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Evaluation of Kansas and Missouri Rural Seat Belt Demonstrations

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16. Abstract Research has shown seat belt use is lower in rural areas of the United States, which may be one reason fatalities are higher in these areas. NHTSA sponsored two State-level demonstration projects to increase seat belt use in rural areas of Kansas and Missouri. During the study, both Kansas and Missouri had secondary seat belt laws. Kansas used multiple media and enforcement waves, and Missouri employed a month-long media and enforcement campaign. Evaluations demonstrated increases in seat belt usage in many of the rural counties participating in the project, but some counties showed no change or even a decrease in seat belt use. Despite variations by county, Kansas showed an overall increase in seat belt use, going from 61 percent use in the baseline to 70 percent use after the second intervention. Missouri showed increases in belt use in some of the 10 counties; these increases, however, were offset by decreases or no change in the other counties that ultimately limited the observed overall increase in belt use to 2.8 percentage points when data from all counties were combined. Both States also showed increases in exposure to seat belt messages after the campaign activities. In Kansas for example, when asked, <i>"Have you recently read, seen or heard anything about seat belt enforcement?"</i> 78 percent answered "yes" during the baseline survey, and 85 percent answered "yes" for all subsequent surveys combined. Similarly in Missouri, when asked, <i>"In the past month, have you seen or heard about police enforcement focused on seat belt use?"</i> about 51 percent answered "yes" during the baseline while about 62 percent answered "yes" during the post-rural initiative measurement wave. Results from the evaluations support the conclusion that the supplemental efforts of the demonstration projects produced positive results in the target counties and also benefited the total occupant protection programs in the States.					
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TABLE OF CONTENTS

1. Introduction.....	1
2. State Approaches Under the Cooperative Agreements.....	2
3. Observations Across the Two Programs.....	3
3.1 Demonstrated Program Process Benefits.....	3
3.2 Evaluation Processes and Outcomes.....	3
4. Discussion.....	4
References.....	5
Appendix A: Kansas.....	A-1
1. Background.....	A-1
2. Site Selection.....	A-2
3. The KSRI Program.....	A-2
3.1 Media.....	A-3
3.2 Law Enforcement Activities.....	A-4
4. Evaluation Results.....	A-8
4.1 Seat Belt Observations.....	A-8
4.2 Awareness Survey.....	A-11
Appendix B: Missouri.....	B-1
1. Background.....	B-1
2. Site Selection.....	B-1
3. The MRI Program.....	B-3
3.1 Media.....	B-4
3.2 Law Enforcement Activities.....	B-5
4. Evaluation Results.....	B-6
4.1 Seat Belt Observations.....	B-6
4.2 Awareness Survey.....	B-6

1. Introduction

In recent years, NHTSA has begun to place greater emphasis on increasing seat belt use in rural America. This is in large part due to analyses of crash data showing that an inordinately large proportion of fatalities occur on rural roads and seat belt observation data shows that drivers on rural roads wear seat belts less often than drivers in urban areas (NHTSA, 2006). NHTSA has been addressing the problem with targeted seat belt programs that focused specifically on rural drivers, such as the *Great Lakes Region-Wide Rural Seat Belt Initiative* (Nichols et al., 2009a) and the *Buckle Up in Your Truck Campaign* (Nichols et al., 2009b). Other programs tested innovative approaches to increasing seat belt use in States that were largely rural (e.g., Kentucky, North Dakota, Wyoming, Mississippi, Idaho). Each of these initiatives applied NHTSA's high-visibility enforcement (HVE) model to increase general deterrence among rural drivers by using media campaigns and waves of enforcement to increase the perceived likelihood of receiving a citation for driving unbelted. Independent evaluations showed these programs were often effective at increasing seat belt use, even in States with secondary seat belt laws (Blomberg, Thomas, & Cleven, 2008, 2009).

Building on the HVE model, NHTSA awarded separate cooperative agreements to Kansas and Missouri to address low belt use in rural counties in each State. Under these agreements, each State developed an HVE program using countermeasures previously shown to increase seat belt use in rural areas. Each State was also responsible for hiring an independent evaluator to conduct an evaluation of its program.

This report summarizes the activities and results of these two demonstration projects intended to increase seat belt use in rural areas of Kansas and Missouri. Although Kansas and Missouri share a border, the two projects were independently conceived and operated. Each State conducted its own media efforts and used different enforcement strategies. The evaluations included measurements of program awareness and observed seat belt use before and after program implementation. Each evaluator also conducted a process evaluation that included collecting information on media and enforcement activities that were part of the program. Dunlap and Associates, Inc., compiled the results of each State's evaluation to produce this report.

Individual appendices present case studies that describe the processes used and outcomes achieved in each State. As appropriate, each appendix describes how the specific State identified traffic safety problems, how the demonstration project related to the State's *Click It or Ticket* (CIOT) program, the countermeasures selected for the program, the methods used to evaluate the program, and the evaluation results. The following sections provide brief summaries of the information found in the appendix for each State.

2. State Approaches Under the Cooperative Agreements

Kansas and Missouri conducted their seat belt programs and evaluations independent of one another despite sharing a border. Each State followed the CIOT model and used enforcement and public education as the core of their interventions, but the overall approaches were substantially different. Brief summaries of each program's approach are below:

- **Kansas.** The Kansas Rural Initiative (KSRI) began in May 2009 and consisted of five installments of media and enforcement in the selected rural areas. Each campaign included a week of paid media followed by enforcement and media the next week. The State committed funds from the rural initiative for three of those installments. The other two periods were covered by funding from CIOT and another Thanksgiving enforcement effort. Ten counties in Southeast Kansas were selected: Woodson, Allen, Bourbon, Wilson, Neosho, Crawford, Montgomery, Labette, Cherokee, and Cowley. The southeast part of the State had a history of low belt use and qualified as a “rural” section of the state. Four of the counties selected for this rural initiative were part of the annual Kansas seat belt survey and had consistently lower belt use rates than the State average. Over the duration of the project, 34 of the 36 law enforcement agencies in the area, plus the Kansas Highway Patrol, mounted increased seat belt patrols.
- **Missouri.** The Missouri Rural Initiative (MRI) began in April of 2009 and included annual CIOT activities in that Spring followed by one major, month-long media and enforcement blitz in October 2009 in the rural areas. The evaluation encompassed those activities plus the 2010 Sprint CIOT campaign. The MRI included 10 counties in the southwestern part of the State: Barry, Christian, Greene, Jasper, Lawrence, McDonald, Newton, Stone, Taney, and Webster. Three of Missouri’s selected counties were included in their annual statewide seat belt survey. Two of those three actually had belt use at or above the statewide estimate, but each county averaged 21.4 unrestrained fatalities per year for the 2005-2007 reporting period compared to the statewide average of 14.6. Thirty-seven law enforcement agencies participated in the month-long effort.

Thus, Kansas used an approach that included five media and enforcement waves each covering a 2-week period. Missouri conducted a month-long media and enforcement effort in the fall in addition to annual CIOT activities during the Memorial Day holiday periods. The sections below provide brief summaries of the evaluation efforts and outcomes in each State.

3. OBSERVATIONS ACROSS THE TWO PROGRAMS

3.1 Demonstrated Program Process Benefits

The activities and results in the two States highlighted the benefits of the demonstration project approach. For example:

- In Kansas
 - The KSRI program included over 20 agencies that did not normally participate or had participated very little in previous seat belt enforcement efforts.
 - The 13 participating law enforcement agencies that could provide citation data for the year before the KSRI saw more than a five-fold increase in the number of citations and warnings issued.
 - The media campaigns enlisted the support of local television and cable channels in the target counties that might not have carried seat belt safety messages from the national CIOT campaign.

- In Missouri
 - A total of 1,504 seat belt violations were issued, and 10,526 stops were made during the month-long intervention.
 - The MRI project recruited agencies that would normally not have participated in Missouri CIOT activities. For the May 2009 CIOT program before MRI, only 21 agencies in the 10 rural counties participated, but this number increased to 37 during the month-long MRI campaign in October.
 - Media efforts engaged local radio, TV, and movie theaters where seat belt messages would not normally appear.
 - Three municipalities in the MRI area passed primary seat belt ordinances: Merriam Woods (March 2009); Nixa (October 2009); and Willard (December 2009).

3.2 Evaluation Processes and Outcomes

Kansas and Missouri made excellent use of the evaluation process and benefitted from embedding an evaluation as an integral part of their projects. The States implemented a data-driven approach that focused on real problems rather than assumptions of what those problems might be. Both focused on rural areas with low seat belt use as indicated by the statewide surveys and unbelted fatalities as they selected their intervention locations.

Appropriate research designs were included in the projects, and adequate baseline data were collected before any interventions began. Both States employed direct observations of seat belt use in the selected counties as a measure of behavior change and surveys at driver licensing offices to determine driver awareness of the programs.

The results of the public awareness surveys confirmed that the driving public heard seat belt messages as a result of the programs. In Kansas for example, when asked, “*Have you recently read, seen or heard anything about seat belt enforcement?*” 78 percent answered “yes” during the baseline survey, and 85 percent answered “yes” for all subsequent surveys combined. This result was statistically significant.¹ Similarly in Missouri, when asked, “*In the past month, have you seen or heard about police enforcement focused on seat belt use?*” the percent of respondents answering “yes” increased significantly from 51.4 percent during the baseline to 62.0 percent during the measurement wave immediately after the MRI campaign in October. These numbers suggest that although a large percentage of people had already been hearing seat belt messages before the programs started, the programs were still able to increase exposure and awareness.

Seat belt usage increased in many of the rural counties participating in the project in both States, but some counties showed no change or even decreases in seat belt use. Despite variations by county, Kansas showed an overall increase in seat belt use, going from 61 percent use in the target counties during the baseline to 70 percent use after the second intervention. By the final measurement period, belt use had dropped back down to 66 percent in the 10 rural counties. Missouri showed increases in belt use in some of the 10 counties, but not all. The increases were offset by decreases or no change in the other counties that ultimately led to a smaller increase (2.8 percentage points) in observed belt use in Missouri’s 10 county area. It will be important for both States to follow up with law enforcement in the counties where seat belt use decreased to determine why these results might have occurred.

Immediately after the end of this project, Kansas adopted a primary seat belt law for front seat passengers that should serve to increase belt use across the State and in some of the rural counties included in the statewide survey.

4. DISCUSSION

The results from the evaluations suggested that the populations in some rural counties may be more influenced by these types of seat belt initiatives than others. In spite of the differences of approaches and underlying conditions, it is reasonable to conclude that the supplemental efforts of the demonstration projects funded by the cooperative agreements did, in fact, benefit the occupant protection programs in the States. The focused interventions were well planned and executed. Both States appear to have gained appreciation for the use of embedded evaluations and will likely continue to use such evaluation approaches in future efforts.

¹ Statistical significance reported here is by the Pearson chi-square test calculated by the SPSS Version 13 software. When the Pearson chi-square statistic was significant, all pairwise comparisons between measurement waves were tested using the Z test of column proportions. Significance is reported if a two-sided test met the 0.05 level.

REFERENCES

- Blomberg, R. D., Thomas, F. D. & Cleven, A. M. (2008, August). *Increasing seat belt use through State-level demonstration projects: A compendium of initial findings* (Report No. DOT HS 811 014). Washington, DC: National Highway Traffic Safety Administration. Available at <http://ntl.bts.gov/lib/30000/30300/30318/811014.pdf>
- Blomberg, R. D., Thomas, F. D. & Cleven, A. M. (2009, March). *Innovative seat belt demonstration programs in Kentucky, Mississippi, North Dakota, and Wyoming* (Report No. DOT HS 811 080). Washington, DC: National Highway Traffic Safety Administration. Available at [http://www.nhtsa.gov/DOT/NHTSA/Traffic Injury Control/Articles/Associated Files/811080.pdf](http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811080.pdf)
- National Highway Traffic Safety Administration. (2006, December). *Traffic crashes take their toll on America's roads: The need to establish rural seat belt programs* (Report No. DOT HS 810 658). Washington, DC: National Highway Traffic Safety Administration.
- Nichols, J. L., Tison, J., Solomon, M. G., Ledingham, K. A., & Preusser, D. F. (2009a, March). *Evaluation of a rural demonstration program to increase seat belt use in the Great Lakes region* (Report No. DOT HS 811 084). Washington, DC: National Highway Traffic Safety Administration. Available at www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811084.pdf
- Nichols, J. L., Tison, J., Solomon, M. G., Ledingham, K. A., Preusser, D. F., & Siegler, J. N. (2009b, June). *Evaluation of the "Buckle Up in Your Truck" programs*. (Report No. DOT HS 811 131). Washington, DC: National Highway Traffic Safety Administration. Available at [http://www.nhtsa.gov/DOT/NHTSA/Traffic Injury Control/Articles/Associated Files/811131.pdf](http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811131.pdf)

APPENDIX A: KANSAS

1. BACKGROUND

During the study period, Kansas had a secondary seat belt law with a \$30 fine. In June 2010, however, Kansas passed a primary seat belt law for front seat occupants that carried a \$5 fine including court costs. The fine was scheduled to increase to \$10 in 2011. During the secondary law period encompassed by this study, Kansas required enforcement officers to issue a separate traffic citation before the seat belt law could be enforced. That is, a seat belt citation must always accompany another citation for the primary violation. Throughout the entire study, the Kansas seat belt law was a primary violation for anyone under 18 and carried a \$60 fine.

In 2002, Kansas had a statewide seat belt use rate of 61.0 percent. In 2008, the statewide use rate had risen to 77 percent where it stayed through 2009. This increase was primarily attributed to several factors including the implementation of an increased police involvement in the CIOT program, an increased effort by the law enforcement liaison program, and partnership in the *Buckle Up in Your Truck* program. The increase to 82 percent seat belt use in the State for 2010 is largely attributed to the enactment of the primary seat belt law for front seat occupants. Even with the statewide increases in seat belt use and these additional efforts, the lowest belt use continued to be in rural areas.

NHTSA encouraged Kansas to apply for a Section 403 demonstration grant to address the issue of low seat belt usage, especially in rural counties in the State. Table A-1 displays the belt use rates for four of the rural counties included in the annual statewide survey, the State of Kansas as a whole, and the United States for 2002 to 2010. Three of the four rural counties were consistently and substantially below the statewide and national use rates.

