



Understanding and Using Injury Cost Data in Your Prevention Efforts

Rebecca Spicer, PhD MPH

Dexter Taylor, PhD

CSN Economics and Data Analysis Resource Center



Tech Tips



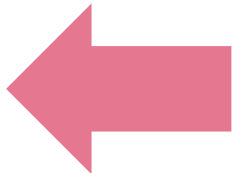
Audio is broadcast through computer speakers

Download resources from File Share pod



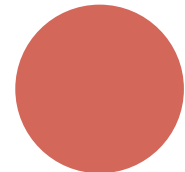
If you experience audio issues, dial **(866) 835-7973** and mute computer speakers

You are muted



Use the Q & A to ask questions at any time

This session is being recorded



Presenters

Rebecca Spicer, PhD, MPH



Dexter Taylor, PhD

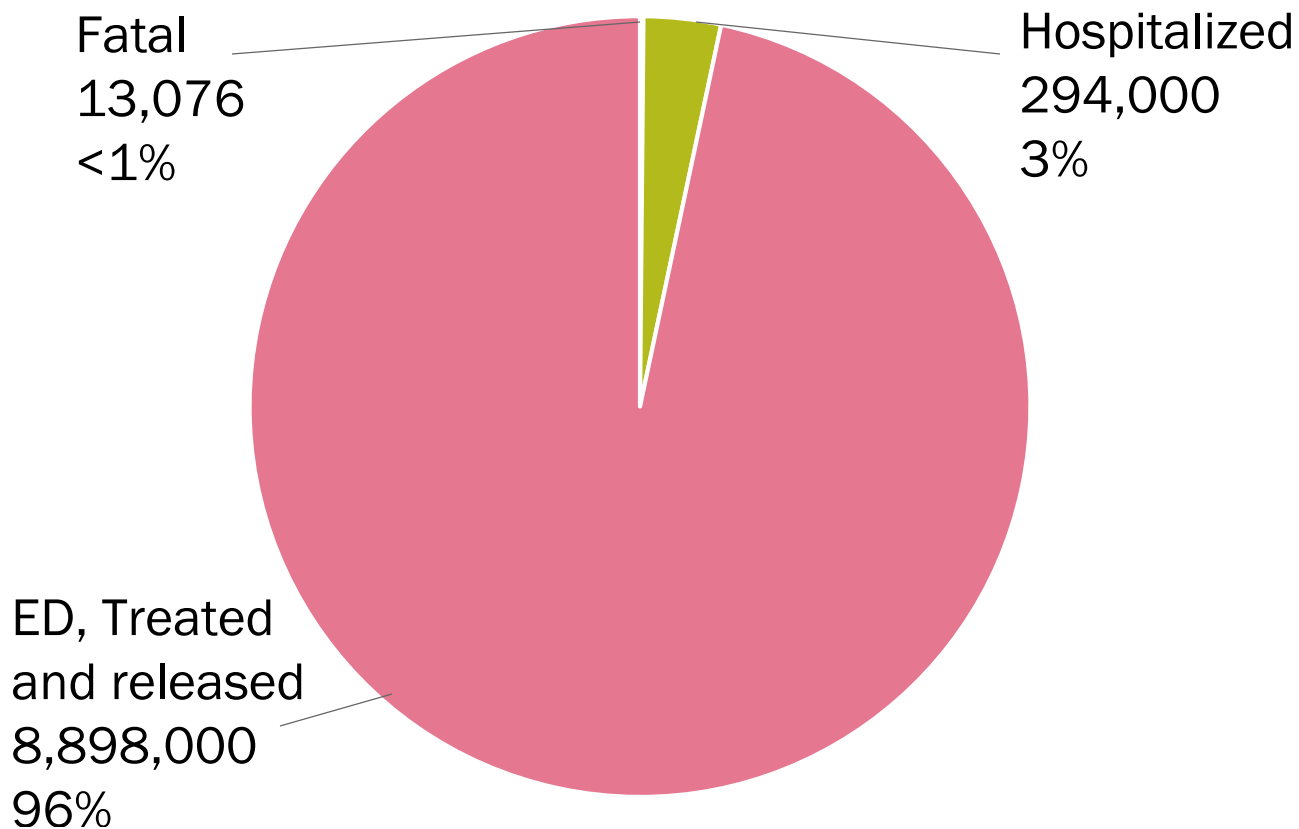


Why Use Cost Data?

