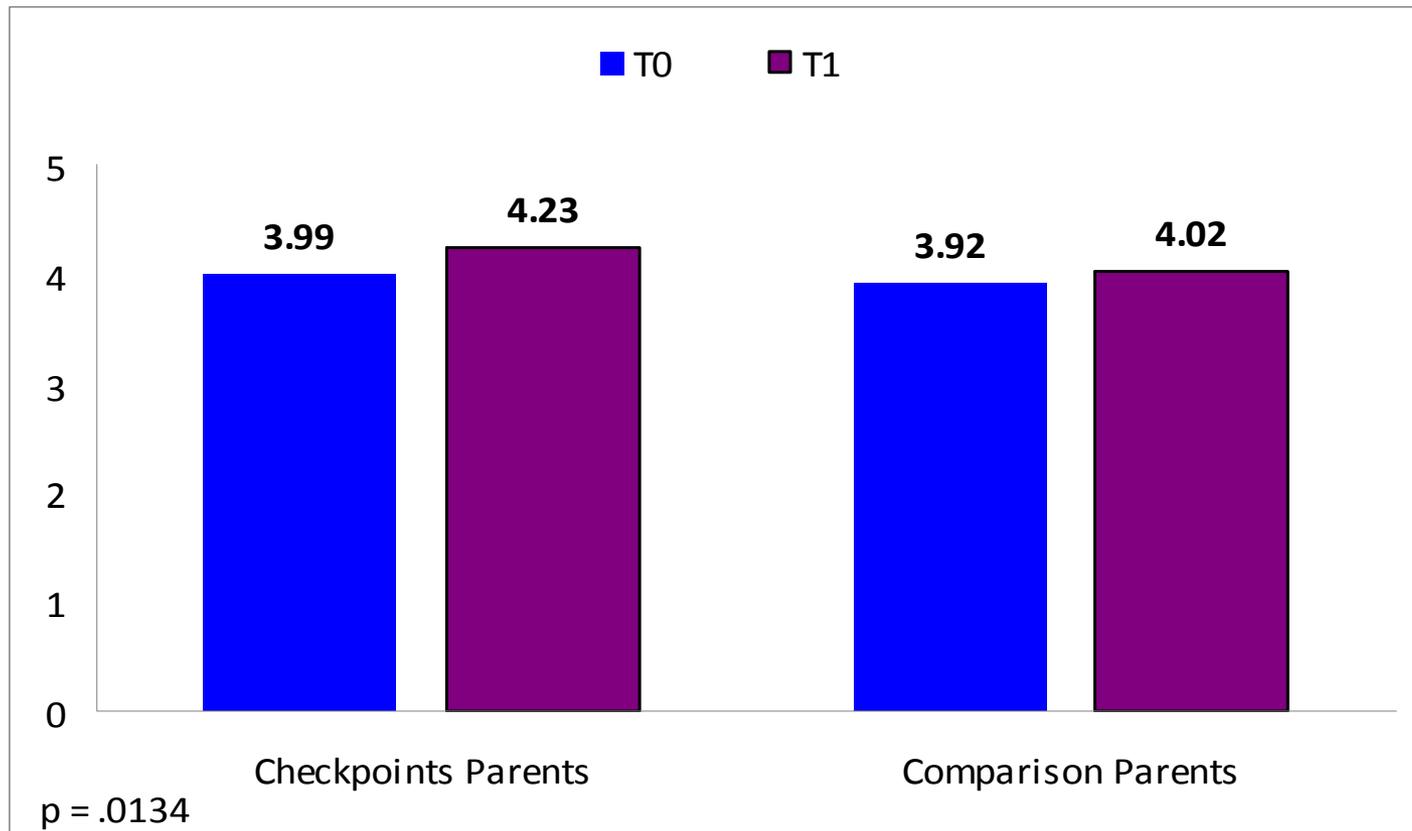
Objectives

- n Raise awareness of teen driving risks**
- n Use the driving agreement**
- n Set appropriate driving restrictions**
- n Monitor teens' early driving by parents**
- n Reduce teens' risky driving**

