

Motor Vehicle Prioritizing Interventions and Cost Calculator for States (MV PICCS)

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Transportation Safety Team, CDC

Lifesavers 2015
Workshop: Putting Data to Work to Enhance, Pass Seat Belt Laws

March 15, 2015

National Center for Injury Prevention and Control
Division of Unintentional Injury Prevention



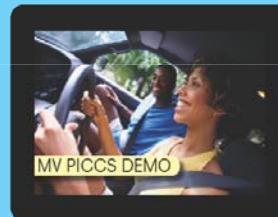
MV PICCS

MV PICCS is an interactive online calculator that produces state-level recommendations on which interventions

- Prevent the most injuries
- Save the most lives
- Are most cost effective

<http://www.cdc.gov/motorvehiclesafety/calculator/>

Motor Vehicle PICCS Prioritizing Interventions and Cost Calculator for States



CDC offers a NEW interactive calculator to help states prioritize and select effective motor vehicle injury prevention interventions.

This tool can be used to calculate the:

- Number of injuries prevented

Cost and Effectiveness Estimates



Calculates the expected:

Costs

Monetary costs of implementation & costs paid by individuals to states

Effectiveness

Injuries prevented
Lives saved
Monetized value of injuries prevented & lives saved

<http://www.cdc.gov/motorvehiclesafety/calculator/>

MV PICCS: 12 Evidence-based Interventions Not in Widespread Use

Restraint Use

Primary enforcement seat belt use laws

High-visibility enforcement for seat belt & child restraint/booster seat laws

Other Categories

Automated enforcement

DUI prevention

Motorcycle helmet laws

Bicycle helmet laws

MV PICCS Provides Two Types of Analysis for States

Basic Cost Effectiveness Analysis

- Prioritized list of interventions based on individual cost-effectiveness ratios

Portfolio Analysis

- Optimized set of interventions that accounts for non-additive effects of related interventions


MV PICCS Data Sources

Cost estimates

- ❑ Journal articles
- ❑ Federal, state, and organizational reports
- ❑ Commercial sources
- ❑ Interviews with state officials and stakeholders

Effectiveness estimates

- ❑ Actual number of anticipated lives saved and injuries prevented and monetized value of these
- ❑ Published articles and reports that documented effectiveness



<http://www.cdc.gov/motorvehiclesafety/calculator/>

MV PICCS DEMONSTRATION

Use MV PICCS

Application

- Launch MV PICCS

MV PICCS Documentation

- Project Report
- User Guide
- Intervention Fact Sheets

Conclusion

- ❑ MV PICCS calculates the expected number of injuries prevented and lives saved at the state level and the costs of implementation, while taking into account available resources
- ❑ MV PICCS can help states prioritize and select from a suite of 12 effective motor vehicle injury prevention interventions that are not in widespread use

CDC Seat Belt Resources

Visit our exhibit booth to try out MV PICCS & check out our other resources

CDC's MV PICCS

<http://www.cdc.gov/motorvehiclesafety/calculator/>

CDC's Prevention Status Report

<http://www.cdc.gov/psr/motorvehicle/index.html#seat/>

Buckle Up: Restraint Use State Fact Sheets

<http://www.cdc.gov/motorvehiclesafety/seatbelts/states.html>

The Community Guide

Acknowledgement

RAND Corporation

RAND experts developed the online tool for the CDC

Thank you



For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: <http://www.cdc.gov>

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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DEMONSTRATION SLIDES

The screenshot shows the CDC website's 'Injury Prevention & Control: Motor Vehicle Safety' page. The header includes the CDC logo and a search bar. A navigation menu on the left lists various topics, with 'Motor Vehicle Prioritizing Interventions and Cost Calculator for States (MV PICCS)' selected. The main content area features a title, social media sharing options, and a brief description of the calculator. A right-hand sidebar titled 'Use MV PICCS' contains a 'Launch MV PICCS' button and links to documentation. A URL is provided at the bottom: <http://www.cdc.gov/motorvehiclesafety/calculator>.

This screenshot is identical to the one above, but with a green rectangular highlight around the 'Launch MV PICCS' button in the 'Use MV PICCS' sidebar. The rest of the page content, including the navigation menu, main text, and footer URL, remains the same.