Incidence data are useful for assessing the magnitude of the problem

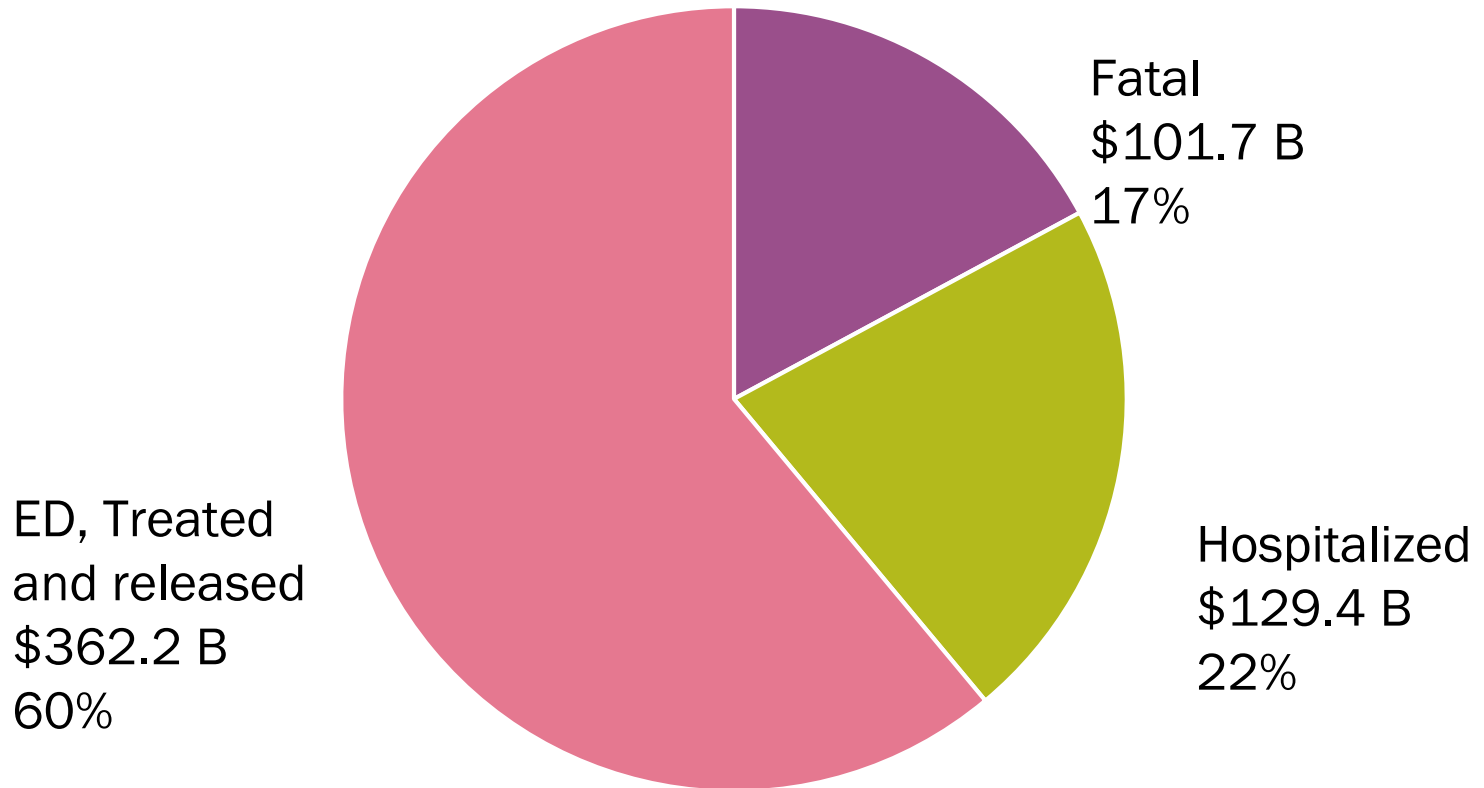
Costs measure burden by accounting for multiple injury consequences – death, severity, disability, body region, nature of injury – in a single unit of measurement.

Fatal and Severe Injury, Ages 0-19, U.S., 2012



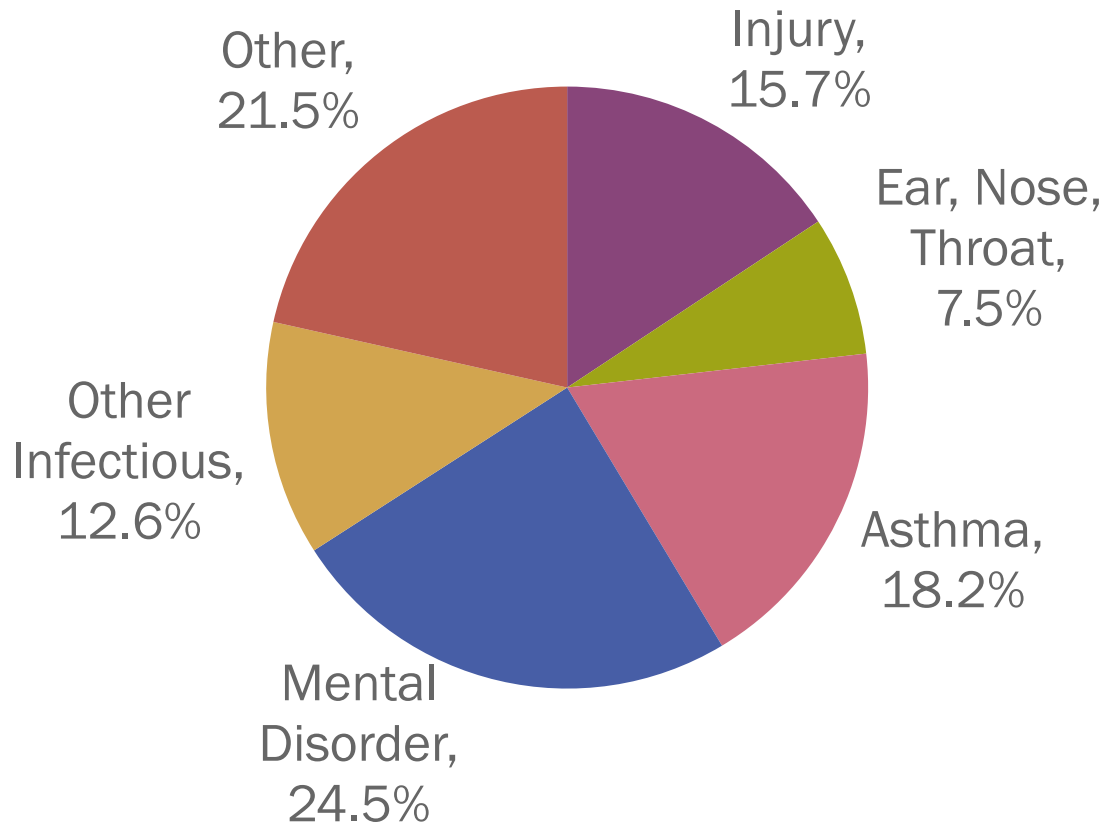
Data Sources: Deaths - NCHS Vital Statistics System, 2012, CDC WISQARS, Fatal Injury Data query
Hospitalizations - Healthcare Utilization Project, Nationwide Inpatient Sample, 2012
ED Visits - Healthcare Utilization Project, Nationwide Emergency Department Sample, 2012

Fatal and Severe Injury, Ages 0-19, US, 2012: \$594.4 Billion



Data Sources: Deaths - NCHS Vital Statistics System, 2012, CDC WISQARS, Fatal Injury Data query
Hospitalizations - Healthcare Utilization Project, Nationwide Inpatient Sample, 2012
ED Visits - Healthcare Utilization Project, Nationwide Emergency Department Sample, 2012