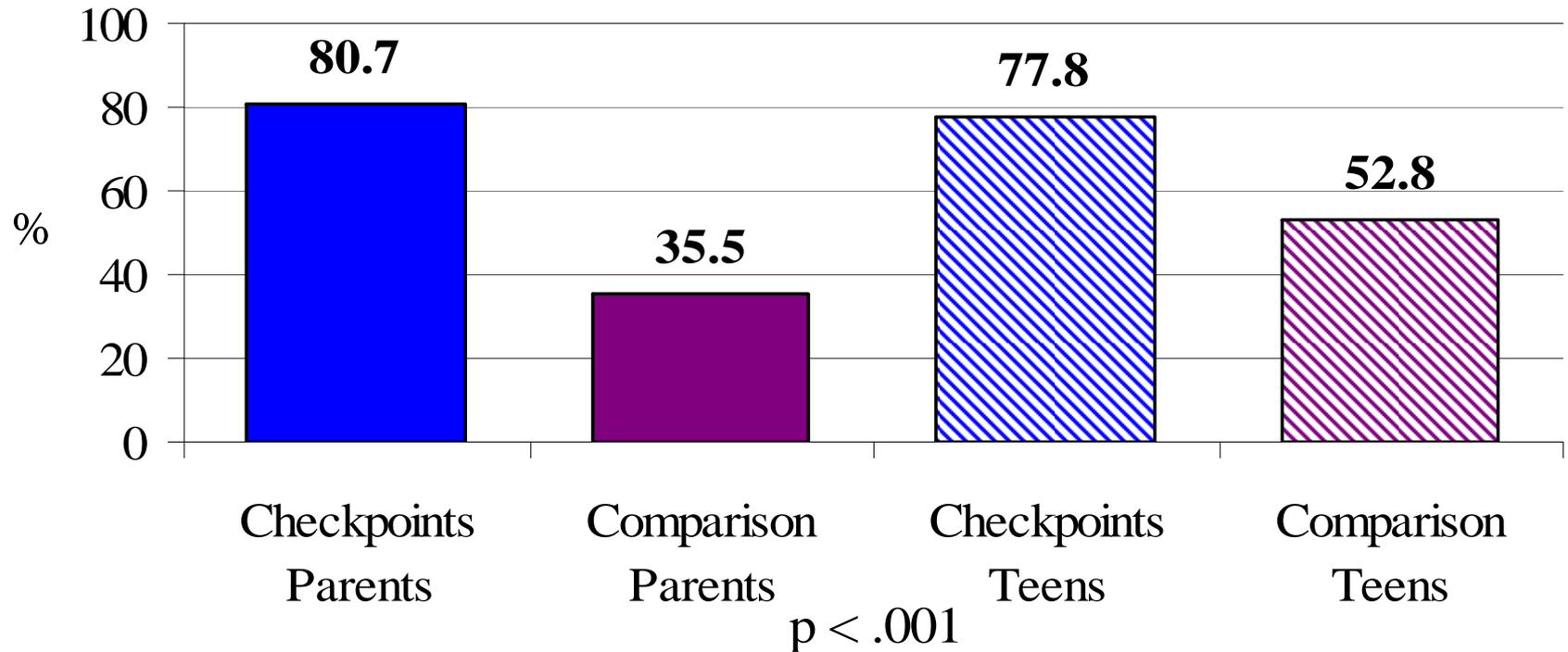
Checkpoints Classroom Session

- **Introduction**
- **Video “Who Wants to Be a Driver”**
- **Discussion**
 - **Persuasive messages**
 - **Teen drivers’ risk**
- **Complete parent/teen agreement**
- **Poll of intention to enforce driving restrictions**