Welcome to the Motor Vehicle PICCS (Prioritizing Interventions and Cost Calculator for States). The Motor Vehicle PICCS is a web tool that helps you review the costs and benefits of different statewide interventions designed to prevent motor vehicle-related injuries and deaths. The Motor Vehicle PICCS selects the most cost-effective combination of interventions for implementation under a given budget and user identified parameters. Currently, twelve effective interventions are available for you to select.

Let's start by indicating the state you are interested in. You can change your selection at any time.

Select a state:

Then please select one of the following options:

- Introduction - provides a quick review of what the motor vehicle PICCS offers and how to use the calculator.*
- Basic Cost-Effectiveness Analysis - allows you to conduct a traditional cost effectiveness analysis that does not consider interdependencies that exist among some interventions.*
- Portfolio Analysis - builds on the basic cost effectiveness analysis by accounting for interdependencies that exist among some interventions (e.g., interventions that all target drunk driving).*
- Library - includes a detailed user guide, fact sheets on each of the interventions, and information on input data, assumptions, and methodology.*



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**Colorado
Portfolio Analysis
(Interdependencies Incorporated)**

Candidate Intervention	Currently Implemented ¹	Intervention Name	Benefit \$/year ²	Cost \$/year ³
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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Red Light Camera	101,840,000	-4,478,000
<input checked="" type="checkbox"/>	<input type="checkbox"/>	License Plate Impound	17,046,000	-4,417,000
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Motorcycle Helmet	205,758,000	1,301,000
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Alcohol Interlocks	15,152,000	135,000
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Seat Belt Enforcement Campaign	84,964,000	1,369,000
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Primary Enforcement Seat Belt Law	110,165,000	3,149,000
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Bicycle Helmet	7,410,000	286,000
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Annual implementation budget available: \$

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Summary Results of the Interventions Chosen

Category	Value	Units
Total Cost	4,518,000	\$ per year
Total Benefit	189,200,000	\$ per year
Total # of Fatalities Reduced	43	units
Total # of Injuries Reduced	4,543	units

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Breakdown of Total Cost

Cost Component	Value	Units
Publicity	640,000	\$ per year
Police/Highway Patrol Time	6,058,000	\$ per year
Department of Motor Vehicles	0	\$ per year
Probation and Parole	0	\$ per year
Program Management	135,000	\$ per year
Equipment	0	\$ per year
Education Programs	0	\$ per year
Fines and Fees	-2,315,000	\$ per year
Impoundment	0	\$ per year
Court System	0	\$ per year
Offender-Borne Cost ⁴	0	\$ per year
Cost to Comply with the Law ³	3,046,000	\$ per year

Annual implementation budget available: \$

Make a Standard Run with Fines-Included Colorado
 Make a Standard Run with Fines-Excluded
 Run a sensitivity analysis
 Repeat run with a different state:

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Breakdown of Total Cost		
Cost Component	Value	Units
Publicity	640,000	\$ per year
Police/Highway Patrol Time	6,058,000	\$ per year
Department of Motor Vehicles	0	\$ per year
Probation and Parole	0	\$ per year
Program Management	135,000	\$ per year
Equipment	0	\$ per year
Education Programs	0	\$ per year
Fines and Fees	-2,315,000	\$ per year
Impoundment	0	\$ per year
Court System	0	\$ per year
Offender-Borne Cost ⁴	0	\$ per year
Cost to Comply with the Law ⁴	3,046,000	\$ per year