Table A-1. Historical Percentage Belted in Four of the Selected Rural Counties

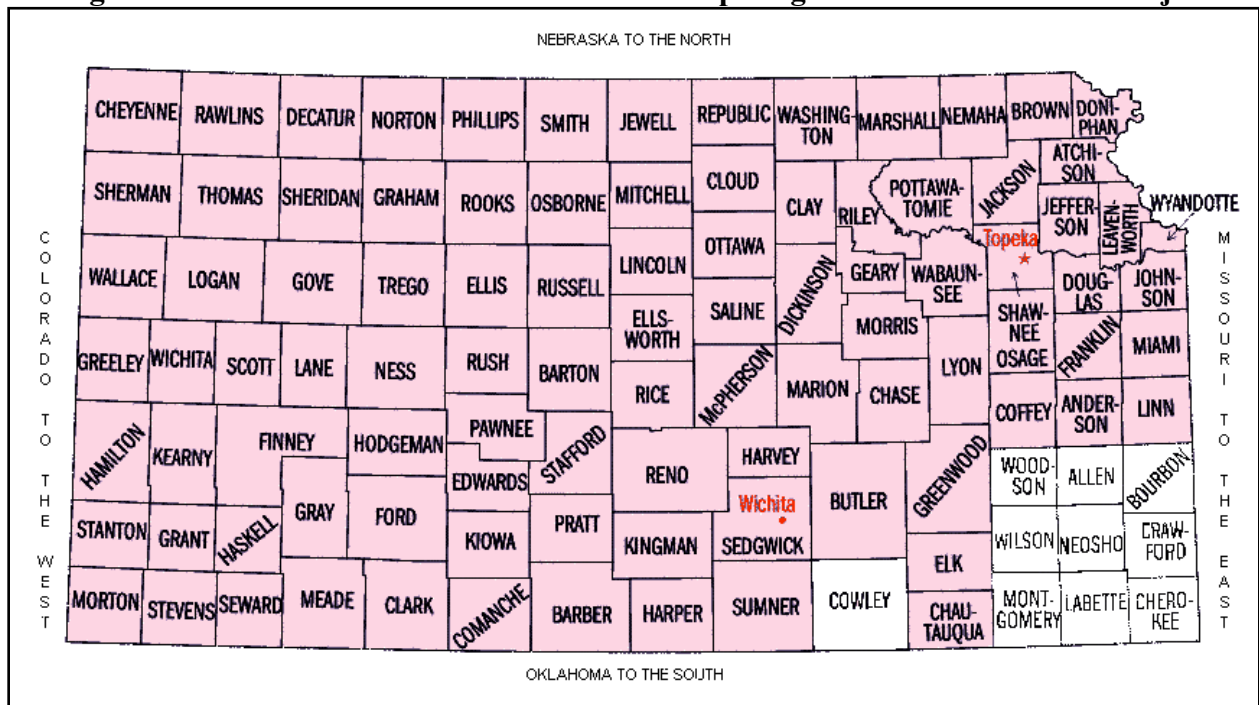
County	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cowley	49	65	65	65	64	62	75	79	73
Crawford	40	48	45	49	46	53	56	55	72
Montgomery	55	60	50	49	51	57	60	62	63
Neosho	48	35	59	63	64	64	69	66	72
Kansas	61	64	68	69	73	75	77	77	82
U.S.	75	79	80	82	81	82	83	84	85

Although these numbers indicated an upward trend in seat belt use across the State and in the rural areas, the rural counties tended to lag well behind the overall State and national use rates. The remainder of this appendix describes the State's program activities to increase seat belt use in rural areas of the State and the evaluation of the impact of these activities.

2. SITE SELECTION

Kansas chose 10 counties in the southeast part of the State for the rural initiative based on seat belt use rates (see Figure A-1). They were Woodson, Allen, Bourbon, Wilson, Neosho, Crawford, Montgomery, Labette, Cherokee, and Cowley. Nine of the 10 counties formed a three-by-three matrix in the southeast corner of the state. Cowley County is along the southern border of the state, the second county west of Montgomery County. These counties were selected based, in part, on the results of the annual statewide seat belt survey, which included four of the counties selected for this rural initiative. The southeast part of the State had a history of low belt use and qualified as a “rural” section of the State.

Figure A-1. Ten Rural Kansas Counties Participating in the Demonstration Project



3. THE KSRI PROGRAM

The Kansas Rural Initiative to increase seat belt use in southeast Kansas began in May, 2009. The KSRI supported three media buys combined with three law enforcement efforts that were independent of other seat belt enforcement activities such as CIOT. The KSRI also funded additional enforcement in the rural counties during CIOT of 2009 and during another selective traffic enforcement (STEP) event in November 2009 that had been planned prior to the start of the KSRI grant. Table A-2 shows the intervention and evaluation schedule.

Table A-2. Intervention and Evaluation Schedule

Intervention Segments	Pre Measures	Week 1 Intervention (Media)	Week 2 Intervention (Enforcement)	Post Measures
1 CIOT	May 4-8, 2009	May 11-24, 2009	May 18-31, 2009	June 8-12, 2009
2 KSRI	June 15-19, 2009	June 22, 2009 - July 3, 2009	July 1-7, 2009	July 13-17, 2009
3 KSRI	Sept 21-25, 2009	Sept 28, 2009 - Oct 6, 2009	Oct 5-11, 2009	Oct 12-16, 2009
4 STEP Event	Nov 9-13, 2009	Nov 16-25, 2009	Nov 23-29, 2009	Dec 7-11, 2009
5 KSRI	March 8-12, 2010	March 15-24, 2010	March 22-28, 2010	April 5-9, 2010

3.1 Media

Each county identified media opportunities in their communities, including both earned and paid media. The paid media budget allocation for the Kansas grant funded the July 2009, October 2009, and March 2010 mobilizations at approximately \$40,000 for each of the three interventions, totaling \$120,000 in paid media money. Kansas achieved over 9,600 TV and radio spots and \$21,000 in bonus media placements for their media buys (Table A-3). Gross rating points (GRPs) were at a very strong level, reaching 90 percent of the target audience at least 9 times.

Table A-3. Media Expenditures by KSRI Campaign Effort

Campaign	Media Bought	GRP	Reach/Freq	Spots	Cost	Bonus Spots	Bonus Value	Total Value
June 2009	TV	457		3252	\$23,980.21		\$4,231.79	\$28,212.00
	Radio	445		457	\$8,672.13		\$1,530.37	\$10,202.50
	Internet				\$3,743.75		\$660.66	\$4,404.41
	Total	902	90%/9	3709	\$36,396.09	1232	\$6,422.82	\$42,818.91
October 2009	TV	2514		3126	\$23,308.70		\$4,113.30	\$27,422.00
	Radio	710		506	\$9,703.21		\$1,712.33	\$11,415.54
	Internet				\$6,800.00		\$1,200.00	\$8,000.00
	Total	3224		3632	\$39,811.91	1232	\$7,025.63	\$46,837.54
March 2010	TV	1208	90%/9	1975	\$29,410.00		\$5,190.00	\$34,600.00
	Radio	390		365	\$13,175.00		\$2,325.00	\$15,500.00
	Internet				\$2,189.60		\$386.40	\$2,576.00
	Total	1598	90%/9	2340	\$44,774.60	1232	\$7,901.40	\$52,676.00
Billing Adjustments From Weeks 1 and 2					-\$5,194.68			-\$5,194.68
Final Amounts		5724	90%/9	9681	\$115,788.12	3696	\$21,349.85	\$137,137.97

Figure A-2 shows the media buys and gross rating points achieved for the KSRI initiative for the September 28 to October 6, 2009, period. The Trozollo Communications Group purchased advertising that included radio, network TV, and cable TV advertising. Media also

included Facebook and Google-based marketing where a total of 628 users clicked through to the Kansas Traffic Safety Resource Office website.

Figure A-2. Example of Media Purchases: September/October 2009

DMA	Vendor	Spots	GRPs	Gross Cost	NET
Flight Dates: 9/28-10/6					
Client: Kansas Department of Transportation					
Pittsburg	KIXQ-FM	63	86.7	\$2,073.00	\$1,762.05
Pittsburg	KSYN-FM	50	65.3	\$1,770.00	\$1,504.50
Pittsburg	KXDG-FM	69	196.8	\$2,229.00	\$1,894.65
Pittsburg	KBZI-FM	48	48.0	\$627.00	\$532.95
Pittsburg	KSEK-AM	69	69.0	\$552.00	\$469.20
Pittsburg	KMXL-FM	69	105.9	\$1,190.04	\$1,011.53
Pittsburg	KKRK-FM	69	69.0	\$1,380.00	\$1,173.00
Pittsburg	KUSN-FM	69	69.0	\$1,594.50	\$1,355.33
Pittsburg	KOAM-TV	20	74.1	\$4,860.00	\$4,131.00
Pittsburg	KODE-TV	23	80.0	\$3,210.00	\$2,728.50
Pittsburg	KFJX-TV	20	57.6	\$2,420.00	\$2,057.00
Pittsburg	KSNF-TV	30	157.0	\$4,345.00	\$3,693.25
Pittsburg	Collective Media	1	1.0	\$970.59	\$825.00
Pittsburg	Google	1	1.0	\$6,029.41	\$5,125.00
Pittsburg	Facebook	1	1.0	\$1,000.00	\$850.00
Pittsburg	NCC Cable-Independence	306	185.5	\$1,000.00	\$850.00
Pittsburg	NCC Cable- Derby	235	136.5	\$999.00	\$849.15
Pittsburg	NCC Cable- Coffeyville	254	217.9	\$1,500.00	\$1,275.00
Pittsburg	NCC Cable- Carl Junction	189	135.0	\$1,003.00	\$852.55
Pittsburg	NCC Cable- Fort Scott	202	134.8	\$1,000.00	\$850.00
Pittsburg	NCC Cable- Iola	522	374.0	\$1,680.00	\$1,428.00
Pittsburg	NCC Cable- Parsons	419	308.2	\$1,210.00	\$1,028.50
Pittsburg	NCC Cable- Chanute	407	302.6	\$1,198.00	\$1,018.30
Pittsburg	NCC Cable- Pittsburg	499	350.8	\$2,997.00	\$2,547.45
Grand Total				\$46,837.54	\$39,811.91

The May 2009 intervention coincided with the CIOT nationwide campaign, and the November intervention was a STEP effort with 11 participating agencies targeting drivers during the Thanksgiving holiday period. Residents in the rural areas of Kansas could have seen or heard some national media during these two periods, but there was no additional media from the KSRI program during these times. Seat belt observations and public awareness surveys were implemented during all five waves.

3.2 Law Enforcement Activities

One of the State Law Enforcement Liaisons enlisted as many law enforcement agencies in the target counties to participate in the rural initiative as possible. The Kansas Highway Patrol (KHP) and 34 local law enforcement agencies participated in the three KSRI core enforcement phases of the project. Only one law enforcement agency did not participate in the effort (Yates Center). All agencies conducted enforcement focused on issuing seat belt citations and warnings; however, the grant only directly funded the KHP overtime. The remaining agencies earned equipment incentives based on the level of effort expended during the KSRI initiatives.

The agencies that participated in the incentive program were divided into three competitive groups based on the size of the populations they served. They earned points for occupant protection citations and written seat belt warnings that were weighted by population so that every agency within a group was on common ground to start. The point system emphasized

citations over written warnings with seat belt and child safety seat citations receiving twice the weight of warnings. Traffic safety equipment awards were established for each rank within a group. The final rankings were based on the cumulative points earned through all three KSRI campaigns.

Eighteen law enforcement agencies in the rural areas participated in the 2009 CIOT campaign. For comparison purposes, Table A-4 shows the number of seat belt, child safety seat, speeding, other violations, and DUI arrests during the CIOT campaign for both 2008 and 2009 in the rural counties of interest.

Table A-4. Total Hours Worked and Citations Issued by Participating Agencies for CIOT 2008 and 2009

Year	Overtime Hours	Citations Issued					
		Speed	Other	DUI	Seat belt	Child Safety Seat	Total
2008	808.16	315	346	7	493	118	1279
2009	774.84	324	381	1	427	58	1191

Table A-5 displays the total number of citations and warnings issued during the three primary enforcement periods funded by KSRI. This table includes citations issued by all participating agencies. In all three of these waves, Kansas law enforcement issued more seat belt warnings than citations, and increased the total number of both citations and warnings during the third wave in March, 2010.

Table A-5. Citations/Warnings Issued by All Participating Agencies for KSRI Periods

	July 1-7, 2009 & July 7-13, 2009	Oct 5-11, 2009	Mar 22-28, 2010
Seat Belt Citations	325	226	498
Seat Belt Warnings	464	488	637
Child Safety Seat Citations	90	53	126
Speeding Citations	729	585	614
DUI Arrests	27	20	22
Total	1635	1372	1897

For comparison purposes, 12 local law enforcement agencies and KHP provided citation data from the same time periods a year prior to the KSRI interventions. As shown in Table A-6, the 13 agencies issued substantially more citations and warnings during the KSRI periods than for the same time periods a year before. Collapsing all three periods together yielded 309 citations and warnings from the previous year compared to 1,650 citations and warnings during the three KSRI core interventions. This is more than a five-fold increase in the number of citations and warnings issued during the KSRI initiatives compared to the same weeks from the prior year.

Table A-6. KSRI Citations Issued Compared to the Same Time Period a Year Ago.

	July 1-7, 2008 & July 7-13, 2008	July 1-7, 2009 & July 7-13, 2009		Oct 5- 11, 2008	Oct 5- 11, 2009		Mar 22-28, 2009	Mar 22- 28, 2010
Seat Belt Citations	5	89		9	63		16	155
Seat Belt Warnings	22	120		15	341		20	317
Child Safety Seat Citations	1	35		5	15		3	21
Speeding Citations	60	129		51	176		71	147
DUI Arrests	7	7		18	24		6	11
Total	95	380		98	619		116	651

The change in citation/warning rates for the local police is particularly noteworthy since they were not receiving overtime pay; rather, they were participating in the incentive competition against similar sized agencies across the 10 counties. Table A-7 shows the numbers of citations issued by the 12 local police agencies that provided data for the same time periods the year before KSRI efforts began. Table A-8 shows the numbers of citations issued by these 12 local police agencies during the KSRI initiative. The tables show that the number of seat belt and child safety seat citations quadrupled, and the number of seat belt warnings increased 11-fold. There were also notable increases in speed, equipment, and “other” citations.