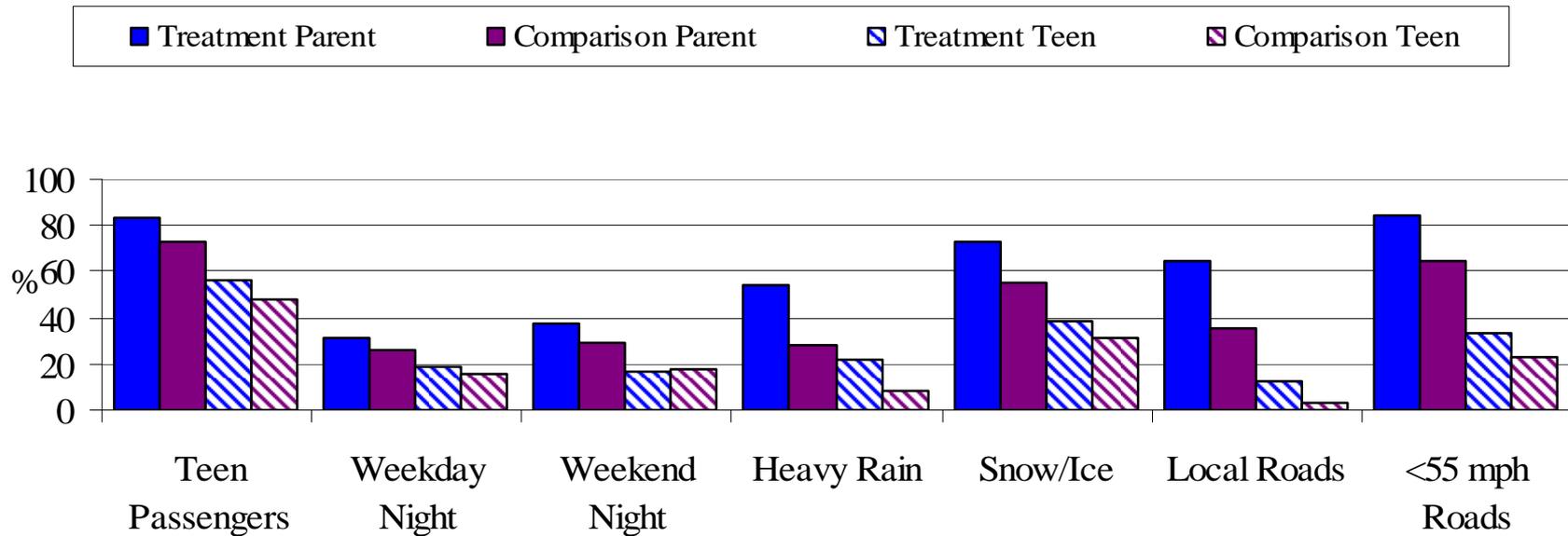
Parents' Awareness of Risk



Parents' Adoption of Agreement



Recommended Restrictions



Summary – Efficacy Trial

- **Checkpoints parents:**
 - Had increased awareness of teen driving risk
 - Were more likely to have completed agreement
 - Were more likely to set recommended restrictions in most conditions (not nighttime driving)
- **Parents reported stricter restrictions than teens**

Checkpoints in MI: Effectiveness Evaluation

- **Investigators:**
 - **Jean T. Shope, MSPH, PhD**
 - **C. Raymond Bingham, PhD**
- **Funded by the CDC, NCIPC**
- **Randomized Controlled Trial**

Objectives

- n Raise awareness of teen driving risks**
- n Use the driving agreement**
- n Set appropriate driving restrictions**
- n Monitor teens' early driving by parents**
- n Reduce teens' risky driving**