Annual implementation budget available: \$

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Item	Default Value	Valid Input Range ⁵	User Value
Injury to Fatality Ratio - Bike Helmet	<input type="text" value="171.55"/>	≥ 0	<input type="text"/>
Injury to Fatality Ratio - Motor	<input type="text" value="284.54"/>	≥ 0	<input type="text"/>
Injury to Fatality Ratio - Alcohol	<input type="text" value="36.18"/>	≥ 0	<input type="text"/>
Injury to Fatality Ratio - Passenger Vehicle	<input type="text" value="105.56"/>	≥ 0	<input type="text"/>
Injury to Fatality Ratio - All	<input type="text" value="106.54"/>	≥ 0	<input type="text"/>
Injury to Fatality Ratio - Speed	<input type="text" value="82.81"/>	≥ 0	<input type="text"/>
Injury to Fatality Ratio - Intersection	<input type="text" value="85.88"/>	≥ 0	<input type="text"/>
Injury Reduction - Sobriety Checkpoints	<input type="text" value="0.2"/>	0 to 1	<input type="text"/>
Injury Reduction - Bicycle Helmet	<input type="text" value="0.15"/>	0 to 1	<input type="text"/>
Injury Reduction - Motorcycle Helmet	<input type="text" value="0.289"/>	0 to 1	<input type="text"/>
Injury Reduction - Redlight Camera	<input type="text" value="0.17"/>	0 to 1	<input type="text"/>
Injury Reduction - Speed Camera	<input type="text" value="0.12"/>	0 to 1	<input type="text"/>
Injury Reduction - Alcohol Interlocks	<input type="text" value="0.24"/>	0 to 1	<input type="text"/>
Injury Reduction - Saturation Patrols	<input type="text" value="0.179"/>	0 to 1	<input type="text"/>
Injury Reduction - Primary Enforcement Seat Belt Law	<input type="text" value="0.07"/>	0 to 1	<input type="text"/>
Injury Reduction - License Plate	<input type="text" value="0.27"/>	0 to 1	<input type="text"/>
Injury Reduction - Limits on Diversion	<input type="text" value="0.11"/>	0 to 1	<input type="text"/>
Injury Reduction - Seat Belt Enforcement Campaign	<input type="text" value="0.054"/>	0 to 1	<input type="text"/>
Injury Reduction - Vehicle Impoundment	<input type="text" value="0.304"/>	0 to 1	<input type="text"/>
State-adjusted Cost per Fatality in \$	<input type="text" value="1546894"/>	≥ 0	<input type="text"/>
State-adjusted Cost per Injury in \$	<input type="text" value="28982.37"/>	≥ 0	<input type="text"/>

Fatality Reduction - Sobriety Checkpoints	0.081	0 to 1	
Fatality Reduction - Bicycle Helmet	0.16	0 to 1	
Fatality Reduction - Motorcycle Helmet	0.289	0 to 1	
Fatality Reduction - Redlight Camera	0.17	0 to 1	
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Fatality Reduction - License Plate	0.27	0 to 1	
Fatality Reduction - Limits on Diversion	0.11	0 to 1	
Fatality Reduction - Seat Belt Enforcement Campaign	0.054	0 to 1	
Fatality Reduction - Vehicle Impoundment	0.304	0 to 1	
Implementation Cost in \$ - Red Light Camera	-4478120	Any	
Implementation Cost in \$ - Speed Camera	-82250490	Any	
Implementation Cost in \$ - Alcohol Interlocks	134997	Any	
Implementation Cost in \$ - Sobriety Checkpoints	4183779	Any	
Implementation Cost in \$ - Saturation Patrols	8080018	Any	
Implementation Cost in \$ - Bicycle Helmet	286265	Any	
Implementation Cost in \$ - Motorcycle Helmet	1301070	Any	
Implementation Cost in \$ - Seat Belt Enforcement Campaign	1368929	Any	5000000
Implementation Cost in \$ - Primary Enforcement Seat Belt Law	2492330	Any	
Implementation Cost in \$ - License Plate	-4417264	Any	
Implementation Cost in \$ - Limits on Diversion	18352000	Any	
Implementation Cost in \$ - Vehicle Impoundment	3333259	Any	

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Colorado Portfolio Analysis (Interdependencies Incorporated)

Candidate Intervention	Currently Implemented	Intervention Name	Benefit \$/year ²	Cost \$/year ²	Selected by Model
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Primary Enforcement Seat Belt Law	110,165,000	3,492,000	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alcohol Interlocks	15,152,000	135,000	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sobriety Checkpoints	43,287,000	4,184,000	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Bicycle Helmet	7,410,000	286,000	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Motorcycle Helmet	205,795,000	1,301,000	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Red Light Camera	101,840,000	-4,478,000	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Speed Camera	72,070,000	-52,250,000	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Saturation Patrols	61,026,000	6,080,000	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	License Plate Impound	17,046,000	-4,417,000	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Limits on Diversion	6,945,000	19,352,000	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Seat Belt Enforcement Campaign	84,984,000	5,000,000	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Vehicle Impoundment	19,193,000	3,333,000	<input type="checkbox"/>

Summary Results of the Interventions Chosen			
Category	Value	Units	
Total Cost	3,492,000		\$ per year
Total Benefit	110,165,000		\$ per year
Total # of Fatalities Reduced	25		units
Total # of Injuries Reduced	2,645		units