Table A-7. Local Police Citations Issued for Same Weeks the Year Before.

Agency	Seat Belt Warning	Seat Belt Citation	Child Passenger	DUI	Speed	Equipment	Insurance	License/Registration	Other	Total Cites
Ark City	0	1	1	3	14	12	8	12	95	146
Caney	0	0	0	1	4	0	4	2	5	16
Coffeyville	0	1	0	2	24	1	4	16	28	76
Columbus	7	0	0	0	11	0	0	0	1	12
Crawford	0	10	0	3	1	0	5	10	7	36
Fort Scott	0	2	0	6	39	15	11	20	36	129
Frontenac	0	0	0	0	39	0	3	4	3	49
Galena	49	9	6	2	15	1	4	5	6	48
Humboldt	0	0	0	0	11	1	3	4	3	22
Iola	0	0	0	3	10	0	7	9	12	41
Neodesha	0	14	4	1	8	10	8	12	9	66
Parsons	0	4	2	0	0	9	13	12	50	90
Total	56	41	13	21	176	49	70	106	255	731

Table A-8. Local Police Citations Issued During KSRI Periods.

Agency	Seat Belt Warning	Seat Belt Citation	Child Passenger	DUI	Speed	Equipment	Insurance	License/Registration	Other	Total Cites
Ark City	17	43	9	0	12	18	11	3	37	133
Caney	5	0	0	0	0	1	0	1	4	6
Coffeyville	105	15	1	2	45	3	5	8	3	82
Columbus	185	29	16	7	74	8	7	19	61	221
Crawford	52	20	10	3	93	56	18	23	133	356
Fort Scott	12	17	3	0	23	6	3	15	13	80
Frontenac	129	13	1	0	6	26	6	3	12	67
Galena	80	14	9	0	43	0	1	10	12	89
Humboldt	6	14	2	0	29	4	5	13	8	75
Iola	2	6	1	6	28	8	20	15	46	130
Neodesha	10	5	1	0	8	0	0	0	4	18
Parsons	11	3	0	0	3	3	1	0	9	19
Total	614	179	53	18	364	133	77	110	342	1276

These results suggest that the incentive program led to substantial increases in seat belt citations and warnings by the local law enforcement agencies. It also highlights the preference of the local law enforcement agencies for issuing warnings rather than citations when seat belt use was the infraction in a secondary law enforcement environment. There was a substantial overall increase in the amount of enforcement time dedicated to increasing seat belt use in the 10 counties.

4. EVALUATION RESULTS

Two additional evaluation components were included to assess the effectiveness of the KSRI project. Driver and passenger seat belt use was observed before and after each campaign period following the same protocol that Kansas used for its annual statewide seat belt survey. The second component of the evaluation was a self-report survey distributed at the Department of Motor Vehicle Driver's License Examiners' Offices.

4.1 Seat Belt Observations

The seat belt observation protocol was the same used by the State of Kansas for the annual, NHTSA-approved seat belt survey. Three observers from the pool of regular observers were selected based on availability and proximity to the measurement locations. As with the regular annual study, observers noted the driver's and front, outboard passenger's belt use. Observations were conducted before any program activities took place and again after each of the five enforcement campaigns, including the three KSRI efforts, CIOT, and November STEP activities. Weather delayed the observations after the first intervention, and a single set of observations served as the post-CIOT measures and the first pre-KSRI measure.

Table A-9 provides the locations of the selected observation sites. There were five sites per county. Each of the 10 counties selected is roughly a square, with a State, or U.S. highway running north-south, and another running east-west. Four of the sites in each county were near the county line on each of the U.S. or state highways, and the observer recorded belt use as the

traffic exited the county. A fifth site was selected at the crossroads of the U.S. and State highways in the town where they crossed. This allowed the study to have four rural sites, and one "in-town" site per county. Some of these areas are quite rural with very low traffic volume. Table A-9 provides the exact locations of each observation site in each county.

As shown in Table A-10, the seat belt use rates varied notably from observation to observation in each county. As evidenced in Figure A-3, however, the overall trend line slopes upward over the seven waves of observations. Overall, seat belt use started at 61 percent (weighted), and the largest increase in belt use appeared after the first KSRI campaign when belt use rose to 70 percent. The belt use rate then followed an up and down pattern, but ended higher than baseline as of April, 2010.

Table A-9. Observation Sites by County

	North	South	Center	East	West
Cherokee	K-7 at County Line, northbound	US-69 at County Line, southbound	Columbus	US-166/400 at County Line, eastbound	US-160 at County Line, westbound
Labette	US-59 at County Line, northbound	US-59 at County Line, southbound	Parsons	US-160 at County Line, eastbound	US-160 at County Line, westbound
Neosho	US-169 at County Line, northbound	US-59 at County Line, southbound	Chanute	K-47 at County line, eastbound	K-47 at County line, westbound
Crawford	K-7 at County Line, northbound	K-7 at County line, southbound	Pittsburg	US-160 at County Line, eastbound	K-47 at County line, westbound
Bourbon	US-69 at County Line, northbound	K-7 at County line, southbound	Fort Scott	US-54 at County Line, eastbound	US-54 at County Line, westbound
Allen	US-169 at County Line, northbound	US-169 at County Line, southbound	Iola	US-54 at County Line, eastbound	US-54 at County Line, westbound
Woodson	US-75 at County Line, northbound	US-75 at County Line, southbound	Yates Center	US-54 at County Line, eastbound	US-54 at County Line, westbound
Wilson	US-75 at County Line, northbound	US-75/US-400 at County Line, southbound	Fredonia	K-47 at County line, eastbound	US-400 at County Line, westbound
Montgomery	US-75/US-400 at County line, northbound	US-75 at County Line, southbound	Independence	US-160 at County Line, eastbound	US-160 at County Line, westbound
Cowley	US-77 at County line, northbound	US-77/US-166 at County Line, southbound	Winfield	US-160 at County Line, eastbound	US-160 at County Line, westbound

Table A-10. Seat Belt Observation Results by County

	Baseline: May 4-8, 2009	Post CIOT/Pre KSRI: June 15-19, 2009	Post KSRI : July 13-17, 2009	Pre KSRI: Sept 21-25, 2009	Post KSRI: Oct 12-16, 2009	Pre Fall STEP: Nov 9-13, 2009	Post Fall STEP: Dec 7-11, 2009	Pre KSRI: Mar 8-12, 2010	Post KSRI: Apr 5-9, 2010
Allen	59%* N=191	60% N=243	65% N=282	57% N=171	57% N=185	58% N=184	56% N=174	61% N=188	61% N=225
Bourbon	40% N=233	58% N=396	65% N=420	65% N=284	68% N=197	62% N=265	65% N=236	68% N=290	71% N=310
Cherokee	60% N=370	59% N=537	67% N=340	59% N=353	57% N=336	69% N=309	62% N=289	64% N=307	65% N=320
Cowley	71% N=641	81% N=635	82% N=605	81% N=548	81% N=559	82% N=709	83% N=592	78% N=658	79% N=569
Crawford	55% N=388	55% N=331	70% N=332	61% N=267	51% N=218	63% N=210	61% N=208	62% N=254	60% N=235
Labette	54% N=199	57% N=254	64% N=247	64% N=215	61% N=178	58% N=177	53% N=167	58% N=178	58% N=179
Montgomery	75% N=352	57% N=221	75% N=404	60% N=374	69% N=308	71% N=307	69% N=332	67% N=318	72% N=284
Neosho	57% N=194	62% N=225	59% N=247	66% N=131	59% N=165	63% N=183	44% N=174	61% N=173	56% N=195
Wilson	62% N=242	63% N=164	65% N=261	79% N=354	69% N=307	71% N=289	64% N=256	69% N=290	65% N=219
Woodson	52% N=185	65% N=167	73% N=149	60% N=159	60% N=159	63% N=130	57% N=145	41% N=128	65% N=164
Average¹	58%	62%	69%	65%	63%	66%	62%	64%	67%
Raw %²	61%	63%	70%	67%	66%	70%	66%	66%	67%
Weighted %³	61%	62%	70%	66%	64%	68%	64%	65%	66%
Total N	2,995	3,173	3,287	2,856	2,612	2,763	2,573	2,784	2,700

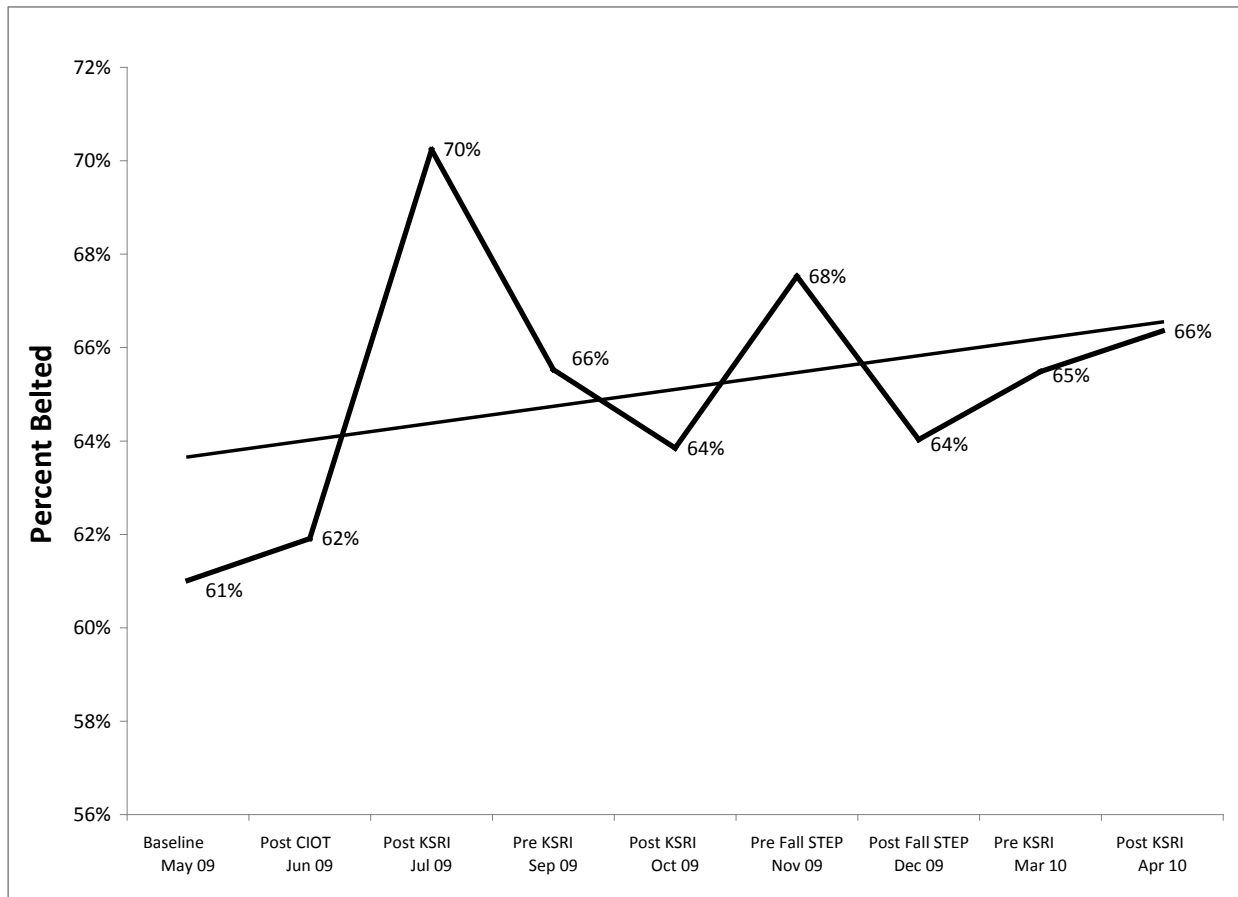
*Percentage of observed drivers who were belted. N is total count of drivers observed.

1. Average of belt use percentages from the ten counties.

2. Raw % combines all observations across all counties.

3. Weighted % is adjusted to reflect county population with larger population county data providing more weight.

Figure A-3. 10-county Belt Use (Weighted %)



4.2 Awareness Survey

To assess changes in driver awareness of the program and self-reported behaviors, Kansas conducted a paper-and-pencil survey in driver licensing offices in each of the 10 intervention counties. The single-page survey appears in Figure A-4. It included items covering demographics, seat belt use, exposure to media, and exposure to seat belt enforcement. Evaluators administered a total of six waves of surveys over the course of the study: a baseline before any program activities; subsequent survey rounds during the second week of the intervention activities when media and enforcement activities were ongoing; and a final wave after the entire program was completed. The surveying in the field lasted for two weeks during each wave and collected a total of 1,909 responses. The start dates of these measures were:

- May 22, 2009 – Baseline (N=430),
- July 1, 2009 - Post CIOT/During KSRI (N=260),
- October 4, 2009 - During 2nd week of KSRI (N=329),
- November 23, 2009 - During Fall STEP (N=316),
- March 22, 2010 - During 2nd week of KSRI (N=294), and
- April 5, 2010 - Post KSRI (N=280).

Figure A-4. Awareness Survey

Kansas Department of Motor Vehicles/Kansas Department of Transportation Safety Survey

The Kansas Department of Motor Vehicles is assisting the Kansas Department of Transportation in a study about highway safety in Kansas. Your answers to the following questions are voluntary and anonymous. Please complete the survey and then put it in the drop box.

Your sex: Male Female

Your Zip Code: _____

Your age: Under 18 18-20 21-25 26-34 35-49 50-59 60 Plus

When you pass a driver stopped by the police in the daytime, what do you think the stop was for? (Check 1 only)

Speeding Seat Belt Violation Drunk Driving Reckless Driving Registration Violation Other _____

When you pass a driver stopped by the police at night, what do you think the stop was for? (Check 1 only)

Speeding Seat Belt Violation Drunk Driving Reckless Driving Registration Violation Other _____

What type of vehicle do you drive most often? (Check 1 only)

Passenger car Pick-up truck Semi truck SUV Mini-van Full-van Other

About how many miles did you drive last year? (Please give your best estimate) _____ miles

How often do you use seat belts when you drive or ride in a car, van, SUV or pick-up?