Participating Driving Schools

3D Driving School

**Dickinson Area Driving
School**

ABC Training and Testing

Hunter Driver Training

All Star Driver Education

My Turn to Drive

A OK Driver Education

Navigator Driving Academy

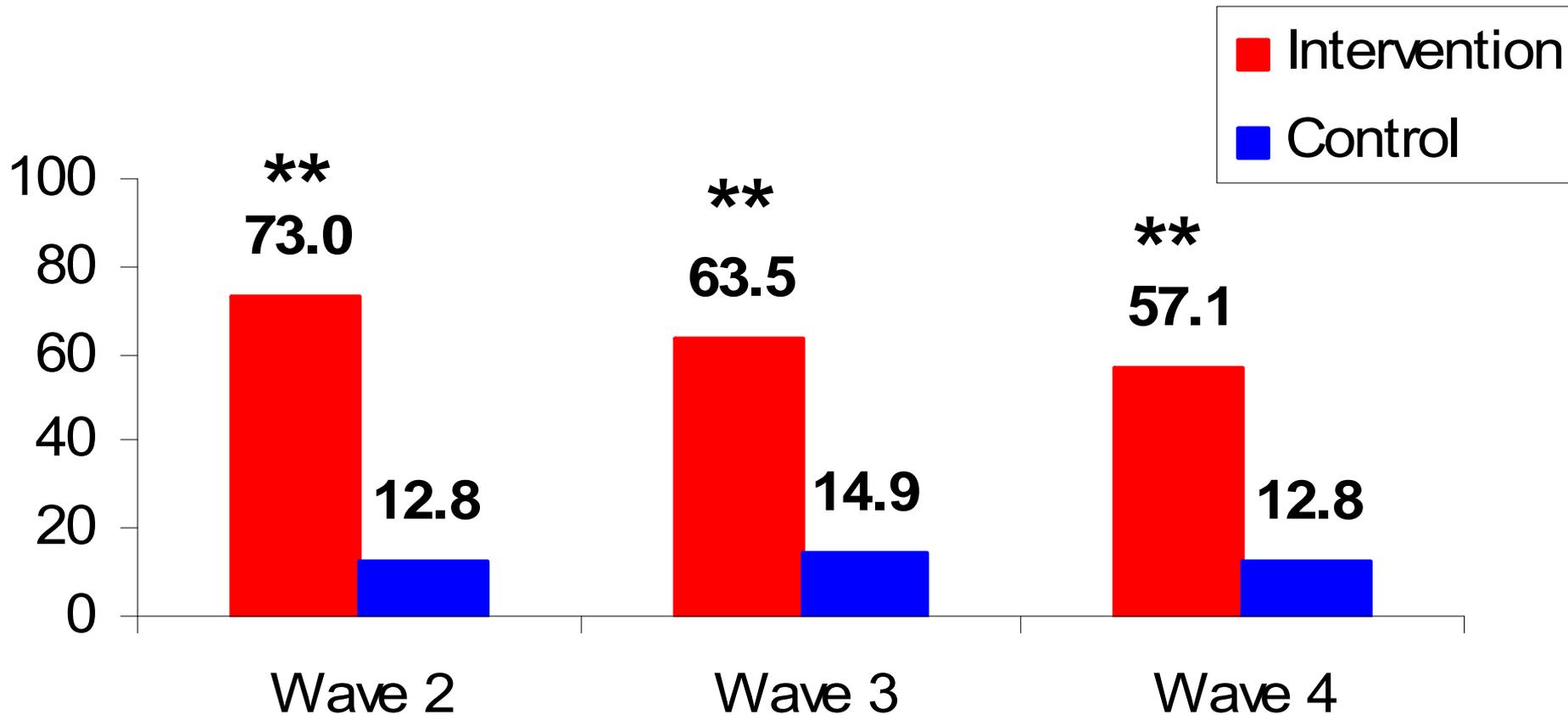
Courtesy Driving School

Quality One Driver Training