% of Medical Spending by Condition, Ages 0-19, United States, 2008



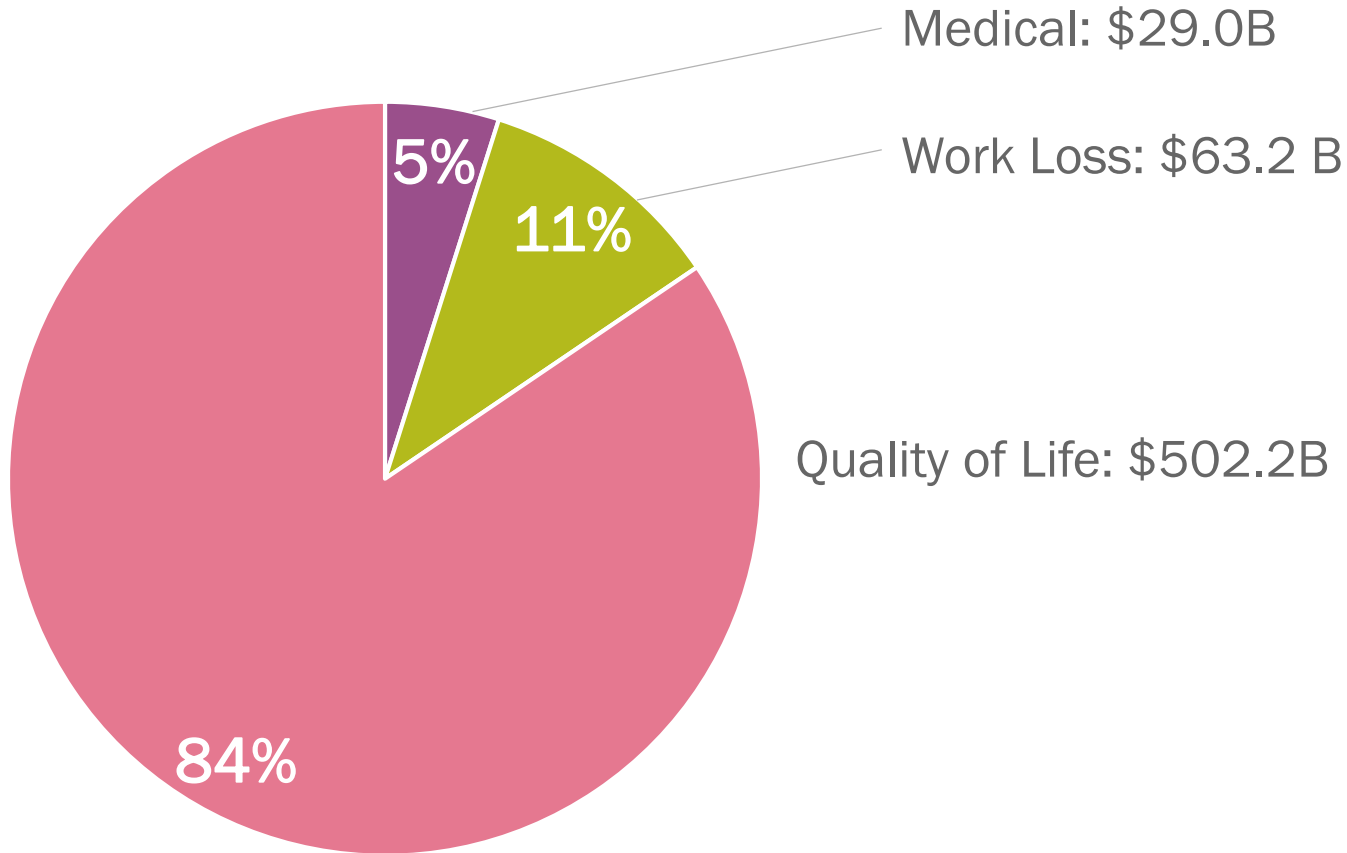
Cost Categories (2012 US\$)

Medical costs include emergency medical care, acute care (in hospital, clinic, and office settings), rehabilitation, follow-up care (including physician, allied health, and mental health care), long-term medical and institutional care, prescriptions, ancillary expenses, coroner services, and the costs of health insurance claims processing.

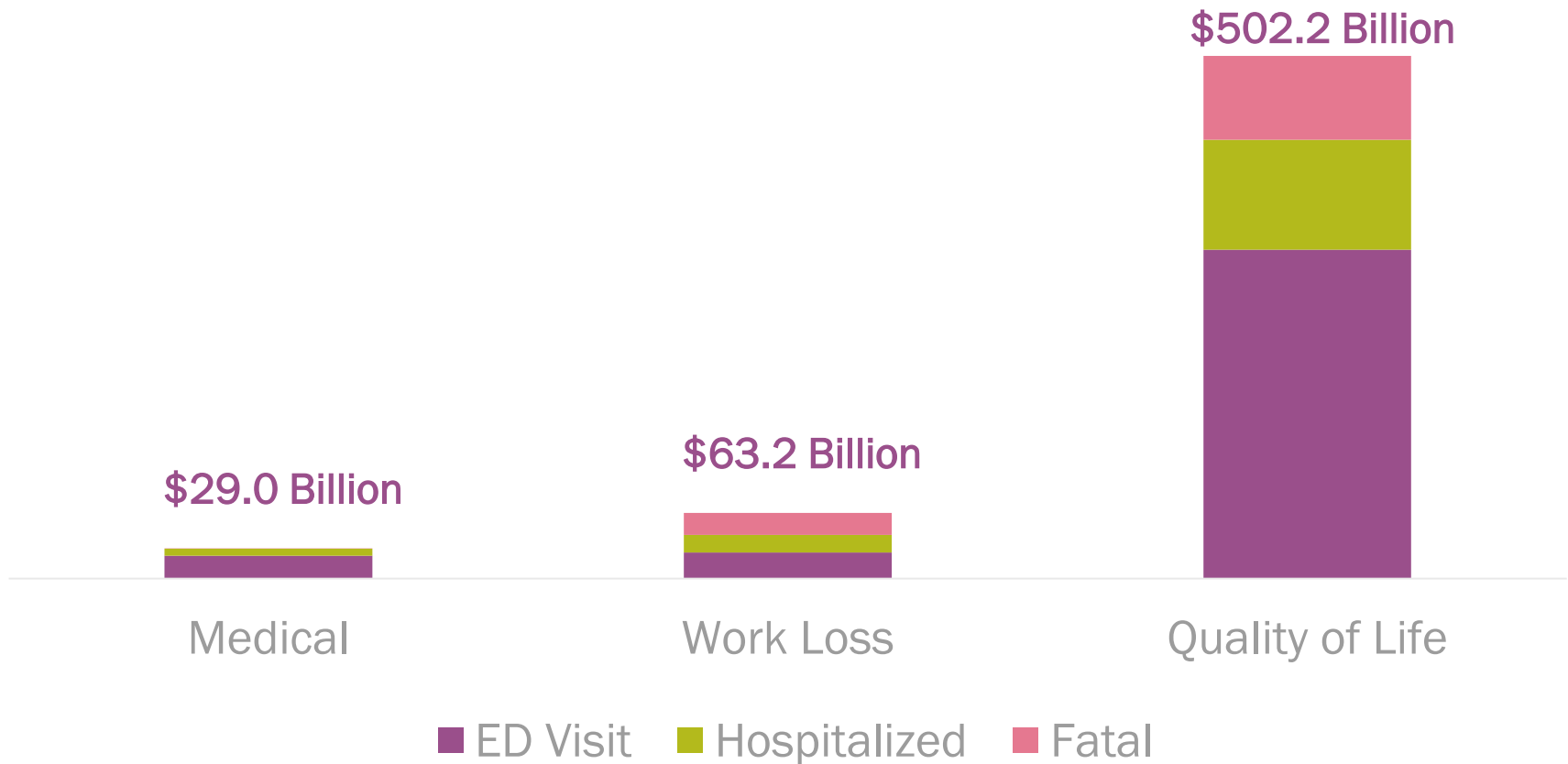
Work Loss (productivity) includes wages, fringe benefits and household work for adults. It includes short-term work loss and the present value of a lifetime's worth of wage and household work that a child will be unable to do if he or she is killed or permanently disabled.