Always Nearly always Sometimes Seldom Never

Have you increased your seat belt use recently? Yes No If yes, Why? _____

How strictly do you think the police enforce the Kansas seat belt law?

Very strictly Somewhat strictly Not very strictly Rarely Not at all

Have you ever been stopped by the police for not wearing a seat belt? (Check all that apply)

Yes, I got a ticket Yes, I got a warning No

Have you recently noticed increased enforcement of the seat belt law?

Yes, I got a ticket Yes, I got a warning Yes, I noticed but wasn't stopped No

Have you recently read, seen or heard anything about seat belt enforcement? Yes No

If yes, where did you see or hear about it? (Check all that apply)

Newspaper Radio TV Road sign Brochure Police Billboard Poster Internet Other

If yes, what did it say? _____

Do you know the name of any seat belt campaign in Kansas? (Check all that apply)

No Excuses, Buckle Up! Buckle Up Kansas
 Click It – Don't Risk It Buckle Those You Love
 Click It or Ticket! Don't be a Dummy, Buckle Up! None

How often do you think you would get a ticket in Kansas if you did not wear your seat belt while driving?

Always Nearly always Sometimes Seldom Never

What is the fine for failing to wear a seat belt in Kansas? \$ _____

Because southeast Kansas is sparsely populated, only 2 of the 12 driver licensing offices in the 10 counties were open Monday to Friday. Six were open 4 days per week, and 4 were open only 2 days per week. Table A-11 shows the survey return rates across all licensing offices. In general, about 32 percent of the surveys distributed by Kansas were completed and returned for analysis.

Table A-11. Awareness Survey Return Rates for All Offices Combined

Kansas Survey Return Rate			
Wave	Completed	Distributed	Return Rate
1	430	1,680	26%
2	260	840	31%
3	329	840	39%
4	316	840	38%
5	294	840	35%
6	280	840	33%
Total	1,909	5,880	32%

Given the low return rates at some offices, the data were collapsed across all survey sites for the analyses. The balance of this section provides highlights from these survey analyses.

The demographics items showed no meaningful changes over time. Across all measurement waves, 52.8 percent of respondents were female. For vehicle most driven, 42.8 percent indicated passenger car, 29.2 percent pickup truck, 15.1 percent SUV, and the remainder were distributed among mini-van, semi-truck and full-van. The age distribution across all measures was 4.1 percent under 18 years old; 5.8 percent 18 to 20 years old; 12.7 percent 21 to 25 years old; 14.4 percent 26 to 34 years old; 29.7 percent 35 to 49 years old; 14.2 percent 50 to 59 years old; and 19.1 percent for 60 and older.

When asked, “*How often do you use seat belts when you drive or ride in a car, van, SUV, or pickup?*” the percentage of people saying “*always*” increased from 64.7 percent in the baseline to a high of 67.9 percent, but the change was not statistically significant ($p > 0.05$).²

Another question asked, “*Have you increased your seat belt use recently?*” Across all waves, 36.7 percent of respondents said “*yes*,” but there were no significant changes over time. When asked, “*How strictly do you think the police enforce the Kansas seat belt law?*” about 33 percent each wave said “*very strictly*.” There were no significant changes over time in responses pertaining to police strictness. When asked, “*Have you ever been stopped by the police for not wearing a seat belt?*” across all measurement waves 7.6 percent said “*Yes, I got a ticket*,” and 5.1 percent said “*Yes, I got a warning*.” There were no significant changes over time for this item.

An item asked, “*Have you recently noticed increased enforcement of the seat belt law?*” There was an increase in the percentage of people who said “*Yes, I noticed but wasn’t stopped*”

² Statistical significance reported here is by the Pearson chi-square test calculated by the SPSS Version 15 software. When the Pearson chi-square statistic was significant, all pairwise comparisons between measurement waves were tested using the Z test of column proportions. Significance is reported if a two-sided test met the 0.05 level.

from baseline (37.8%) to after CIOT (46.7%), but the change was not statistically significant ($p > 0.05$). The percentage in this category did, however, stay above baseline for the remainder of the survey waves.

There was a statistically significant increase, $\chi^2(5, 1874) = 26.31 p < 0.001$, in the percentage of people who reported that they had recently read, seen, or heard anything about seat belt enforcement from the baseline (77.9%) to after CIOT in July 2009 (92.2%) as shown in Figure A-5. The Figure also shows that awareness levels remained elevated in all subsequent waves of measurement although they were not significantly ($ps > 0.05$) higher than the baseline.

Respondents were asked where they had read, seen, or heard the message. Only people who indicated “yes” to the previous question should have provided a response to this item, but a number of people who said “no” still indicated they had seen some form of media. As such, the individual media types were analyzed based on the total sample. This approach provides a look at the overall exposure levels of each media type based on the full number of respondents. TV, radio, newspapers, road signs, and billboards accounted for most of the exposure. TV (Figure A-6) and radio (Figure A-7), showed statistically significant increases in exposure above the baseline for the wave collected after CIOT in July 2009 ($ps < 0.05$). As with the overall measure shown in Figure A-5, however, the percentages of respondents mentioning each media type dropped somewhat after the July 2009 measure and were not significantly ($ps > 0.05$) different than the baseline value even though they tended to remain above it. The distribution over time for newspapers (Figure A-8) was statistically significant, $\chi^2(5, 1909) = 12.10 p < 0.05$, but none of the paired comparisons themselves were significant even though the baseline to July 2009 difference appears quite large and consistent with the changes in TV and radio.

Figure A-5. Read/Seen/Heard Anything About Enforcement

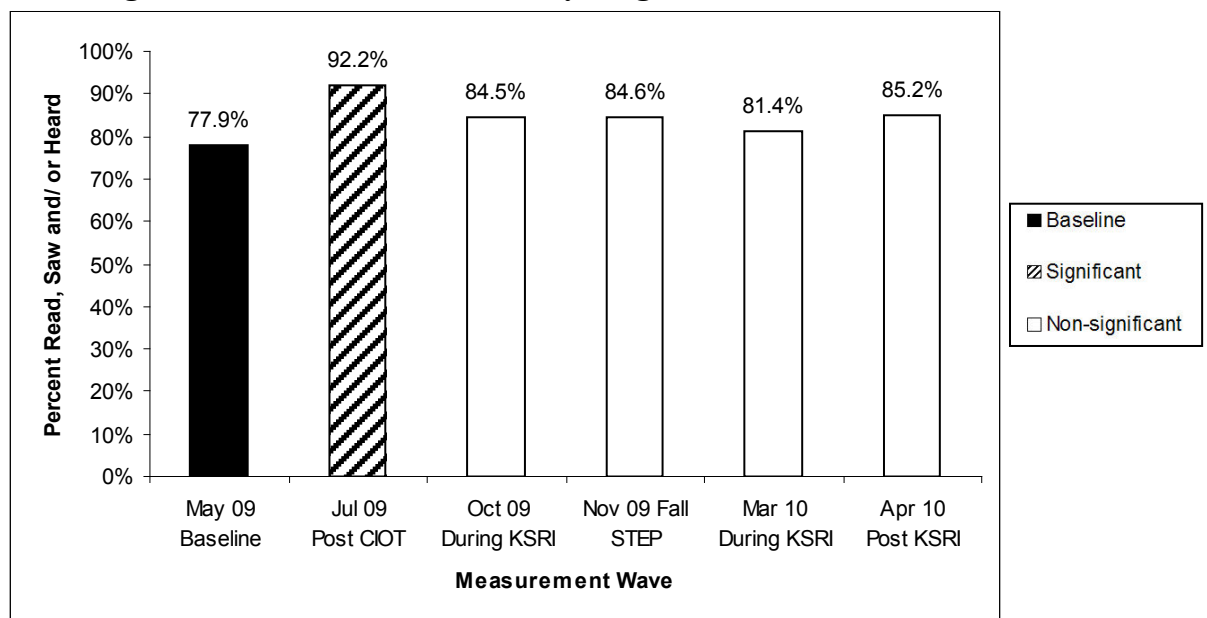


Figure A-6. Saw Message on TV

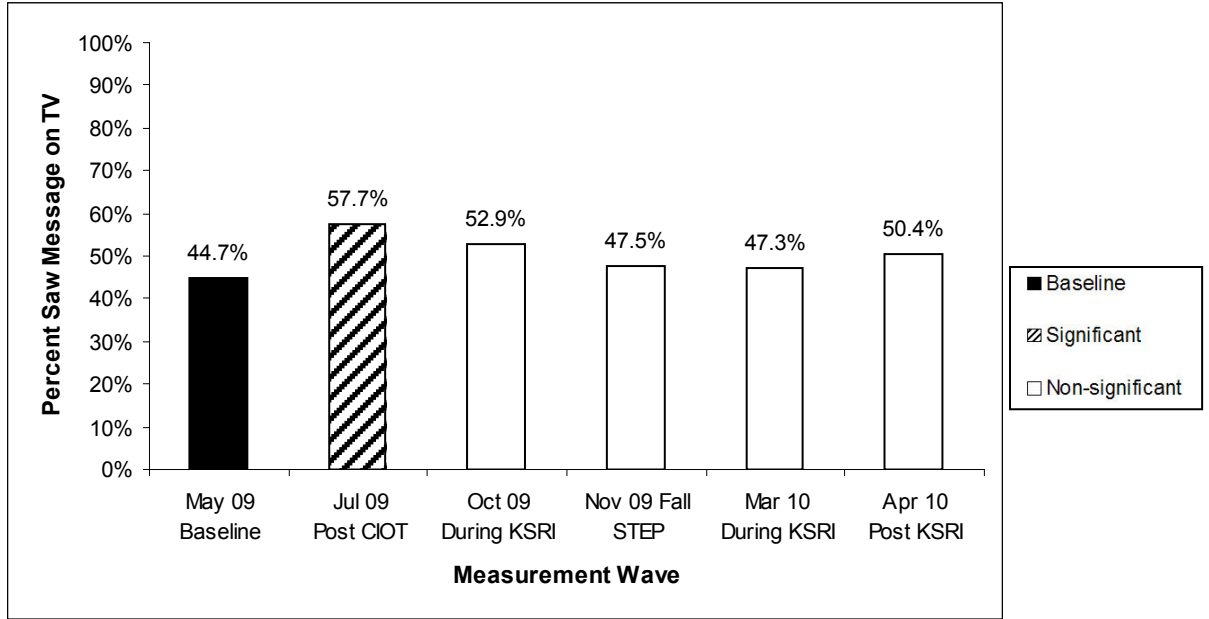


Figure A-7. Heard Message on Radio

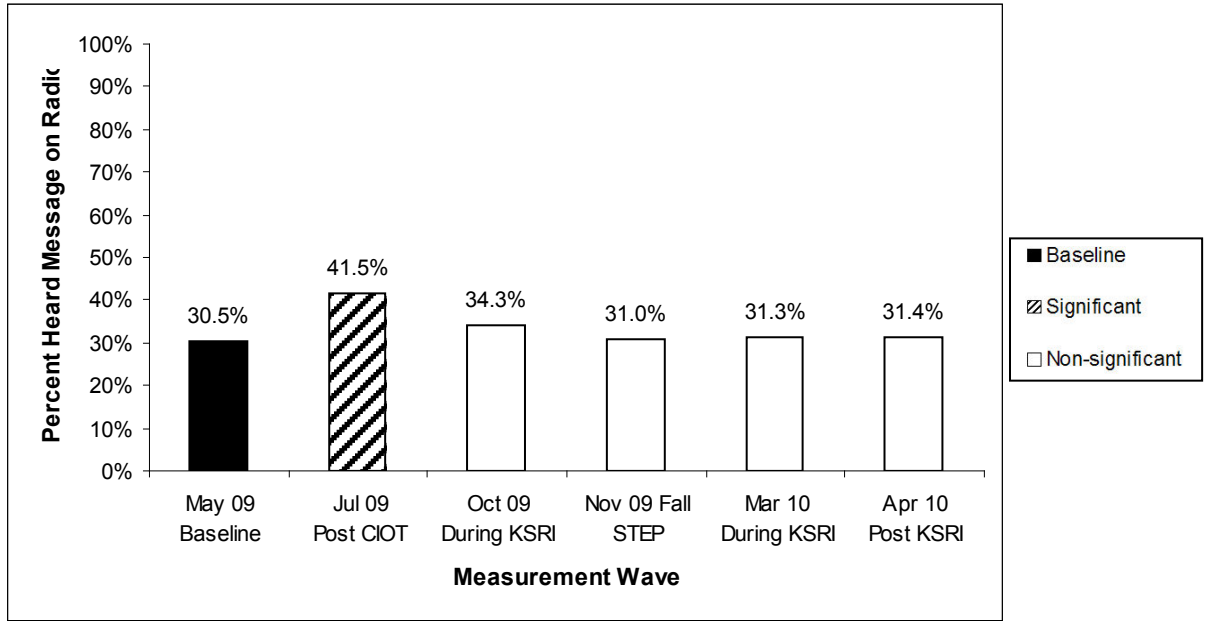
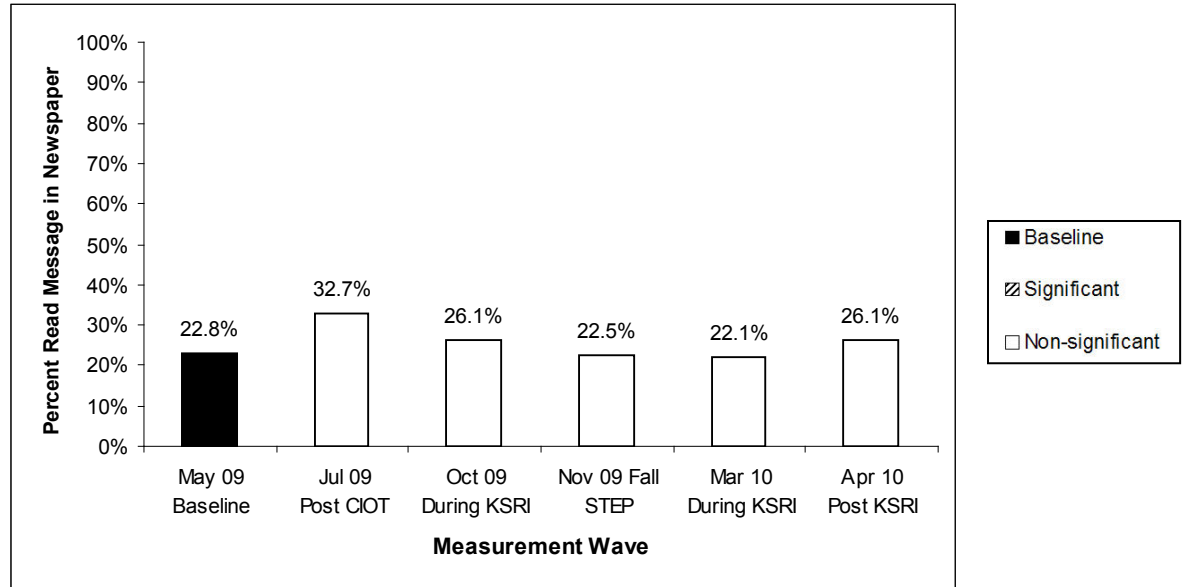
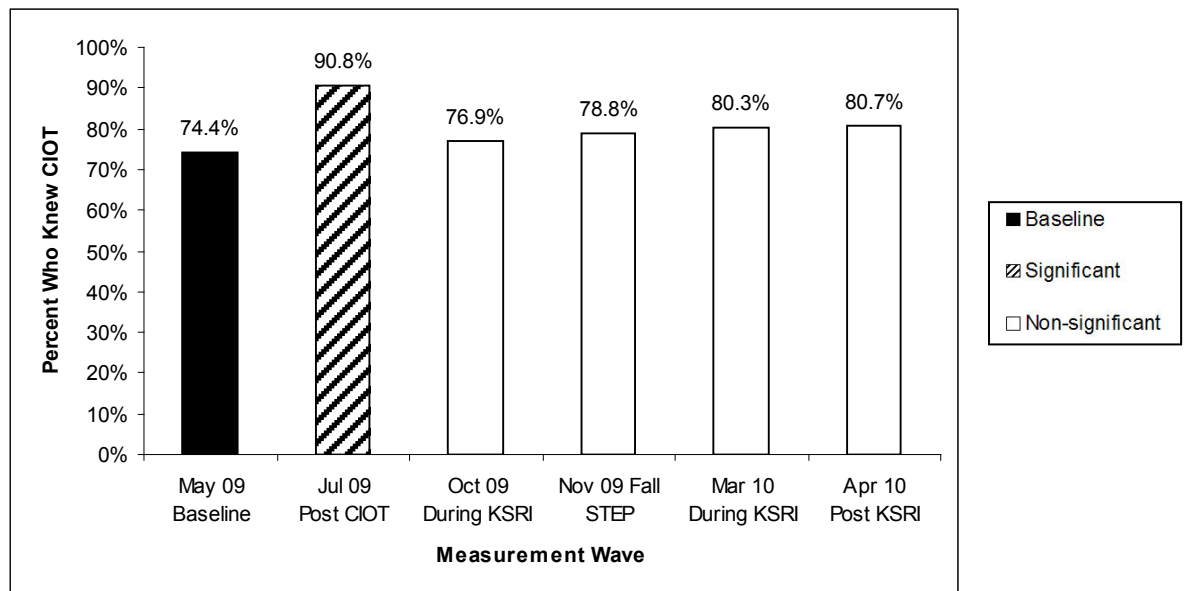