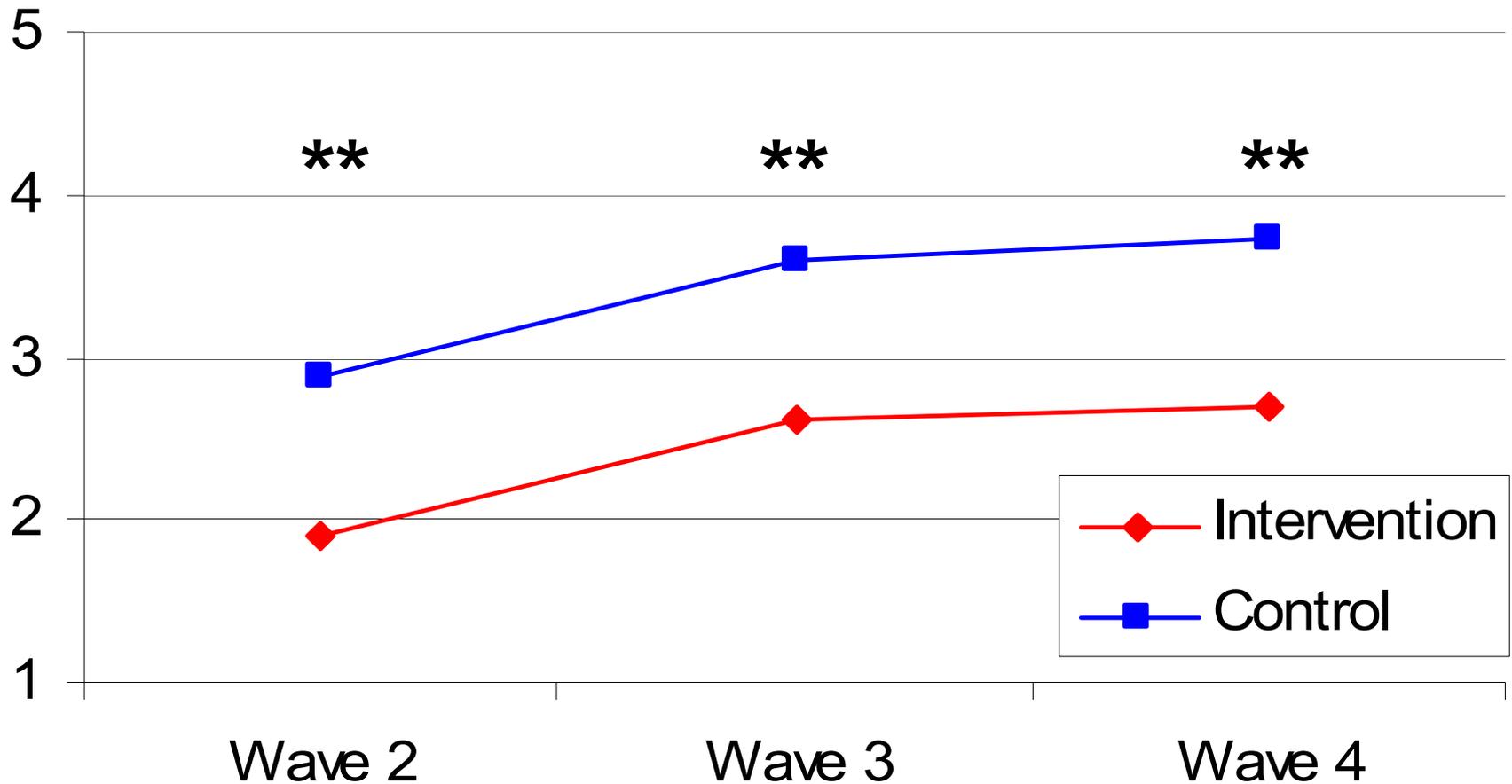
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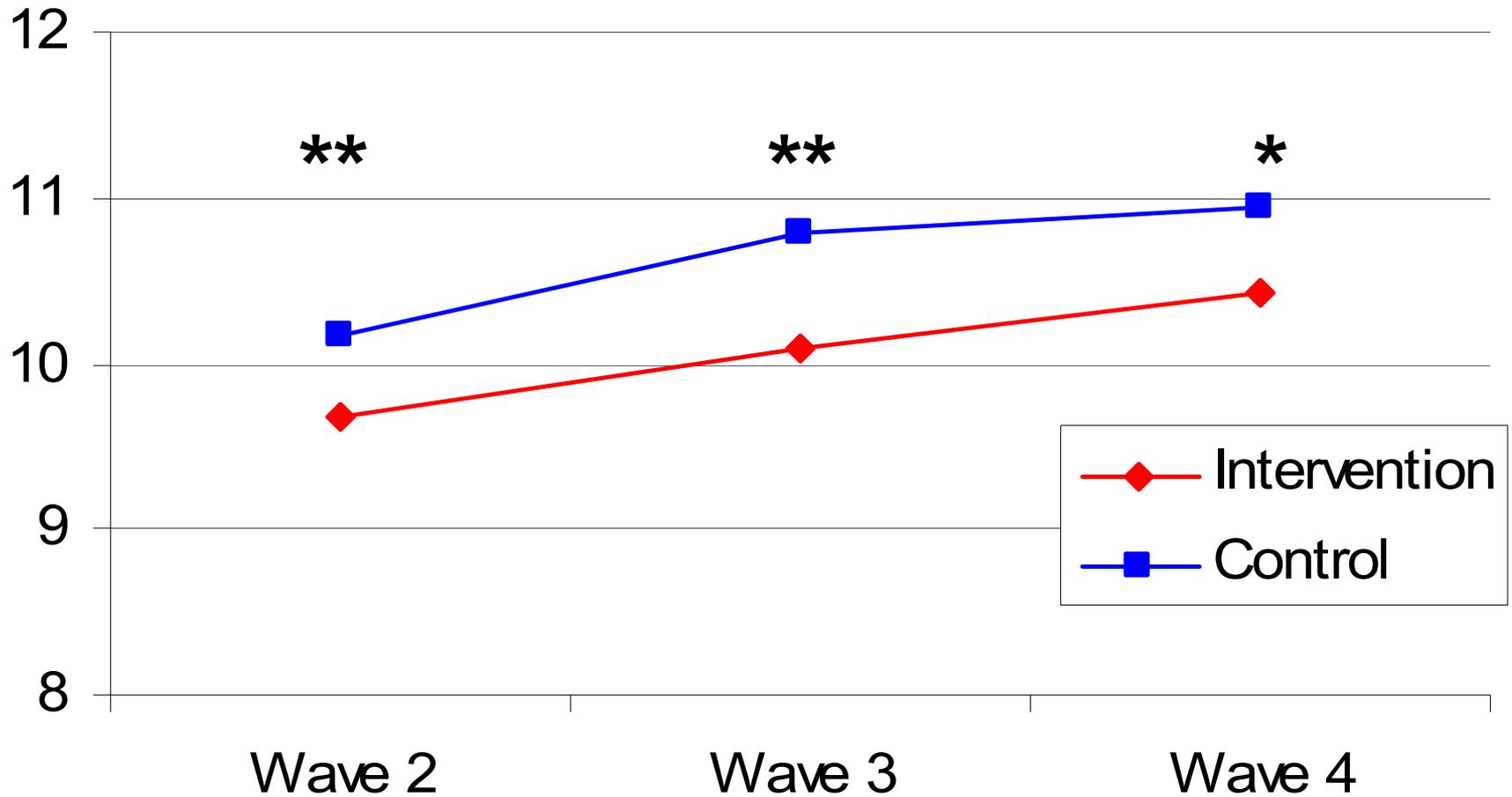
Parents' Use of Written Agreement



