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Evaluation of the Rhode Island Child Restraint Law

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Abstract: In Rhode Island, a law went into force July 1, 1980, requiring drivers to transport children who are in the front seats of vehicles in properly used child restraints. In the fourth month of the law, restraint use and travel in rear seats had increased moderately; the net result was an increase in proper restraint use in rear seats (11 to 23 per cent) and a decrease in unrestrained, front seat travel (41 to 26 per cent). (*Am J Public Health* 1981;71:742-743.)

In July 1980, Rhode Island, following the lead of Tennessee, became the second state in the nation to legally require child restraint use in motor vehicles.^{1, 2} The Rhode Island law requires all drivers to transport children aged three or under who are in the front seats of vehicles in properly used child restraints. Failure to comply with the law is considered a moving violation that may result in a \$15 fine and, in combination with additional moving violations received in a one-year period, can lead to driver's license suspension.

In Knoxville and Nashville, Tennessee, the use of child restraints anchored by seat belts was 8 per cent before the Tennessee law; usage rose to 16 per cent in the fourth month of the law, and to 29 per cent in its third year.^{3, 4} In this paper, a study of the effects of the Rhode Island law in its fourth month is reported.

Methods

Observations of children traveling in automobiles were made in Rhode Island in the greater Providence area (Providence, Pawtucket, Cranston, Warwick) about one month before the law went into force (May-June 1980) and in the

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fourth month of the law (October 1980). Observations of child travel for comparison purposes were also made at these times in New Bedford and Worcester, Massachusetts, an adjacent state not having a child restraint law.

The same observational techniques used in evaluating the Tennessee law^{3, 4} were used in Rhode Island. Observations were made at stop signs and stop lights at exits from 20 shopping centers in the greater Providence area, and 10 shopping centers each in New Bedford and Worcester. If automobiles stopping at stop signs and stop lights contained one or more children who were possibly less than four years old, information was obtained from drivers on age of the child, and observations on how the children were traveling were made and recorded.

The criteria for "proper use" used in this study were as follows:

- Rear-facing infant restraints had to be anchored by the vehicle seat belt;
- In forward-facing child restraints in which the vehicle seat belt fastens around both the restraint and the child, the seat belt had to be fastened;
- In forward-facing child restraints in which the vehicle seat belt anchors the restraint but does not fasten around the child, both the seat belt and the restraint's harness system had to be used.

Although these are minimum criteria, restraints used in these ways would limit the child's motion in a crash and provide protection.

Results

In Rhode Island there was a moderate shift of children from front seats to rear seats after the law went into force. The proportion of children traveling in rear seats increased more in Rhode Island (49 to 62 per cent) than in Massachusetts (53 to 56 per cent) ($\chi^2 = 11.09$, $p < 0.001$).

Figure 1 shows pre-law and post-law rates of proper use of child restraints in Rhode Island and Massachusetts, in front seats, rear seats, and for all seating positions. Overall, there were increases in proper child restraint use in both

TABLE 1—Seating Position and Restraint Use in Rhode Island (RI) and Massachusetts before and after RI Law in Force

Proper Use of Child Restraints	Seating Position	Rhode Island				Massachusetts			
		Before		After		Before		After	
		N	(%)	N	(%)	N	(%)	N	(%)
Yes	Front	94	(11)	127	(12)	99	(7)	98	(8)
Yes	Rear	98	(11)	240	(23)	141	(11)	205	(18)
No	Front	353	(41)	271	(26)	536	(40)	421	(36)
No	Rear	323	(37)	415	(39)	562	(42)	446	(38)
TOTAL		868	(100)	1053	(100)	1338	(100)	1170	(100)

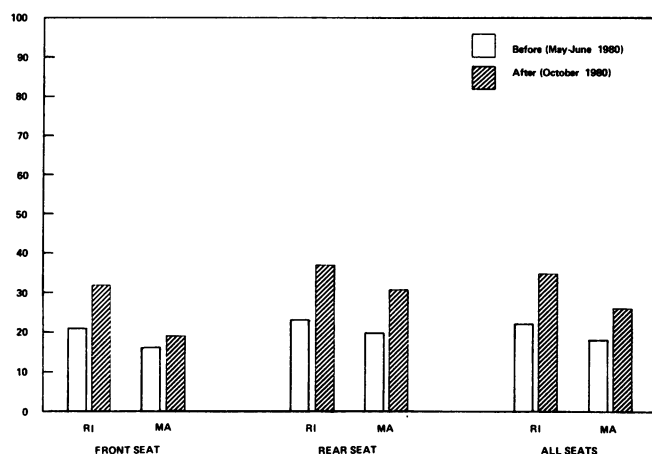


FIGURE 1—Per Cent Using Child Restraints Properly in Rhode Island (RI) and Massachusetts (MA) before and after Rhode Island Law in Force (July 1, 1980)

Rhode Island (22 to 35 per cent) and Massachusetts (18 to 26 per cent: 16 to 19 per cent in New Bedford, 21 to 33 per cent in Worcester). The increase in Rhode Island was greater than the increase in Massachusetts ($\chi^2 = 3.69$, $p \cong 0.05$). In Rhode Island, rates of proper use increased in both front and rear seats; in Massachusetts, use rates increased in rear seats but changed little in front seats.

As shown in Table 1, the net result of pre-law/post-law changes in seating position and restraint use in Rhode Island was to increase the proportion of children properly restrained in rear seats (11 to 23 per cent) and to decrease unrestrained, front seat travel (41 to 26 per cent). The same changes occurred in Massachusetts, but to a much lesser extent.

Travel in arms decreased more in Rhode Island (16 to 10 per cent) than in Massachusetts (16 to 15 per cent) ($\chi^2 = 5.66$, $p < 0.02$).

Discussion

The Rhode Island law in its first few months appears to have moderately increased crash protection of children in cars. Positive changes occurred both in seating position and

restraint use. These changes increased the proportion of child car occupants restrained in rear seats, which provides maximum crash protection, and decreased the proportion unrestrained in front seats, the least protective combination.⁵ This occurred despite the fact that child restraint use in rear seats is not required by the Rhode Island law.

The same changes took place in Massachusetts, an adjacent state without a child restraint law, although to a lesser extent. Thus some of the Rhode Island changes may reflect seasonal trends, or the influence of factors unrelated to the law. It is also possible that the Rhode Island law had some spillover effect in Massachusetts.

The early results in Rhode Island support the position that child restraint laws—although not a panacea—are one of several strategies that should be promoted to increase the protection of children in cars.⁴ The Rhode Island law is stronger than the Tennessee law in some ways, and weaker in others; neither contains all the elements of a desirable child restraint law.⁶ The Rhode Island law is stronger than the Tennessee law in that it applies to *all* children under four years old and does not allow travel in arms in the front seat; the Tennessee law permits some exclusions, including in-arms travel as an alternative to restraint use.⁶ It is notable that the hazardous practice of travel in arms decreased somewhat in Rhode Island, whereas in Tennessee, in the third year of the law, children were traveling in arms at the same rate as prior to the law.⁴ However, the Rhode Island law does not require restraint use in rear seats as does the Tennessee law. Although this shortcoming has not prevented the Rhode Island law from having positive effects, further gains might be forthcoming if the law were amended to require restraint use wherever the children were seated.

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