Figure A-8. Read Message in Newspaper



Click It or Ticket was the most recognized seat belt campaign name and showed a statistically significant increase, $\chi^2 (5, 1909) = 29.01 p < 0.001$, in exposure after the CIOT campaign in July 2009 when 90.8 percent of the respondents indicated they had heard of the campaign (Figure A-9). Very few people, 5.0 percent overall, knew the fine was \$30 for a seat belt citation. The fine has since changed due to the enactment of the primary seat belt law. When asked, “How often do you think you would get a ticket in Kansas if you did not wear a seat belt while driving?” only 22.9 percent of respondents indicated “always” across all waves combined. There were no significant changes in responses to this item over time.

Figure A-9. Knew Click It or Ticket



APPENDIX B: MISSOURI

1. BACKGROUND

At the time of this project Missouri had a secondary seat belt law with a fine of \$10. The State had a primary law for everyone under the age of 16 (\$25 fine) and for anyone with an intermediate license and their passengers. Missouri had shown improved seat belt usage over the previous 10 years but still remained below the national average. The 2008 Statewide Seat belt Survey posted a 76 percent usage rate, improving 16 percentage points over 1998. However, the usage rate reached a plateau in 2004 after which it remained between 75 percent and 77 percent. During these years, the seat belt use rate was higher in urban areas than rural areas of the State.

NHTSA encouraged Missouri to apply for a Section 403 demonstration grant to address the issue of low seat belt usage, especially in rural counties in the State. Table B-1 displays the belt use rates for three of the rural counties included in the annual statewide survey, Missouri as a whole, and the United States for 2005 to 2007. Two of the three rural counties included in the statewide survey actually showed seatbelt use that was higher than the State average. Despite this higher level of usage, the three rural counties averaged 21.4 unbelted deaths per year compared to 14.6 per year for the rest of the State.

Table B-1. Historical Seat Belt Use Rates in Three of the Selected Counties

County	2005	2006	2007
Christian	74.6	81.6	78.7
Lawrence	73.9	69.7	73.3
Newton	80.6	80.6	78.5
Missouri	77.4	75.1	77.1
U.S.	82	81	82

In addition to the State's annual CIOT activities, the Missouri Rural Initiative included a month-long media and enforcement intervention in a 10-county area of southwest Missouri. The State's evaluator, the Missouri Safety Center, conducted surveys at driver license renewal offices and direct observations of seat belt use to assess the impacts of the rural initiative.

2. SITE SELECTION

The State used available seat belt use and fatality data to select the counties for the project. The primary reason for selecting the counties was an excessive number of fatalities in the area versus similar rural locations in Missouri. Unbuckled fatalities in the selected area accounted for a higher raw number and percent of deaths compared to the rest of rural Missouri. The area is circumscribed and bordered by large media outlets on either side; Joplin to the West, and Springfield to the East. Missouri is mostly rural, and the lack of availability of local media markets would have made targeted public awareness difficult in other areas of the State. The selection process resulted in the MRI focusing on 10 counties in the southwest portion of the

State. These counties were Barry, Christian, Greene, Jasper, Lawrence, McDonald, Newton, Stone, Taney, and Webster County. The counties were adjacent to one another as shown in Figure B-1. Figure B-2 shows the cluster of unbelted fatalities that occurred in this area.

Figure B-1. Ten Rural Counties Participating in the Demonstration Project

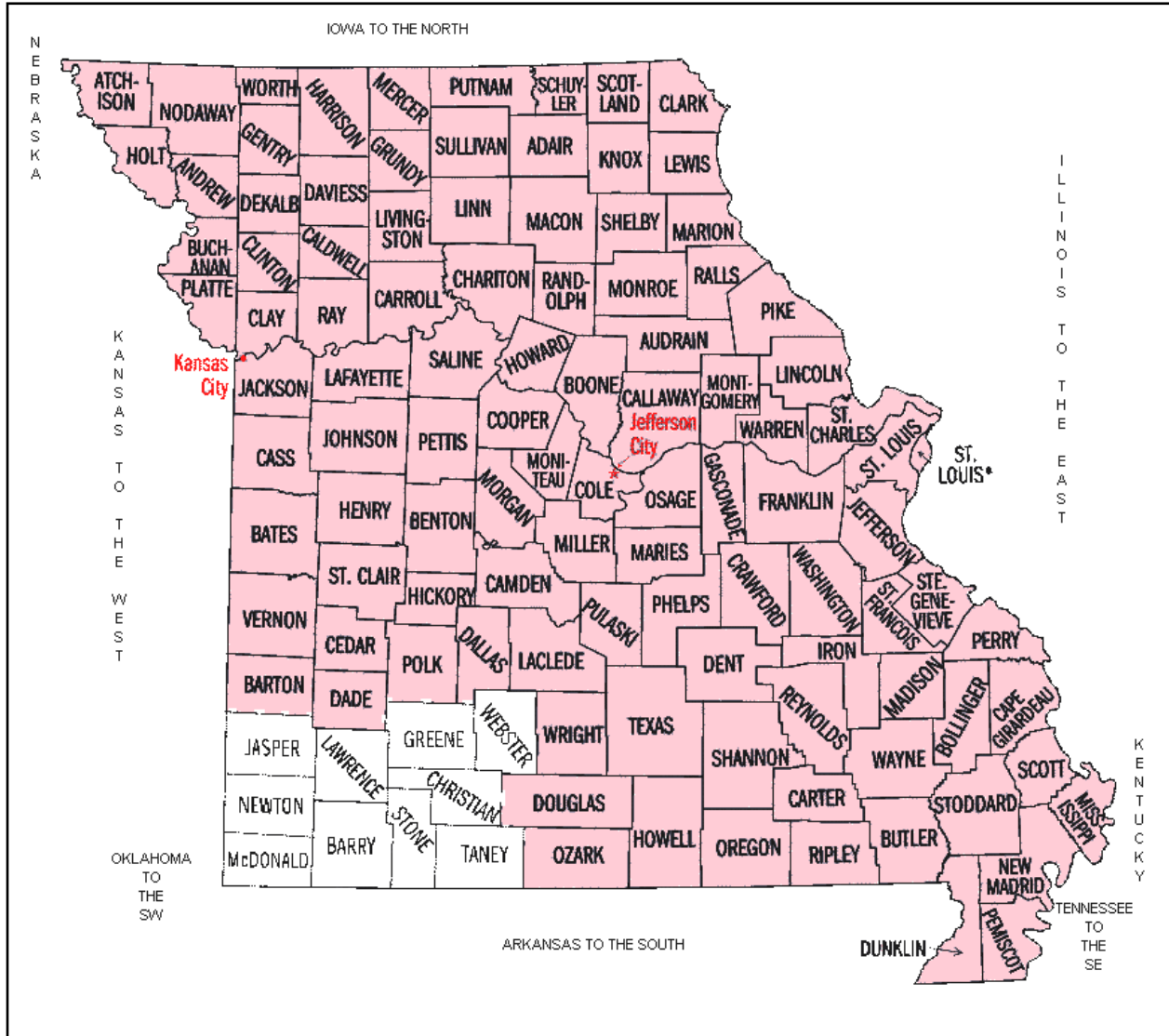
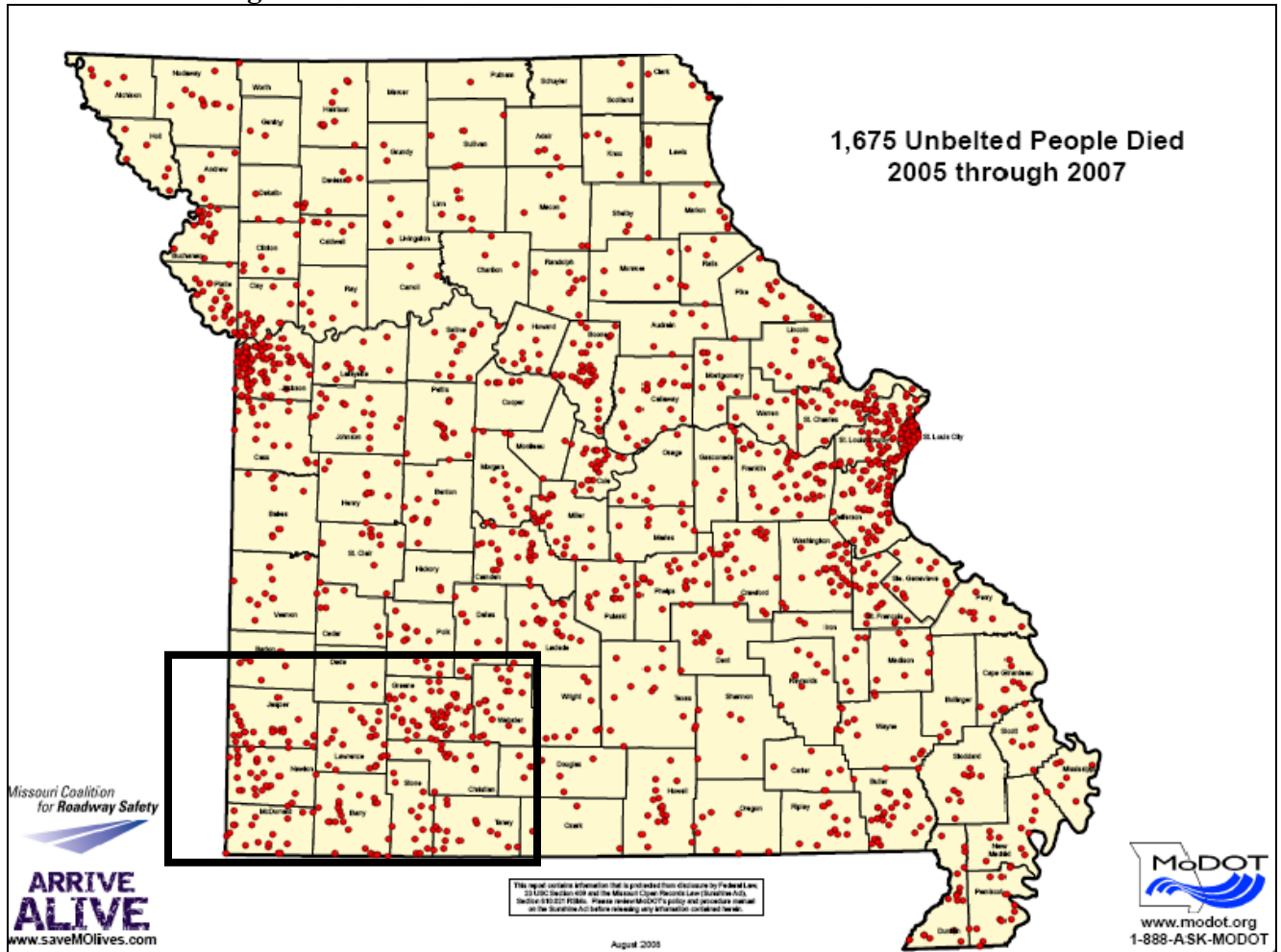


Figure B-2. Unbelted Fatal Crashes in 10 Rural Counties



3. THE MRI PROGRAM

The MRI program to increase seat belt use in southwest Missouri began in May, 2009 by focusing on a few of the rural areas during the May CIOT campaign. The primary MRI effort, however, included a single month-long media and enforcement campaign in October, 2009. Table B-2 shows the intervention and evaluation schedule.