Quality of life costs place a dollar value on the pain, suffering, and lost quality of life that children and their families experience due to death and injury.

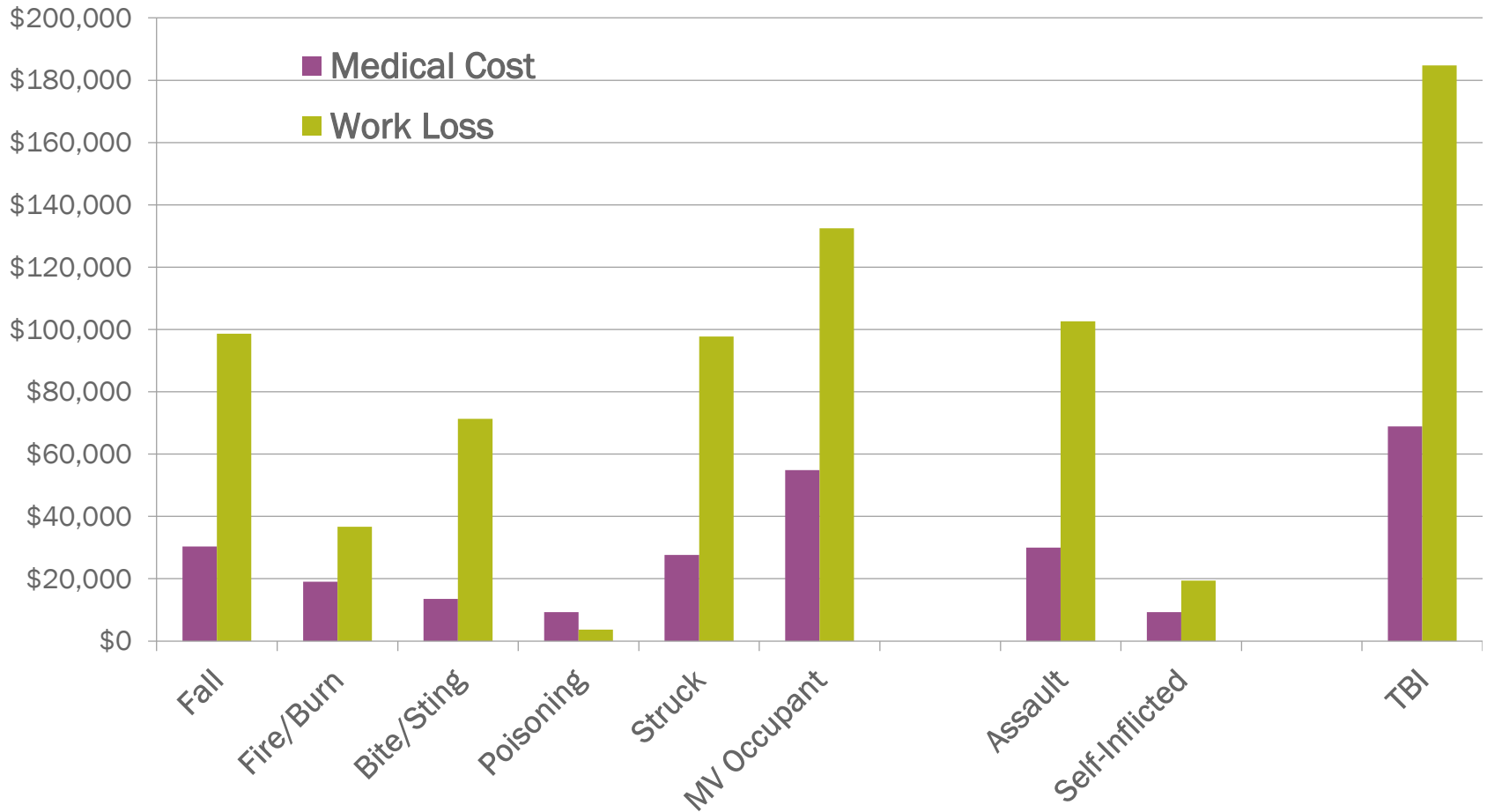
Fatal and Severe Injury, Ages 0-19, US, 2012: \$594.4 Billion



Cost of Severe and Fatal Injury, Ages 0-19, US, 2012: \$594.4 Billion



Average Cost per Hospitalized Injury, for Selected Causes, Ages 0-19



Using the CDC WISQARS Cost Module



Cost of Injury Reports

- <https://www.cdc.gov/injury/wisqars>

The screenshot shows the CDC WISQARS website. At the top left is the CDC logo and the text "Centers for Disease Control and Prevention CDC 24/7: Saving Lives, Protecting People™". A search bar is on the top right. Below the header is a dark blue banner with the text "Injury Prevention & Control: Data & Statistics (WISQARS™)". A left sidebar contains a menu with items like "About the Injury Center", "Data and Statistics (WISQARS)", "Overview", "Fatal Injury Data", "Nonfatal Injury Data", "Violent Deaths (NVDRS)", "Funded Programs, Activities and Research", "Press Room", "Social Media", and "Publications". The main content area features a "Welcome to WISQARS™" message with social media icons and a large "WISQARS Your Source for US Injury Data" logo. Below this is a grid of buttons for "FATAL INJURY DATA", "NONFATAL INJURY DATA", "VIOLENT DEATHS", "COST OF INJURY REPORTS", "FATAL INJURY MAPPING", and "ABOUT US". A purple arrow points to the "COST OF INJURY REPORTS" button. A "Get Email Updates" form is visible in the bottom left of the main content area.