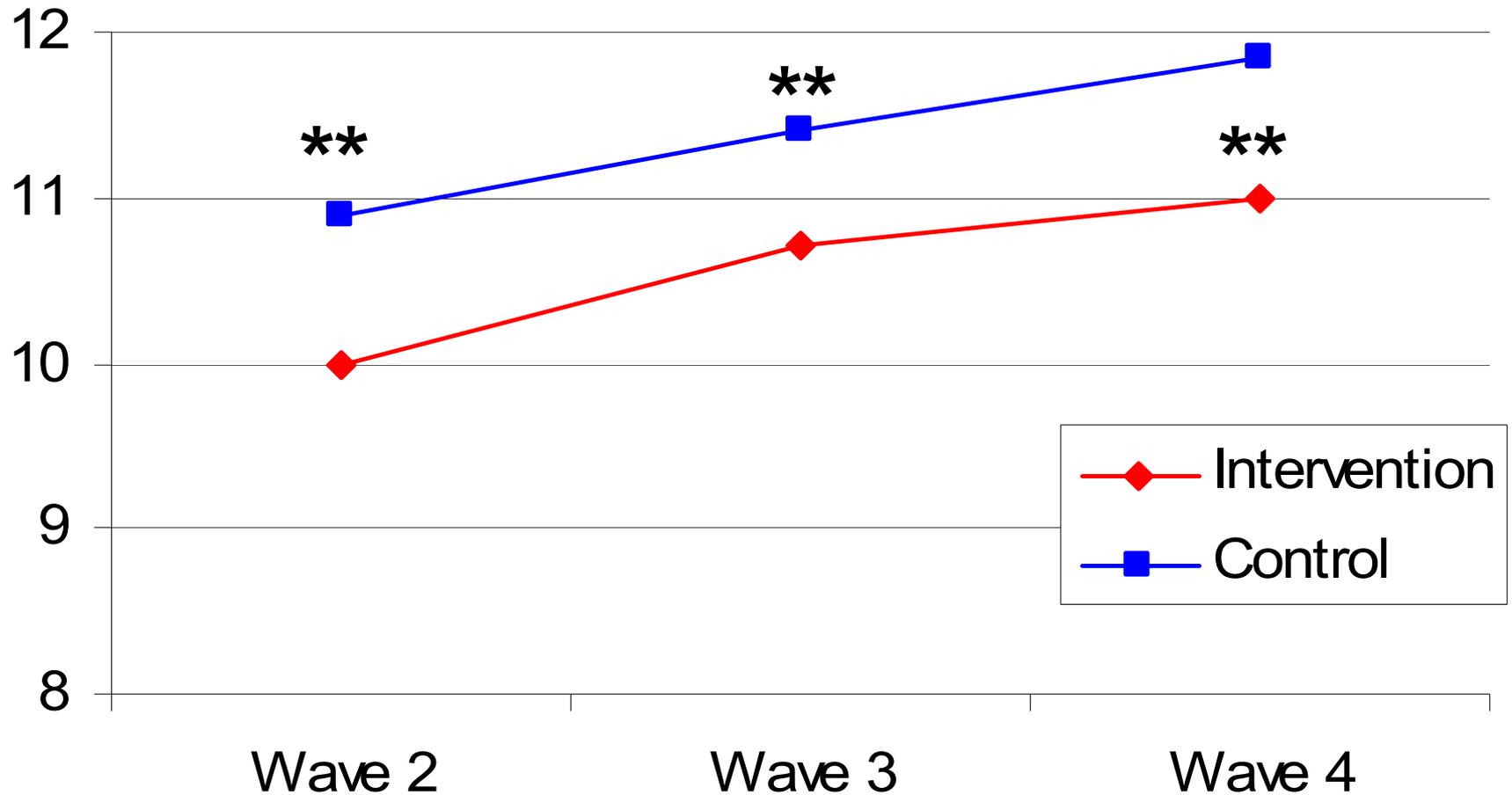
Number of Teen Passengers Allowed



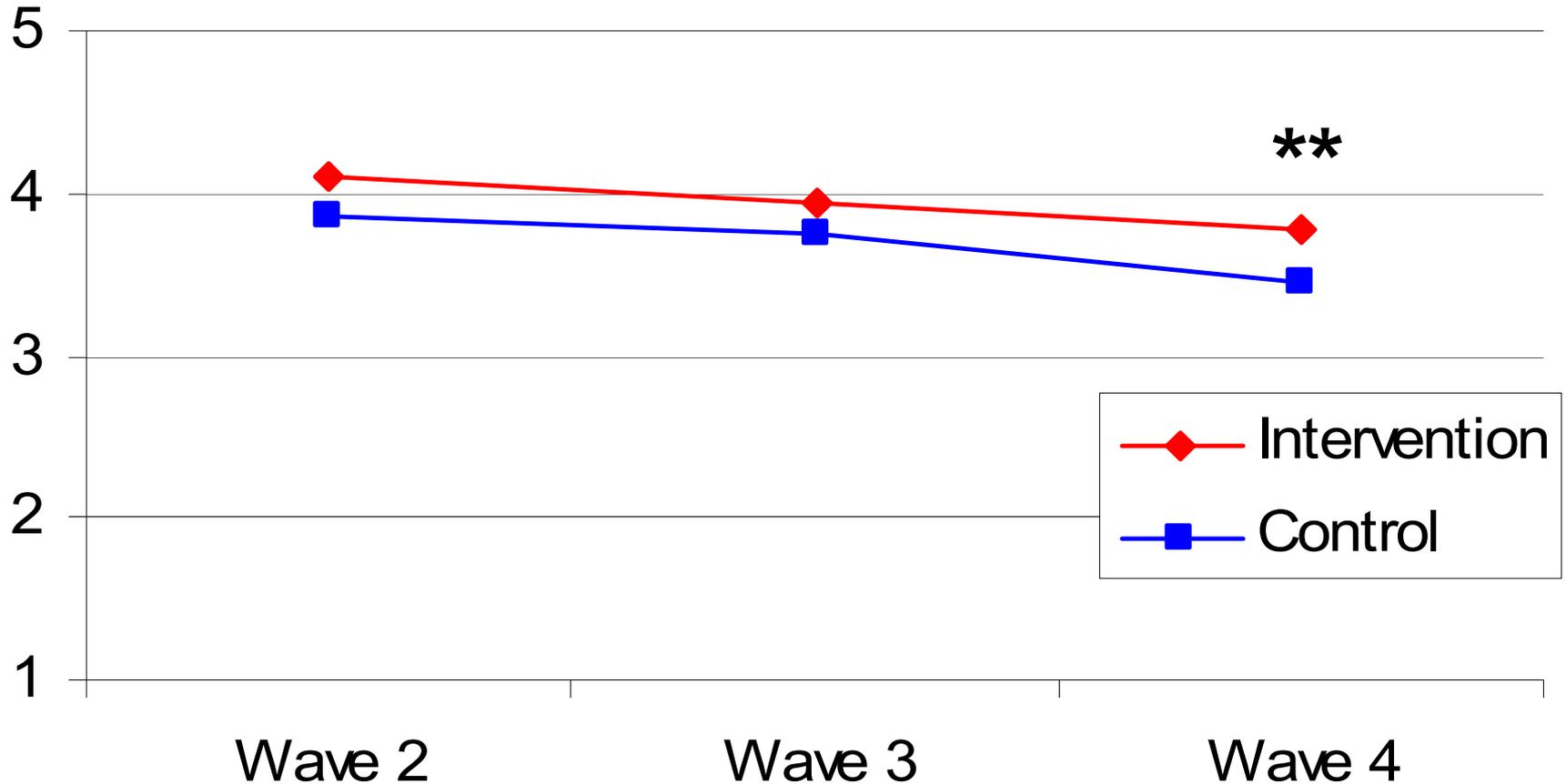
Weekday Nighttime Driving Restriction



Weekend Nighttime Driving Restriction



Likelihood Parents Would Reduce Driving Privileges



Driving Outcomes at 6 months (Wave 4)

	Intervention <i>m (sd)</i>	Control <i>m (sd)</i>	<i>p</i>
Overall High Risk Driving (past week) – 19 items	0.50 (0.5)	0.82 (0.9)	.04
Sped in residential or school zone	1.51 (1.7)	2.20 (2.3)	.09
Drove 10-19 mph over limit	0.31 (0.1)	0.80 (1.8)	.10
Drove 20+ mph over limit	0.02 (0.1)	0.28 (0.7)	.02
Tailgated	0.08 (0.3)	0.37 (1.0)	.07
Went through intersection on yellow	1.79 (2.2)	3.15 (3.9)	.04
Raced another vehicle	0.05 (0.2)	0.24 (0.7)	.07
Drove to show off	0.03 (0.2)	0.15 (0.4)	.08

No difference in number of teens with offenses (15%) or crashes (12%)

Conclusions

- n Showed stronger effects than the efficacy study.**
- n Slightly smaller proportion completed the agreement.**
- n Stronger restrictions.**
- n Restrictions remained in place.**
- n Lasting effects.**

Thank you!!

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