Table B-2. Intervention and Evaluation Schedule

Intervention	Pre Measures	Intervention (Media and Enforcement)	Post Measures
1	April 2009 (Wave 1, Baseline)	CIOT May 2009	June 2009 (Wave 2)
2	Sept. 2009 (Wave 3)	MRI Oct. 1-31, 2009	Nov. 2009 (Wave 4)
3	May 2010 (Wave 5)	CIOT May 2010	June 2010 (Wave 6)

3.1 Media

The MRI aimed media messages primarily at young, male pickup truck drivers since this demographic represented a large portion of Missouri’s fatalities. No new media messages were developed. Instead, the State used NHTSA’s television spot “Bubba’s Last Stand” and radio spots of “Crack of Dawn” and “Friendly Warning.”

The Missouri Department of Transportation’s District 7 Joplin office held a press event on October 9, 2009, to announce the project. Media in attendance included representatives from the Joplin Globe and Neosho Daily newspapers, KODE – ABC television, and KZRG radio. Each participating law enforcement agency was supplied with releases that were published in local newspapers. Advertising for the October enforcement aired on nine local television stations, seven radio stations, and five movie theater screens. In addition, 25 gas stations throughout the area had ice box wraps with the CIOT enforcement message. Table B-3 shows that most of the publicity budget went to purchase 1,571 television spots.

Table B-3. Publicity Budget, Reach, Frequency and Dollar Values Achieved

Dates	Target audience	Media Bought:	Reach / Frequency (TRP or Impressions Total)	Purchased Spots	Cost	Total Value
September 28 to October 23, 2009	SW MO Counties; Young Male Pickup Drivers	TV	600	1,571	\$99,379.35	\$99,379.35
		Radio	400	528	\$10,307.13	\$10,307.13
		Internet	2,681,330	*	\$12,195.22	\$12,195.22
		Ice Box Wraps	*	25	\$25,520.59	\$20,520.59
		Digital Cinema (48 Movie Screens)	*	*	\$6,460.66	\$6,460.66
Total Media Expenditures						\$146,860.95

*Information not available.

3.2 Law Enforcement Activities

Before the MRI project, rural law enforcement agencies were not typically involved in most seat belt projects in the State. As a consequence of the MRI project, more agencies began participating in the seat belt initiatives, and three smaller municipalities in the area even passed primary seat belt ordinances: Merriam Woods (March 2009); Nixa (October 2009); and Willard (December 2009).

A regional law enforcement luncheon took place in Springfield on January 22, 2009, in an attempt to recruit more rural law enforcement agencies. State representatives described the goals and basis for selecting the region targeted in the demonstration project. Communication via e-mail and mail continued throughout the summer, and additional discussions with area agencies took place in Springfield on September 9, 2009, during the region’s grant award workshop. Later, on September 28, the High Enforcement Action Team (HEAT) discussed the project at its coordination meeting in Springfield (a HEAT campaign was conducted on Interstate 44 from the Illinois to Oklahoma State lines on October 17, 2009).

All agencies participating in the MRI program opted for paid overtime rather than performance-based incentives for the October campaign. During separate quarterly enforcement days run by the State, the State offered additional incentives including randomly drawing 15 agencies that participated to receive radars, LED flares, window tint meters, or similar items. These incentives generally boosted participation by about 50 to 60 agencies statewide for these other non-MRI enforcement efforts.

During the primary MRI campaign in October, 37 agencies participated in the 10 rural counties and worked a total of 3,037 hours (Table B-4). The participating agencies reported a total of 10,526 stops that resulted in 1,504 seat belt citations. The Missouri State Highway Patrol issued the majority of the seat belt citations.

Table B-4. Enforcement Budgets and Effort Expended

	CIOT May 15-31, 2009 (Demo Project Funds)	CIOT May 15-31, 2009 (State Funds)	MRI October 1-31, 2009 (Demo Project Funds)
Budget for enforcement	\$12,000	\$33,500	\$95,000
Amount spent on enforcement	\$4,219.89	\$18,960	\$ 29,388.63
Number of agencies	8	21	37
Hours worked	225.5	874	3037

4. Evaluation Results

Evaluators measured the impacts of the 2009 CIOT, October MRI, and 2010 CIOT campaigns using direct observations of seat belt use before and after the campaigns at four locations in each county. Measures of public awareness of the program and self-reported behaviors took place at driver license renewal offices in the 10 targeted counties before and after each campaign.

4.1 Seat Belt Observations

Observers used the same observational methods that Missouri used for its annual statewide seat belt survey. The Missouri Department of Transportation Highway Safety Division selected four observation sites per county with input from local offices and the evaluation team. Table B-5 provides a listing of all observation locations by county and Table B-6 shows the observed seat belt use for each of the 10 rural counties. Seat belt use varied by county with some showing overall increases from the baseline measure while others showed decreases over time. The total displayed in the table is the raw percentage belt use for all observations combined across all counties. Across the entire study timeframe, belt use increased 2.8 percentage points. Figure B-3 shows the overall increase in belt use across the entire demonstration program.

4.2 Awareness Survey

To assess changes in program awareness and self-reported behaviors, Missouri conducted a paper-and-pencil survey in driver licensing offices in the 10 intervention counties. The single-page survey appears in Figure B-4. It included items covering demographics, seat belt use, exposure to media, and exposure to seat belt enforcement.

There were a total of six survey administrations that collected 3,155 responses: a baseline measure before any program activities, after CIOT in 2009, before and after the MRI program in October of 2009, and in May and June of 2010 before and after CIOT. The dates of the six survey waves were:

- April 2009 – Baseline (N=1,034),
- June 2009 – Post-CIOT (N=615),
- September 2009 – Pre-MRI (N=299),
- November 2009 – Post-MRI (N=365),
- May 2010 – Pre-CIOT (N=495), and
- June 2010 – Post-CIOT (N=347).

Table B-5. Observation Sites by County

County	Observation Sites	Road Type
Barry	1 – Hwy 60 at 37	Rural Primary & Secondary Arterial
	2 – Hwy 37 at 86	Rural Primary & Secondary Arterial
	3 – Hwy 86 at A/W	Rural Primary & Secondary Arterial
	4 – Hwy 37 at 112	Rural Primary & Secondary Arterial
Christian	1 – Hwy 65 at CC	Expressway
	2 – Hwy 65 at 14	Expressway
	3 – Hwy 13 at 14	Expressway
	4 – Hwy 14 at 125	Rural Primary & Secondary Arterial
Greene	1 – Hwy 160 at 413	Rural Primary & Secondary Arterial
	2 – Hwy 160 at 123	Rural Primary & Secondary Arterial
	3 – Hwy 13 at WW	Expressway
	4 – Hwy 125 at DD	Rural Major & Minor Collectors
Jasper	1 – Hwy 71 at M/N	Expressway
	2 – Hwy 66 at 43	Rural Primary & Secondary Arterial
	3 – Hwy 96 at 571	Rural Primary & Secondary Arterial
	4 – Hwy 43 at 96	Rural Major & Minor Collectors
Lawrence	1 – Hwy 60 at Business 60	Rural Primary & Secondary Arterial
	2 – Hwy 39 at FF	Rural Primary & Secondary Arterial
	3 – Hwy 96 at 97	Rural Primary & Secondary Arterial
	4 – Hwy 37 at PP	Rural Primary & Secondary Arterial
McDonald	1 – Hwy 76 at 59	Rural Major & Minor Collectors
	2 – Hwy 59 at 90	Rural Primary & Secondary Arterial
	3 – Hwy 71 at 90	Expressway
	4 – Hwy 59 at C/B	Rural Primary & Secondary Arterial
Newton	1 – Hwy 60 at B	Rural Primary & Secondary Arterial
	2 – Hwy 60 at Business 71	Rural Primary & Secondary Arterial
	3 – Hwy 71 at V	Expressway
	4 – Hwy 43 at C	Rural Primary & Secondary Arterial
Stone	1 – Hwy 13 at 248/160	Rural Primary & Secondary Arterial
	2 – Hwy 265/413 at D	Rural Primary & Secondary Arterial
	3 – Hwy 76 at 13 (Branson West)	Rural Primary & Secondary Arterial
	4 – Hwy 13 at 86	Rural Primary & Secondary Arterial
Taney	1 – Hwy 65 at 160	Expressway
	2 – Hwy 160 at 76	Rural Primary & Secondary Arterial
	3 – Hwy T at 76	Rural Major & Minor Collectors
	4 – Hwy 76 at 165 (Branson)	Rural Primary & Secondary Arterial
Webster	1 – Hwy 60 at Route D/VV	Expressway
	2 – Hwy 60 at O	Expressway
	3 – Hwy 38 at DD	Rural Primary & Secondary Arterial
	4 – Hwy 38 at E	Rural Major & Minor Collectors

Table B-6. Seat Belt Use by County

	Pre-CIOT 2009	Post-CIOT 2009	Pre-MRI 2009	Post-MRI 2009	Pre-CIOT 2010	Post-CIOT 2010
Barry	69.4%* N=376	55.2% N=375	46.3% N=387	57.9% N=382	64.4% N=466	67.7% N=474
Christian	77.2% N=795	72.3% N=1,108	70.6% N=839	76.3% N=832	77.1% N=1,019	77.2% N=1,079
Greene	77.3% N=652	73.2% N=634	71.8% N=621	74.0% N=643	74.5% N=1,027	75.1% N=763
Jasper	55.8% N=457	59.2% N=377	63.0% N=457	63.4% N=623	67.3% N=614	65.0% N=529
Lawrence	58.9% N=474	58.0% N=660	62.0% N=566	60.9% N=728	64.3% N=703	57.0% N=658
McDonald	54.4% N=671	53.1% N=659	59.0% N=709	61.1% N=878	56.7% N=840	55.5% N=920
Newton	61.1% N=534	74.3% N=413	68.6% N=440	69.1% N=488	75.4% N=507	75.4% N=496
Stone	64.9% N=510	66.5% N=493	62.2% N=484	65.3% N=446	71.1% N=596	66.5% N=671
Taney	68.0% N=753	75.2% N=773	72.2% N=711	75.7% N=768	73.5% N=637	78.5% N=952
Webster	71.3% N=453	66.5% N=535	66.8% N=509	69.2% N=595	63.0% N=624	69.9% N=598
Total (Raw %)	66.4% N=5,675	66.4% N=6,027	65.2% N=5,723	67.8% N=6,383	68.8% N=7,033	69.2% N=7,140

*Percentage is of observed drivers who were belted. N is total count of drivers observed.

Figure B-3. 10-County Belt Use (Raw %)

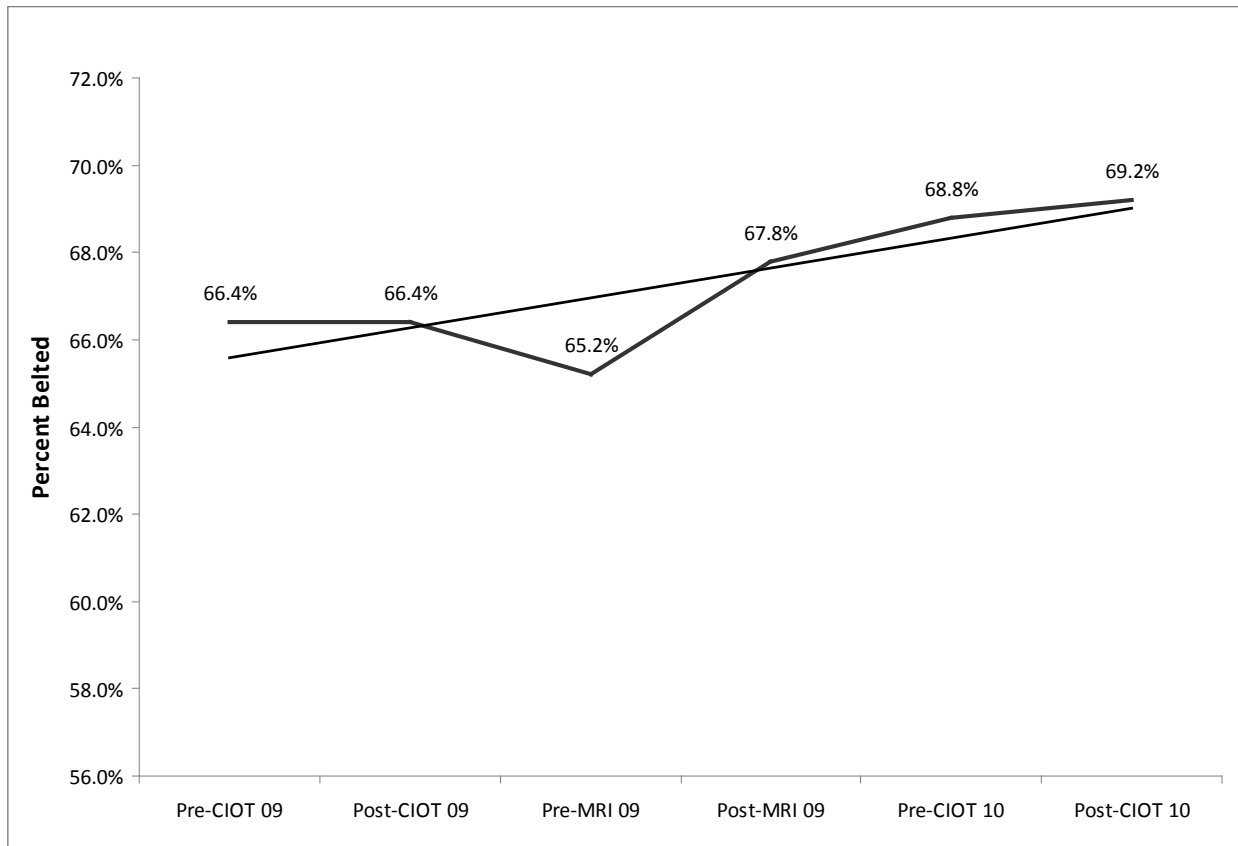


Figure B-4. Awareness Survey

Several Driver Licensing Offices in the state are participating in a study about safety belt use in Missouri. Your answers to the following questions are voluntary and anonymous.