Cost of Injury Reports

Reports show estimated injury costs associated with three levels of treatment:

- Death,
- Hospitalization, or
- ED treated and released.

These injuries can be classified by

- Intent, Mechanism, and Intent x Mechanism, or by
- Body Region, Nature of Injury, and Body Region x Nature of Injury

Cost of Injury Reports

In addition, the following characteristics can be selected for cost estimates:

- sex
- age or age group
- medical costs, work loss costs, or both
- national-, regional-, or state-level prices
- indexing prices for specific calendar years

Cost of Injury Reports Help Menu:

- http://www.cdc.gov/injury/wisqars/cost_help/index.html

Example: Unintentional MVT Deaths

CDC Home



Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

A-Z Index [A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#) <#>

Data & Statistics (WISQARS™): Cost of Injury Reports

[WISQARS Home](#)

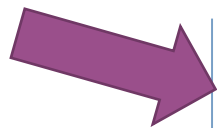
Help

Screen 1 of 3

Welcome to the Cost of Injury Reports application! Here you will find cost of injury estimates for fatal or nonfatal injuries classified either by intent and mechanism or by body region and nature of injury. [Learn more >>](#)

Important Updates: Effective 11/19/2014 the base year for Cost of Injury Reports was advanced from calendar year 2005 to calendar year 2010. With this new base year, the application now provides updated lifetime medical and work loss cost estimates for injury-related deaths, hospitalizations, and emergency department visits (treated and released) using national vital statistics data and nationally representative emergency department surveillance data for the year 2010, with cost estimates expressed in year 2010 prices. When generating cost estimates using your own data, the estimates can be indexed to prices for any year (or range of years) from 1999 to 2013. For further details, [click here](#).

Select from the report options provided below and on the next two screens. Click on the **blue** title at the top of each section for details. Reports will be generated and returned to you on the screen. You will also have the option to save the data in a spreadsheet or print the results.



Type of Injury Outcome

What was the Injury Outcome? (select only one radio button):

- Death
- Hospitalization
- ED Treated and Released

Injury Classification Scheme

How are Injuries to be Classified? (select only one radio button):

- Intent by Mechanism
- Body Region by Nature of Injury

Example: Unintentional MVT Deaths

Help ⓘ

Screen 2 of 3

< Back

Go to Next Screen >

Reset Screen

Mechanism Level

Indicate level of detail for selecting Mechanism(s) below (select only one radio button):

- Mechanism Level 1 (All Mechanisms combined)
- Mechanism Level 2 (e.g., 'Fall', 'Motor Vehicle Traffic')
 - Mechanism Level 3 (e.g., 'Fire/Flame', 'Motor Vehicle Traffic Occupant')
 - Mechanism Level 4 (Residential Fire/Flame)

Intent

- All Intents
 - Unintentional
 - Violence-related
 - Homicide
 - Legal Intervention
 - Suicide
 - Undetermined

Mechanism

- All Mechanisms of Injury
 - Cut/Pierce
 - Drowning/Submersion
 - Fall
 - Fire/Burn
 - Fire/Flame
 - Residential Fire/Flame
 - Hot Object/Substance
 - Firearm
 - Machinery
 - Natural/Environmental
 - Overexertion
 - Poisoning
 - Struck By/Against
 - Suffocation

Transportation

- Motor Vehicle, Traffic
 - Motorcyclist
 - Occupant
 - Pedal Cyclist
 - Pedestrian
 - Other Person
 - Unspecified Person



Example: Unintentional MVT Deaths

Help 

Screen 3 of 3

Report Options

- Generate a report with national data
- Generate a report with your own case counts by year

Geographic / Base Year Options

Census Region / State:

Base Year:

Demographic Options

Sex:

- All Ages (includes unknown age)
- Age Groups: To
- Custom Age Range: To

Statistical Options

Type of Lifetime Cost (select one or more boxes):

Medical Work Loss Combined

Cost Measure (select one or both boxes):

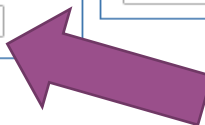
Total Average

Express Costs in (select only one radio button):

U.S. Prices Regional Prices State Prices

Output Group / Report Layout Options

Down / Row	Across / Column
<input type="text" value="Mechanism"/>	<input type="text" value="Intent"/>
<input type="text" value="None"/>	<input type="text" value="None"/>



Example: Unintentional MVT Deaths

The screenshot shows a web browser window displaying the CDC WISQARS website. The address bar shows the URL: <https://wisqars.cdc.gov:8443/costT/ProcessPart1FinishOutServlet>. The page title is "Data & Statistics (WISQARS™): Cost of Injury Reports".

A notification box in the top right corner states: "The following pop-ups were blocked on this page:" followed by the URL https://wisqars.cdc.gov:8443/costT/cost_Part1_Finished.jsp. Below this, there are two radio button options: "Always allow pop-ups from https://wisqars.cdc.gov:8443" (unselected) and "Continue blocking pop-ups" (selected). A "Manage pop-up blocking..." link and a "Done" button are also present.

A large purple starburst graphic with the text "Pop-Up Blocked" in blue is overlaid on the right side of the page. A purple arrow points from the starburst towards the notification box.

The main content area of the website includes a "Help" link, "Screen 3 of 3" indicator, and several sections for report generation options:

- Report Options:** Generate a report with national data; Generate a report with your own case counts by year.
- Geographic / Base Year Options:** Census Region / State: United States; Base Year: 2010.
- Demographic Options:** Sex: Both Sexes; All Ages (includes unknown age); Age Groups: 0-4 To 0-4; Custom Age Range: 10 To 19.
- Statistical Options:** Type of Lifetime Cost (select one or more boxes): Medical, Work Loss, Combined; Cost Measure (select one or both boxes): Total, Average; Express Costs in (select only one radio button): U.S. Prices, Regional Prices, State Prices.
- Output Group / Report Layout Options:** Down / Row: Mechanism; Across / Column: Intent; None; None.

Buttons for "< Back", "Generate Report", and "Reset Screen" are visible at the bottom of the options sections.

