

# Traffic Safety Facts

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## Estimated Minimum Savings to a State's Medicaid Budget by Implementing A Primary Seat Belt Law: Arkansas, Colorado, Florida, and Missouri

For front seat occupants of passenger cars, seat belts can reduce the risk of death by 45% and the risk of serious non-fatal injuries by 50%. One method proven to be successful in increasing belt use is enacting primary seat belt laws in States. According to the National Highway Traffic Safety Administration, passing a primary law can increase seat belt use rates among non-users by 40%. A primary seat belt law allows a police officer to issue a seat belt citation whenever they observe an unbelted front seat occupant. A secondary law allows police to only issue a seat belt citation if the vehicle has been stopped for another violation.

Currently, only 25 States have primary laws. A 2003 study estimated that if all States had primary laws from 1995 to 2002, over 12,000 lives would have been saved. Failure to implement a primary belt law creates a real cost to a State's budget for Medicaid and other State medical expenditures. NHTSA contracted with Preusser Research Group to examine the *minimum* estimated savings on direct medical costs paid through Medicaid if primary belt laws were implemented in four States: Arkansas, Colorado, Florida, and Missouri.

### Method

For Arkansas, Colorado, Florida, and Missouri, 2005 Hospital Discharge Data were analyzed, including only cases where the external cause of injury was a motor vehicle crash. The number of patients discharged after crash-related injuries and the number of these patients classified as having Traumatic Brain Injuries (TBI) and/or Spinal Cord Injuries (SCI) is in Table 1. TBI and SCI tend to lead to long-term post-hospitalization costs, continuing over one's lifetime. Table 1 also shows the costs billed to the State as Medicaid or other sources paid by the State relative to the amount of direct hospital costs.

Long-term direct medical costs vary greatly depending on the injury. According to the Craig Hospital, during the first year after the injury has been incurred, post-hospitalization TBI costs per person are estimated at \$40,000 for rehabilitation and other medical costs. Subsequent year costs were estimated from the National Institute of Health values pertaining to traumatic brain injuries, lifetime costs for such injuries

and average lifespan of people with TBI. Beyond the first year, the average direct medical cost estimate was \$26,871 per person per year. This study's estimates did not include peripheral costs such as lost wages and productivity.

**Table 1. Costs Billed to States as Medicaid or Other Sources Paid Directly by the State**

	AR	CO	FL	MO
# of patients discharged after crash-related injuries	4,721	4,639	16,691	7,901
# of patients classified as TBI or SCI	846	1,120	4,134	2,698
Direct hospital costs*	\$154.5	\$2614	\$788.6	\$3215
Costs billed to State as Medicaid or other sources paid by State*	\$23.8	\$37.7	\$83.3	\$75.7

\*in millions

To estimate long term SCI costs, an analysis by University of Alabama's National Spinal Cord Injury Statistical Center report was used. For the first year, average yearly expenses ranged from \$200,000 to over \$700,000 per person, depending on injury severity. For each year thereafter, average yearly costs were from \$15,000 to over \$100,000.

Finding an estimate of the percentage of TBI and SCI patients likely to become Medicaid recipients is difficult. According to the Craig Institute, the proportion of those with TBI on Medicaid doubles in the year following injury and for SCI, 25.4% of all SCI patients will become Medicaid patients within five years after injury.

### Traumatic Brain Injury Costs

In 2005, 94 TBI patients on Medicaid were discharged from Arkansas hospitals, 5 of whom died; 104 TBI patients on Medicaid were discharged in Colorado, 6 of whom died; 332 TBI patients on Medicaid were discharged in Florida, 31 of whom died; and 517 TBI patients on Medicaid were discharged from Missouri hospitals, 23 of whom died. The patients that died sustained only acute hospital costs. Actual hospital charges were \$5.0 million in Arkansas, \$9.2 million in Colorado; \$28.8 million in Florida; and \$34.2 million in Missouri. Survivors

generated this acute care cost and \$40,000 per person of additional health care costs for the first year and another \$26,871 per person for each year after.

## Spinal Cord Injury Costs

The number of SCI patients on Medicaid discharged from Arkansas hospitals was 13; their actual hospital charges were \$1.4 million. In Colorado, there were 21 SCI patients on Medicaid discharged with actual hospital charges of \$8.1 million. In Florida, there were 13 SCI patients on Medicaid discharged, and their actual hospital charges were \$4 million. In Missouri, there were 52 SCI patients on Medicaid discharged, with their actual hospital charges totaling \$7.4 million.