1. Your county:

Barry	Christian	Greene	Jasper	Lawrence	McDonald	Newton	Stone	Taney	Webster
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. About how many miles did you drive last year?

Under 5,000	5,000 to 10,000	10,000 to 15000	Over 15,000
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. What type of vehicle do you drive most often?

Passenger Car	Pickup	SUV	Van	Crossover
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. How often do you wear your safety belt when you drive or ride in a vehicle?

Always	Nearly Always	Sometimes	Seldom	Never
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Do you think that it is important for police to enforce the seat belt laws?

Yes	No
<input type="radio"/>	<input type="radio"/>
6. What do you think the chances are of getting a ticket if you don't wear your seat belt?

Always	Nearly Always	Sometimes	Seldom	Never
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Do you think the seat belt law is enforced?

Very Strictly	Somewhat Strictly	Not very Strictly	Rarely	Not at all
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Have you ever received a ticket for not wearing your seat belt?

Yes	No
<input type="radio"/>	<input type="radio"/>
9. In the past month, have you seen or heard about police enforcement focused on seat belt use?

Yes	No
<input type="radio"/>	<input type="radio"/>
10. Have you recently read, seen or heard anything about seat belts?

Yes	No
<input type="radio"/>	<input type="radio"/>

If Yes, where did you see or hear about it? (check all that apply):

Newspaper	Radio	TV	Billboards	Brochure	Police Enforcement	Internet	Other
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If Yes, what did it say? _____
11. Have you recently read, seen or heard anything about wearing a seat belt and riding in a pickup truck?

Yes	No
<input type="radio"/>	<input type="radio"/>
12. Do you know the name of any seat belt program(s) in Missouri? (check all that apply):

Arrive Alive	Buckle up in Your Truck	Click it or Ticket	Operation Safe Teen
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Your gender:

Male	Female
<input type="radio"/>	<input type="radio"/>
14. Your age:

Under 21	21-25	26-39	40-49	50-59	60 Plus
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Your race:

White	African American	Asian	Native American	Spanish/Hispanic	Other
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. What is your income:

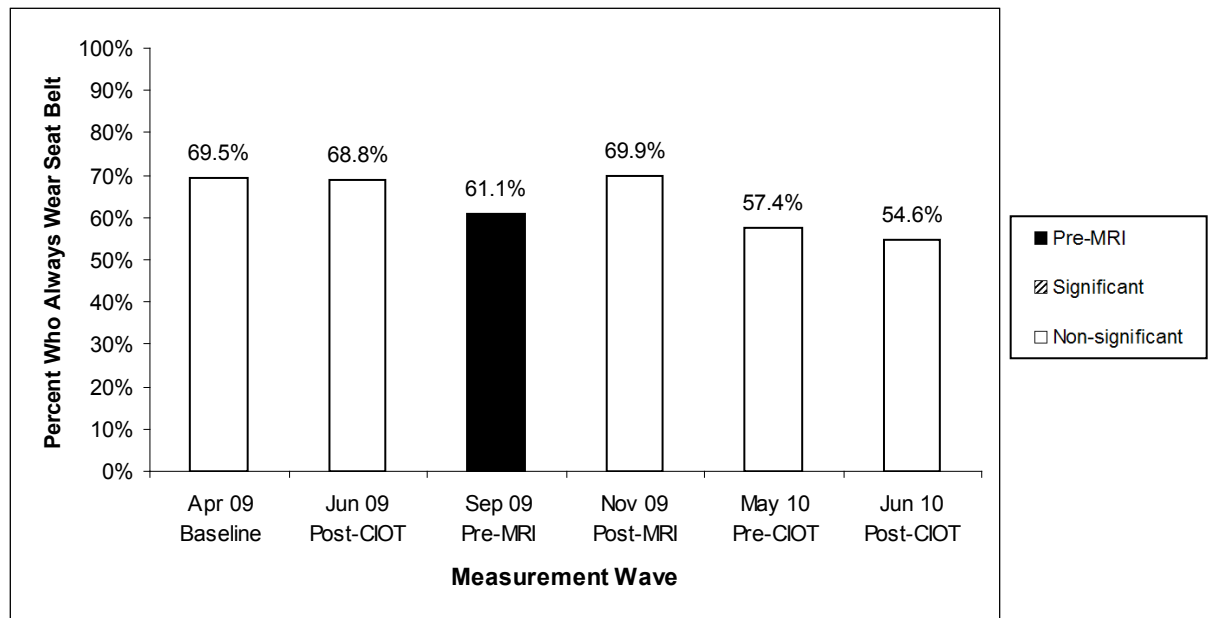
Under 15K	16-25K	26-35K	36-50K	Over 50K
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

A total of 3,155 surveys were collected across the six measurement waves, and 52.5 percent of the respondents were male. Overall, 46.0 percent of respondents indicated they drove passenger cars, 28.1 percent pickup trucks, 16.6 percent SUVs, 7.3 percent vans, and 1.9 percent “crossover” vehicles. The age distribution across all measures was 8.2 percent under 21 years old, 12.8 percent 21 to 25, 23.1 percent 26 to 39, 19.8 percent 40 to 49 years, 17.2 percent 50 to 59 years, and 18.9 percent for 60 and older. The vast majority of the sample (88.6%) was White.

The Missouri intervention was a month-long media and enforcement campaign. Therefore, even though six waves of survey data were collected, the changes of most interest are those from the pre-MRI wave (Wave 3) to the post-MRI wave (Wave 4). The other survey waves were before and after annual CIOT activities that were not highly focused on the selected rural counties. Thus, in the discussion and figures that follow, statistical comparisons with the pre-MRI period are highlighted rather than differences from the baseline wave.

When asked, “How often do you wear your seat belt when you drive or ride in a vehicle?” the percentage saying “always” started at 69.5 percent during the baseline period; dropped to 61.1 percent during the pre-MRI period; returned to 69.9 percent in the post-MRI period; and dropped to 57.4 percent pre-CIOT 2010 and 54.6 percent post-CIOT 2010. As shown in Figure B-5, none of the increases or decreases was significantly different than the pre-MRI period.³

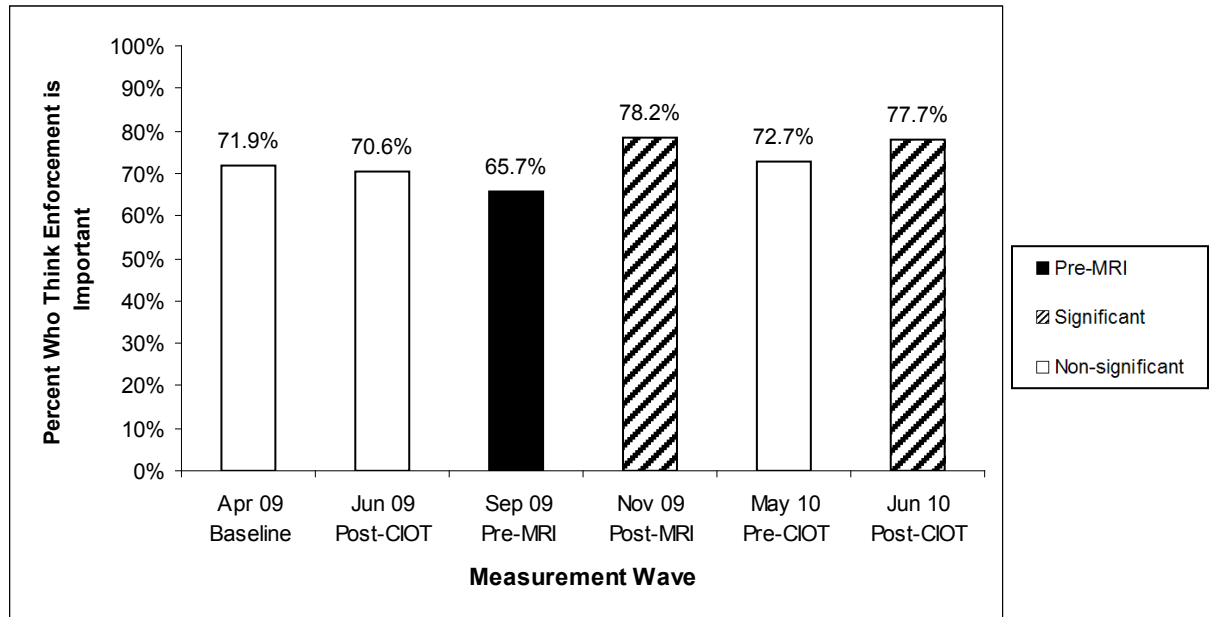
Figure B-5. Percentage Who Always Wear Seat Belts



When asked, “Do you think it is important for the police to enforce the seat belt laws?” the percentages of “yes” responses in the post-MRI (78.2%) and post-CIOT 2010 (77.7%) periods were significantly higher, $\chi^2(5, 3,015) = 18.01, p < 0.005$, than in the pre-MRI measure (65.7%) as shown in Figure B-6.

Figure B-6. Percentage Who Think Police Seat Belt Enforcement Is Important

³ Statistical significance reported here is by the Pearson chi-square test calculated by the SPSS Version 15 software. When the Pearson chi-square statistic was significant, all pairwise comparisons between measurement waves were tested using the Z test of column proportions. Significance is reported if a two-sided test met the 0.05 level.



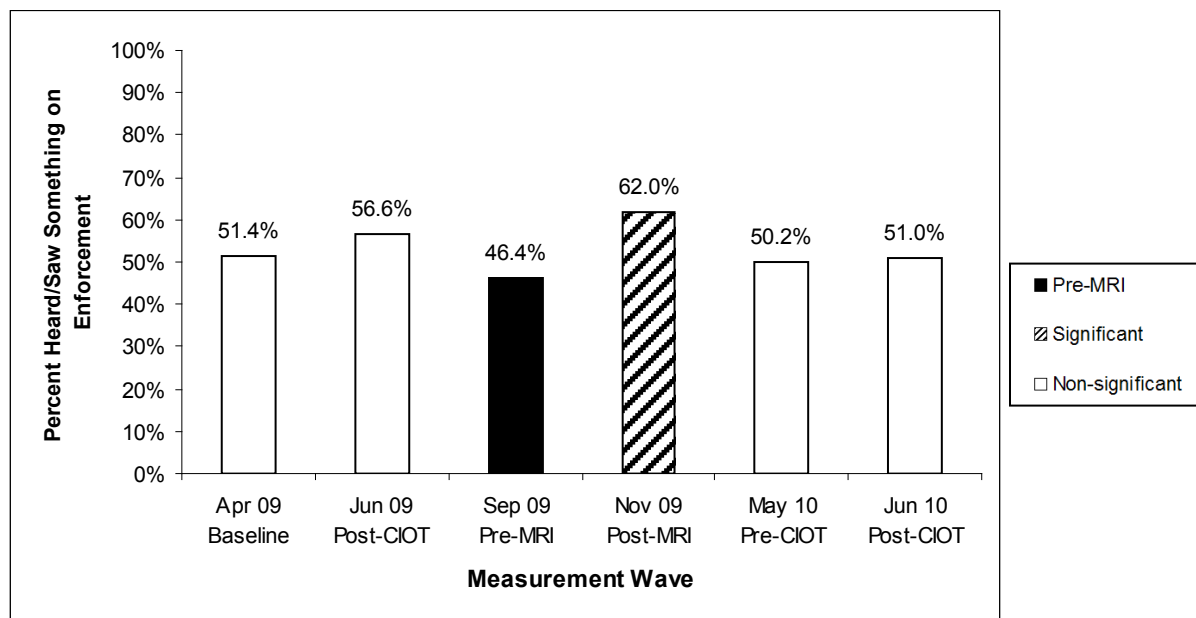
For the question “*What do you think the chances are of getting a ticket if you don't wear your seat belt?*” there were no meaningful increases over time with the response of “*always,*” hovering in the 20 percent to 25 percent range for each measurement wave.

For the “*Do you think the seat belt law is enforced?*” question that addressed the perceived strictness of enforcement, the response of “*very strictly*” ranged from 9.4 percent in the final wave to 20.1 percent post-CIOT in June 2009 (Wave 2), but did not show any meaningful relationship to MRI activities.

There was significant variability, $\chi^2(5, 3,048) = 12.47, p < 0.05$, over time in responses to the question, “*Have you ever received a ticket for not wearing seat belt?*” but it was due to a lower percentage of “*yes*” responses after the baseline period. The percentage of “*yes*” responses started at 16.3 percent but then dropped to a low of 10.3 percent in the pre-MRI period before rising slightly to 12.5 percent post-MRI. The percentage of respondents answering “*yes*” was not, however, significantly different (higher or lower) after the MRI activities.

When asked, “*In the past month, have you seen or heard about police enforcement focused on seat belt use?*” the percentage saying “*yes*” started at 51.4 percent during baseline and increased significantly, $\chi^2(5, 3,067) = 22.89, p < 0.001$, to a high of 62.0 percent in the post-MRI measure followed by a decrease towards baseline levels in the next two waves (Figure B-7).

Figure B-7. In the Past Month, Have You Seen or Heard About Police Enforcement Focused on Seat Belt Use?



When asked the more general question, “*Have you recently read, seen, or heard anything about seat belts?*” the percentage saying “yes” went from a baseline of 67.7 percent through a low of 55.3 percent in the pre-MRI measure to a high of 72.8 percent for the post-MRI measure before dropping to 63.1 percent by the post-CIOT 2010 wave, $\chi^2(5, 3,096) = 28.94, p < 0.001$ (Figure B-8). Significantly more people responded “yes” in the post-MRI measure (72.8%) than in the pre-MRI survey (55.3%).