Example: Unintentional MVT Deaths

[Printable View](#) [Export Data](#)

Fatal Injuries, Both Sexes, Ages 10 to 19 , United States, 2010
Intent: Unintentional
Mechanism: Motor Vehicle-Traffic
Number of Deaths and Estimated Average and Total Lifetime Costs
Classified by Mechanism and Intent
Costs Expressed in 2010 U.S. Prices

Deaths and Type of Cost			Intent
			Unintentional
Mechanism	Deaths	--	3,347
	Medical Cost	Average	\$9,491
		Total	\$31,767,000
Motor Vehicle - Traffic	Work Loss Cost	Average	\$1,686,971
		Total	\$5,646,292,000
	Combined Cost	Average	\$1,696,462
	Total	\$5,678,059,000	

Example: Unintentional MVT Deaths

Fatal Injuries, Both Sexes, Ages 10 to 19 , United States, 2010

Intent: Unintentional

Mechanism: Motor Vehicle-Traffic

Number of Deaths and Estimated Average and Total Lifetime Costs

Classified by Mechanism and Intent

Costs Expressed in 2010 U.S. Prices

Deaths and Type of Cost			Intent
			Unintentional
Mechanism			
Motor Vehicle - Traffic	Deaths	--	3,347
	Medical Cost	Average	\$9,491
		Total	\$31,767,000
	Work Loss Cost	Average	\$1,686,971
		Total	\$5,646,292,000
	Combined Cost	Average	\$1,696,462
		Total	\$5,678,059,000

Injury Classification Scheme: Mechanism by Intent of Injury.

Reports for All Ages include those of unknown age.

* Cost estimates based on 25 or fewer deaths may be unstable. Interpret with caution.

Note: For injury-related deaths, lifetime medical costs refer to the medical costs associated with the fatal injury event.

Produced by: National Center for Injury Prevention and Control, CDC

Data Source: NCHS Vital Statistics System for numbers of deaths. NEISS All Injury Program operated by the U.S. Consumer Product Safety Commission (CPSC) for numbers of nonfatal injuries. Pacific Institute for Research and Evaluation (PIRE), Calverton, MD for unit cost estimates.

Example: Unintentional MVT Deaths, MD

Help 

Screen 3 of 3

[< Back](#) [Generate Report](#) [Reset Screen](#)

Report Options

- Generate a report with national data
- Generate a report with your own case counts by year

Geographic / Base Year Options

Census Region / State:

Base Year:

Demographic Options

Sex:

- All Ages (includes unknown age)
- Age Groups: To
- Custom Age Range: To

Statistical Options

Type of Lifetime Cost (select one or more boxes):

Medical Work Loss Combined

Cost Measure (select one or both boxes):

Total Average

Express Costs in (select only one radio button):

U.S. Prices Regional Prices State Prices

Output Group / Report Layout Options

Down / Row Across / Column

[< Back](#) [Generate Report](#)

Example: Unintentional MVT Deaths, MD

Fatal Injuries, Both Sexes, Ages 10 to 19 , Maryland, 2010

Intent: Unintentional

Mechanism: Motor Vehicle-Traffic

Number of Deaths and Estimated Total Lifetime Costs

Classified by Mechanism and Intent

Costs Expressed in 2010 U.S. Prices

Deaths and Type of Cost			Intent	
			Unintentional	Total
Mechanism				
Motor Vehicle - Traffic	Deaths	--	48	48
	Medical Cost	Total	\$675,000*	\$675,000*
	Work Loss Cost	Total	\$82,258,000	\$82,258,000
	Combined Cost	Total	\$82,933,000	\$82,933,000
Total	Deaths	--	48	48
	Medical Cost	Total	\$675,000*	\$675,000*
	Work Loss Cost	Total	\$82,258,000	\$82,258,000
	Combined Cost	Total	\$82,933,000	\$82,933,000

Injury Classification Scheme: Mechanism by Intent of Injury.

Reports for All Ages include those of unknown age.

Total cost estimates are additive both within the state and across states to the U.S. total.

* Cost estimates based on 20 or fewer deaths are considered unstable. Estimates based on more than 20 deaths may also be unstable due to high relative variability of case-level costs. Interpret unstable estimates with caution.

Note: For injury-related deaths, lifetime medical costs refer to the medical costs associated with the fatal injury event.

Produced by: National Center for Injury Prevention and Control, CDC

Data Source: NCHS Vital Statistics System for numbers of deaths, NEDSS All Injury Program operated by the U.S. Consumer Product Safety Commission (CPSC) for numbers of nonfatal injuries, Pacific Institute for Research and Evaluation (PIRE), Calverton, MD for unit cost estimates.

Example: Unintentional MVT Deaths, MD

Help ⓘ

Screen 3 of 3

< Back
Enter Case Counts
Reset Screen

Report Options

Generate a report with national data

Generate a report with your own case counts by year

Start Year: 2014 End Year: 2014 Index Costs to: 2014

Geographic / Base Year Options

Census Region / State: Maryland

Base Year: 2010

Demographic Options

Sex: Both Sexes

All Ages (includes unknown age)

Age Groups: 0-4 To 0-4

Custom Age Range: 10 To 19

Statistical Options

Type of Lifetime Cost (select one or more boxes):

Medical Work Loss Combined

Cost Measure: Total

Express Costs in (select only one radio button):

U.S. Prices Regional Prices State Prices

Output Group / Report Layout Options

Down / Row	Across / Column
Year	Intent
Mechanism	None
None	

< Back Enter Case Counts

Example: Unintentional MVT Deaths, MD

Fatal Injuries, Both Sexes, Ages 10 to 19, Maryland, 2014

Intent: Unintentional

Mechanism: Motor Vehicle-Traffic

Classified by Mechanism and Intent

Data Entry Table (User-Specified Incidence Counts)

(Average Costs are Expressed in United States Prices for the Year 2014)

Year	Mechanism	Intent	Enter	Average	Average	Death Count
			Number of Deaths	Medical Costs	Work Loss Costs	Used for Averages
2014	Motor Vehicle - Traffic	Unintentional	<input type="text" value="25"/>	\$15,048	\$1,857,517	48
			Add your own subtitle =>	<input type="text" value="MVT Deaths, MD 2014"/>		
						<input type="button" value="Generate Report"/>

Base year for average costs is 2010. Base year costs are then indexed to 2014 prices.