## Total Medicaid Costs

Table 2 summarizes estimated costs to Medicaid from motor vehicle crashes from the first year the injury was incurred and subsequent years. Thus, the total first year cost is \$36 million for Arkansas; \$58.7 million for Colorado; \$105.5 million for Florida; and \$132.6 million for Missouri. For subsequent years, the cost is \$6.7 million for Arkansas; \$7.7 million for Colorado; \$21.4 million for Florida; and \$30.7 million for Missouri.

**Table 2. Estimated Costs to Medicaid From Motor Vehicle Injuries in Millions**

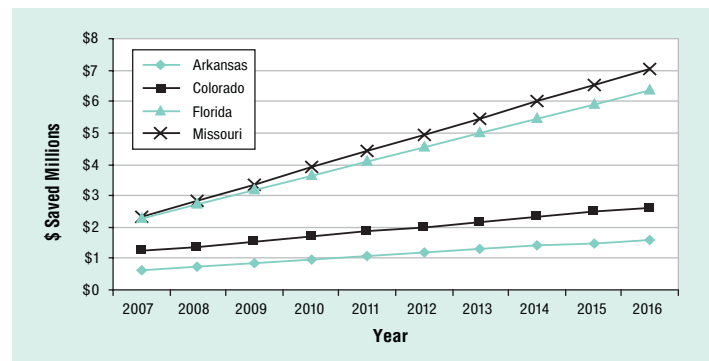
		AR	CO	FL	MO
TBI	1st yr.	\$8.6	\$13.1	\$40.8	\$54.0
	Add. yrs.	\$4.8	\$5.3	\$16.2	\$26.5
SCI	1st yr.	\$10.1	\$25.2	\$14.1	\$44.5
	Add. yrs.	\$2.0	\$2.4	\$5.2	\$4.1
Other	1st yr.	\$17.4	\$20.4	\$50.6	\$34.1
	Add. yrs.	n/a	n/a	n/a	n/a
Total	1st yr.	\$36.0	\$58.7	\$105.5	\$132.6
	Add. yrs.	\$6.7	\$7.7	\$21.4	\$30.7
Potential Savings by Adopting a Primary Law	1st yr.	\$0.6	\$1.2	\$2.3	\$2.3
	Add. yrs.	\$0.1	\$0.2	\$0.5	\$0.5

## Determining Costs Saved by Primary Law

Table 2 also shows the amount that could be saved by a State by implementing a primary law. In 2005, the seat belt use rate was 68.3% in Arkansas; Colorado's was 79.2%, Florida's was 73.9%; and Missouri's was 77.4%. Based on a 40% belt use conversion rate, belt use could be expected to increase by 12.68% in Arkansas; by 8.32% in Colorado; by 10.44% in Florida; and by 9.04% in Missouri. The Federal Government

also reimburses a portion of States' Medicaid expenditures. The 2005 reimbursement rate for Arkansas, Colorado, Florida, and Missouri was 73.37%; 50.0%; 58.76%; and 61.60%, respectively. Accounting for this reimbursement, the first year after implementing a primary law, Arkansas could save \$0.6 million; Colorado could save \$1.2 million; Florida could save \$2.3 million; and Missouri could save \$2.3 million. Figure 1 shows the projected yearly savings by passing a primary law in 2007.

**Figure 1. Projected Yearly Savings by Passing a Primary Law in 2007\***



\*Actual savings may be higher due to rising health care costs

## Discussion

Over the next 10 years, Arkansas can expect to save at least \$11.1 million; Colorado can expect to save at least \$19.3 million; Florida can expect to save at least \$43.2 million; and Missouri can expect to save at least \$46.8 million on their annual budgets in medical costs alone by implementing primary seat belt laws in 2007.

This study reports the estimated *minimum* savings associated by implementing a primary law. So whenever multiple credible values existed for an estimate, the lowest value was chosen. Also, this study did not project cost increase over time. Thus, Arkansas, Colorado, Florida, and Missouri could expect to save even more money than the estimates reported in this study by implementing a primary law.

## How to Order

For a copy of *Estimated Minimum Savings to a State's Medicaid Budget by Implementing a Primary Seat Belt Law: Arkansas, Florida, Colorado and Missouri* (Report for each State, 7 pages each plus appendices), prepared by Preusser Research Group, write to the Office of Behavioral Safety Research, NHTSA, NTI-130, 400 Seventh Street SW., Washington, DC 20590, send a fax to 202-366-7096, or download from [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov).



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