If a person indicated he or she had seen or heard anything, the survey asked, “*Where did you see or hear about it?*” Only people who indicated “yes” to the previous question should have provided a response to this item, but a number of people who said “no” still indicated they had seen some form of media. As such, the media types were analyzed based on the total sample. This approach provides a look at the overall exposure levels of each media type based on the full number of respondents. All of the media types showed increases in overall exposure with most of the increases observed during the post-MRI period. With respect to the media source for information, statistically significant increases ($ps < 0.05$) in self-reported exposure between the pre-MRI and post MRI waves were seen for TV (Figure B-9), brochures (Figure B-10), and police (Figure B-11). There was a notable increase in people who selected the Internet as the source of information from the pre-MRI wave (5.4%) to the post-MRI measure (11.0%), but the change failed to be statistically reliable, likely because the pre-MRI wave had an unusually low sample size. Similarly, selection of billboards as a source of the message increased from 29.8 percent in the pre-MRI wave to 35.3 percent in the post-MRI measure, but the paired comparison failed to reach significance. Mention of newspapers and radio did not change significantly ($ps > 0.05$) across the six measurement waves.

Figure B-8. Recently Read, Seen, or Heard Anything About Seat Belts

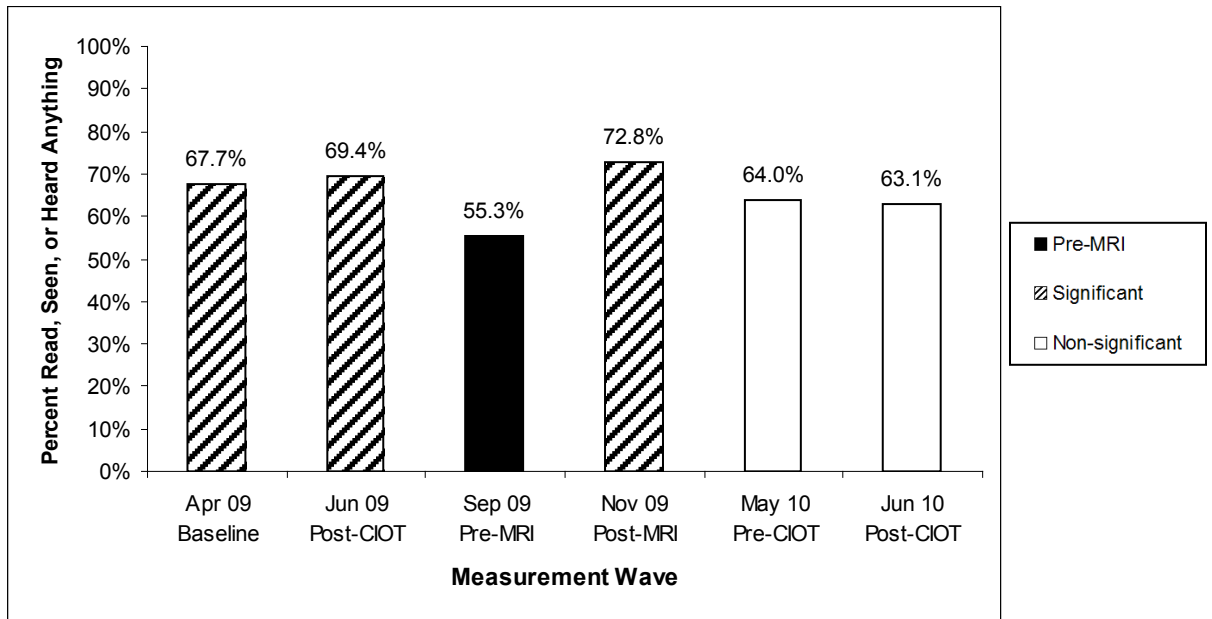


Figure B-9. Saw Message on TV

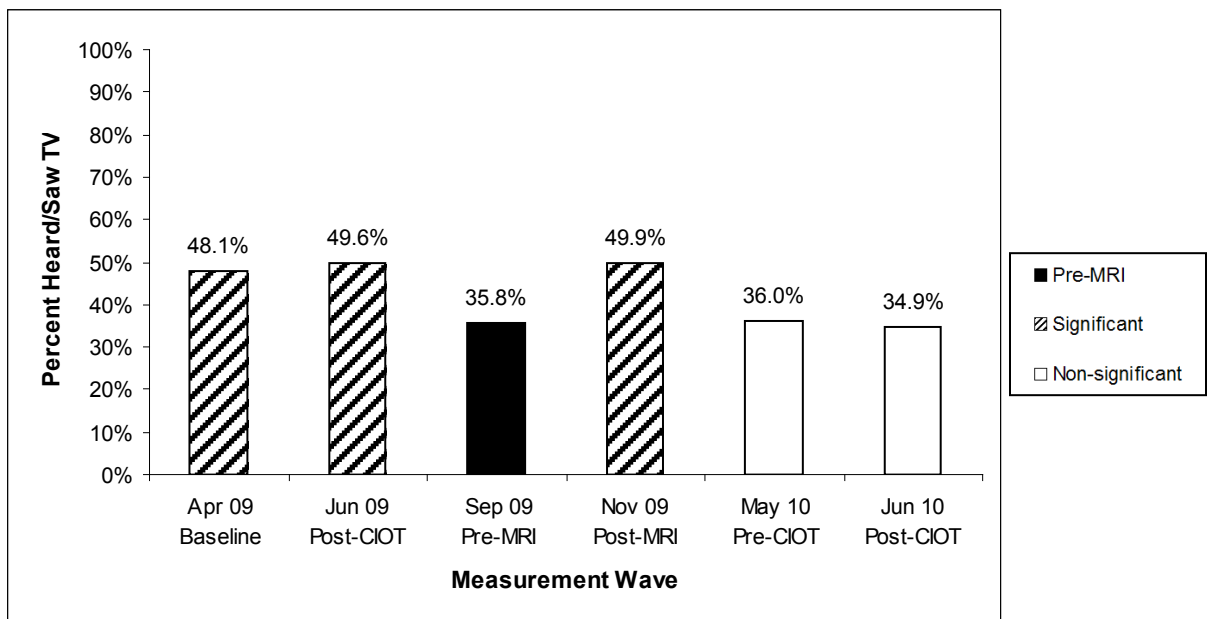


Figure B-10. Read Message in Brochure

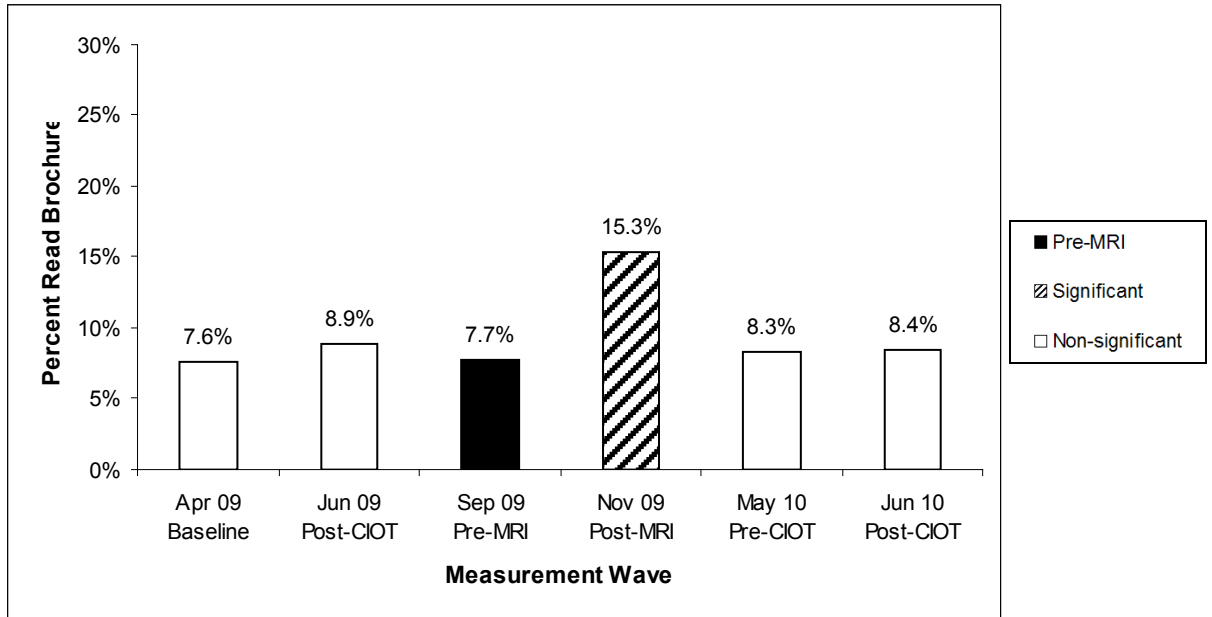
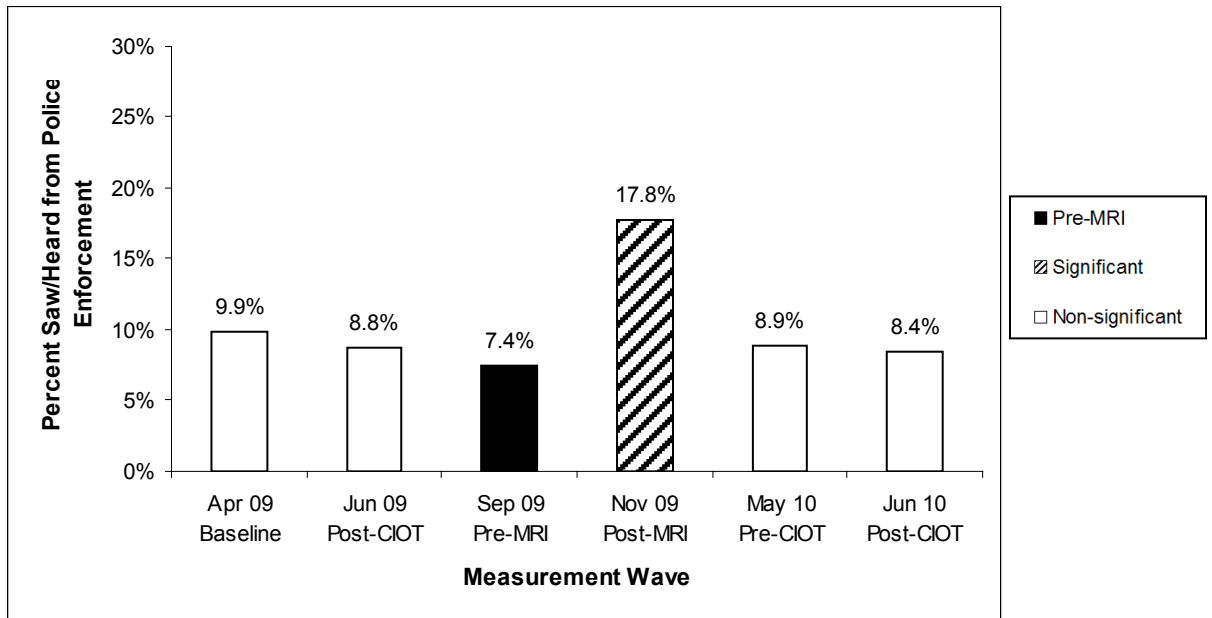
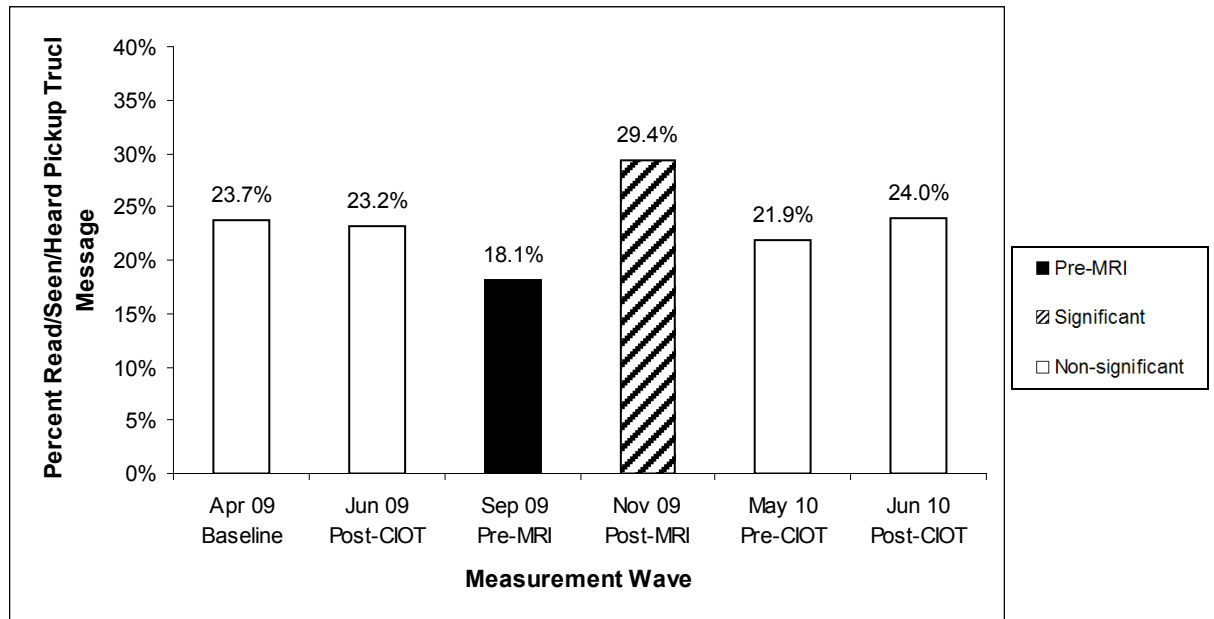


Figure B-11. Saw/Heard Message From Police Enforcement



A separate question asked, “Have you recently read, seen or heard anything about wearing a seat belt and riding in a pickup truck?” As shown in Figure B-12, the percentage saying “yes” approached an overall significant increase, $\chi^2(5, 2,722) = 10.66, p < 0.059$, going from 18.1 percent pre-MRI to 29.4 percent post-MRI before dropping back down in the two subsequent waves.

Figure B-12. Read/Seen/Heard Pickup Truck Message



CIOT was the most recognized program in response to the item, “Do you know the name of any seat belt program(s) in Missouri?” Almost 80 percent of respondents knew CIOT across all six measurement waves. The only other program name with relatively high recognition was “Arrive Alive” that was selected as a known program by over 50 percent of the total respondents in the six waves. The remaining program names on the questionnaire (“Buckle Up in Your Truck” and “Operation Safe Teen”) showed relatively low levels exposure with no notable increases over time.

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