Note that some requested categories may be missing from this intermediate table because no relevant deaths occurred during the base year; therefore, no system-generated average cost estimate is available.

Note that the total cost estimates in the final report, which will be produced by combining system-generated average cost estimates with user-entered case counts in this intermediate table, will not be evaluated for statistical stability.

Example: Unintentional MVT Deaths, MD

Fatal Injuries, Both Sexes, Ages 10 to 19 , Maryland, 2014

Intent: Unintentional

Mechanism: Motor Vehicle-Traffic

Number of Deaths and Estimated Total Lifetime Costs

Classified by Mechanism and Intent

Costs Expressed in 2014 U.S. Prices

MVT Deaths, MD 2014

Deaths and Type of Cost			Intent	
Year	Mechanism		Unintentional	
2014	Motor Vehicle - Traffic	Deaths	--	25
		Medical Cost	Total	\$376,000
		Work Loss Cost	Total	\$46,438,000
		Combined Cost	Total	\$46,814,000

Injury Classification Scheme: Mechanism by Intent of Injury.

Reports for All Ages include those of unknown age.

Base year for average costs is 2010. Base year costs are then indexed to 2014 prices.

Note: For injury-related deaths, lifetime medical costs refer to the medical costs associated with the fatal injury event.

Note that the total cost estimates in this report, produced by combining system-generated average cost estimates with user-entered case counts from the intermediate data entry table, were not evaluated for statistical stability.

Produced by: National Center for Injury Prevention and Control, CDC

Data Source: NCHS Vital Statistics System for numbers of deaths. NEISS All Injury Program operated by the U.S. Consumer Product Safety Commission (CPSC) for numbers of nonfatal injuries. Pacific Institute for Research and Evaluation (PIRE), Calverton, MD for unit cost estimates.

Example: Unintentional MVT Hospitalizations, MD

Help 

Screen 1 of 3

Welcome to the Cost of Injury Reports application! Here you will find cost of injury estimates for fatal or nonfatal injuries classified either by intent and mechanism or by body region and nature of injury. [Learn more >>](#)

Important Updates: Effective 11/19/2014 the base year for Cost of Injury Reports was advanced from calendar year 2005 to calendar year 2010. With this new base year, the application now provides updated lifetime medical and work loss cost estimates for injury-related deaths, hospitalizations, and emergency department visits (treated and released) using national vital statistics data and nationally representative emergency department surveillance data for the year 2010, with cost estimates expressed in year 2010 prices. When generating cost estimates using your own data, the estimates can be indexed to prices for any year (or range of years) from 1999 to 2013. For further details, [click here](#).

Select from the report options provided below and on the next two screens. Click on the **blue** title at the top of each section for details. Reports will be generated and returned to you on the screen. You will also have the option to save the data in a spreadsheet or print the results.

Type of Injury Outcome

What was the Injury Outcome? (select only one radio button):

- Death
- Hospitalization
- ED Treated and Released



Injury Classification Scheme

How are Injuries to be Classified? (select only one radio button):

- Intent by Mechanism
- Body Region by Nature of Injury

Go to Next Screen >

Example: Unintentional MVT Hospitalizations, MD



Hospital-Admitted Injuries, Age 10-19, 2012 Maryland

Table 1b: Incidence and Rates (per 100,000) of Hospital-Admitted Injuries by Intent, Mechanism, and Age Group, 2012

Intent/Mechanism	Age 10-14		Age 15-19		Ages 10-19	
	Age 10-14	Rate	Age 15-19	Rate	Total	Rate
Total Incidence	404	107.1	1,403	354.3	1,807	233.7
Unintentional	318	84.3	831	209.8	1,149	148.6
Cut/Pierce	12	3.2	23	5.8	35	4.5
Drowning	****	****	****	****	****	****
Fall	104	27.6	176	44.4	280	36.2
Fire/Burn	11	2.9	21	5.3	32	4.1
<i>Fire/Flame</i>	****	****	****	****	14	1.8
<i>Hot Object/Substance</i>	****	****	11	2.8	****	****
Firearm	****	****	****	****	****	****
Machinery	0	0.0	****	****	****	****
Motor Vehicle Traffic	54	14.3	312	78.8	366	47.1
<i>Occupant</i>	22	5.8	195	49.2	217	28.0
<i>Motorcyclist</i>	****	****	32	8.1	****	****
<i>Pedal Cyclist</i>	****	****	17	4.3	****	****
<i>Pedestrian</i>	21	5.6	51	12.9	72	9.3
<i>Unspecified</i>	****	****	14	3.5	****	****
<i>Other</i>	0	0.0	****	****	****	****
Pedal Cyclist, Other	24	6.4	21	5.3	45	5.8
Pedestrian, Other	0	0.0	****	****	****	****
Transport, Other	15	4.0	54	13.6	69	8.9
Bites and Stings	15	4.0	12	3.0	27	3.5
Other Natural/Environmental	****	****	****	****	12	1.6
Overexertion	****	****	****	****	15	1.9
Poisoning	****	****	66	16.7	****	****
Struck By/Against	45	11.9	92	23.2	137	17.7
Suffocation	****	****	****	****	****	****
Other	****	****	17	4.3	****	****
Self-Inflicted	70	18.6	331	83.6	401	51.9



<https://www.childrenssafetynetwork.org/sites/childrenssafetynetwork.org/files/Maryland2016.pdf>

<https://www.childrenssafetynetwork.org/states>

Example: Unintentional MVT Hospitalizations, MD

Help 

Screen 2 of 3

Mechanism Level

Indicate level of detail for selecting Mechanism(s) below (select only one radio button):

- Mechanism Level 1 (All Mechanisms combined)
- Mechanism Level 2 (e.g., 'Fall', 'Motor Vehicle Occupant')
- Mechanism Level 3 (e.g., 'Dog Bite', 'MV Traffic Occupant')

Intent

- All Intents
- Unintentional
- Violence-related
 - Assault
 - Assault-Other
 - Assault-Sexual
 - Legal Intervention
 - Self-Harm

Mechanism

- All Mechanisms of Injury
 - Cut/Pierce
 - Drowning/Submersion
 - Fall
 - Fire/Burn
 - Gunshot
 - Firearm
 - BB/Pellet
 - Foreign Body
 - Machinery
 - Natural/Environmental
 - Bite/Sting
 - Dog Bite
 - Other Bite/Sting
 - Overexertion
 - Poisoning
 - Struck By/Against
 - Suffocation
- Transportation
- Motor Vehicle Occupant
 - MV Traffic Occupant



Example: Unintentional MVT Hospitalizations, MD

Help ⓘ

Screen 3 of 3

< Back
Enter Case Counts
Reset Screen

Report Options

- Generate a report with national data
- Generate a report with your own case counts by year

Start Year: 2012
End Year: 2012
Index Costs to: 2012

Geographic / Base Year Option

Geographic Area: United States

Base Year: 2010

Demographic Options

Sex: Both Sexes

- All Ages (includes unknown age)
- Age Groups: 0-4 To 0-4
- Custom Age Range: 10 To 19

< Back
Enter Case Counts

Statistical Options

Type of Lifetime Cost (select one or more boxes):

- Medical
- Work Loss
- Combined

Cost Measure:

Total

Costs Expressed in:

U.S. Prices

Output Group / Report Layout Options

Down / Row

Across / Column

Year
Mechanism
None

Intent
None

Example: Unintentional MVT Hospitalizations, MD

U.S. | Why did sex assault 'Surviv... | CDC - Injury - WISQARS C... | CDC - Injury - WISQARS C... | https://www.google.com/ x

https://wisqars.cdc.gov:8443/costT/cost_Part1_Finished.jsp

CDC Home
Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

A-Z Index | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | #

Data & Statistics (WISQARS™): Cost of Injury Reports

Nonfatal Hospitalized Injuries, Both Sexes, Ages 10 to 19, United States, 2012
Intent: Unintentional
Mechanism: MV Occupant-Traffic
Classified by Mechanism and Intent
Data Entry Table (User-Specified Incidence Counts)
(Average Costs are Expressed in United States Prices for the Year 2012)

Year	Mechanism	Intent	Enter	Average	Average	Estimated Case Count
			Number Hospitalized	Medical Costs	Work Loss Costs	Used for Averages
2012	MV-Occupant Traffic	Unintentional	217	\$55,244	\$135,096	21,904
			Add your own subtitle =>	Occupant, MD 10-19		
						Generate Report

Base year for average costs is 2010. Base year costs are then indexed to 2012 prices.

Note that some requested categories may be missing from this intermediate table because no relevant injuries appear in the data for the base year; therefore, no system-generated average cost estimate is available.

Note that the total cost estimates in the final report, which will be produced by combining system-generated average cost estimates with user-entered case counts in this intermediate table, will not be evaluated for statistical stability.

Example: Unintentional MVT Hospitalizations, MD

Nonfatal Hospitalized Injuries, Both Sexes, Ages 10 to 19 , United States, 2012

Intent: Unintentional

Mechanism: MV Occupant-Traffic

Estimated Number of Nonfatal Injuries and Total Lifetime Costs

Classified by Mechanism and Intent

Costs Expressed in 2012 U.S. Prices

MVT Occupant, MD 10-19

Hospitalizations and Type of Cost				Intent
Year	Mechanism			Unintentional
2012	MV-Occupant Traffic	Number Hospitalized	--	217
		Medical Cost	Total	\$11,988,000
		Work Loss Cost	Total	\$29,316,000
		Combined Cost	Total	\$41,304,000

Injury Classification Scheme: Mechanism by Intent of Injury.

Reports for All Ages include those of unknown age.

Base year for average costs is 2010. Base year costs are then indexed to 2012 prices.

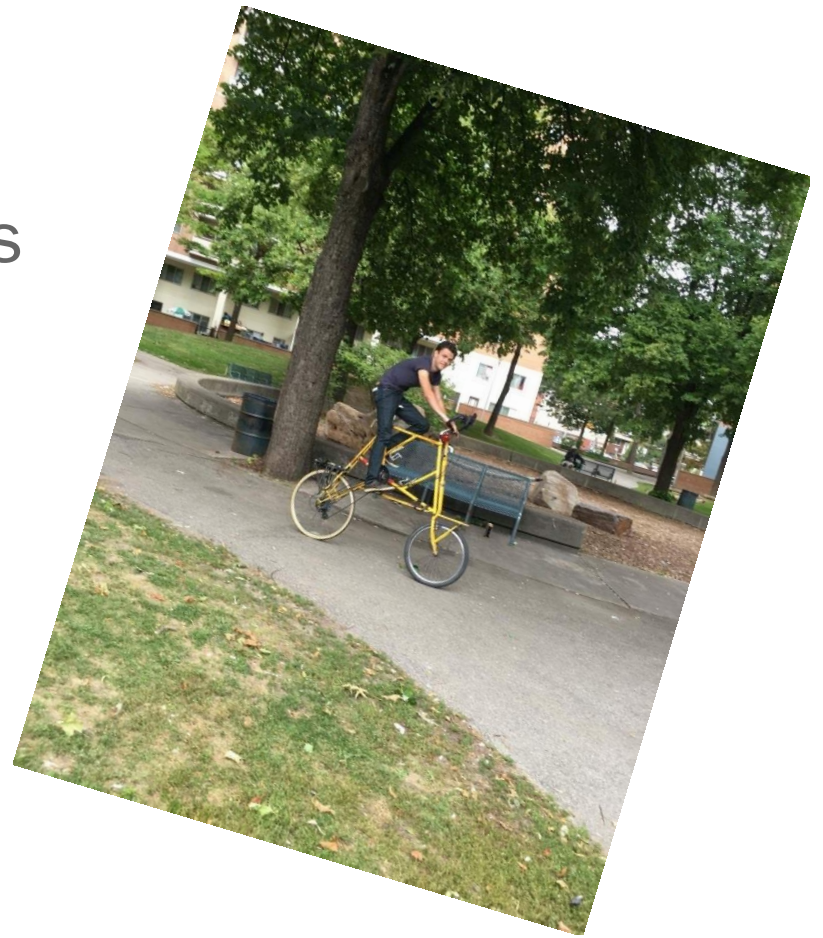
Note that the total cost estimates in this report, produced by combining system-generated average cost estimates with user-entered case counts from the intermediate data entry table, were not evaluated for statistical stability.

Produced by: National Center for Injury Prevention and Control, CDC

Data Source: NCHS Vital Statistics System for numbers of deaths. NEISS All Injury Program operated by the U.S. Consumer Product Safety Commission (CPSC) for numbers of nonfatal injuries. Pacific Institute for Research and Evaluation (PIRE), Calverton, MD for unit cost estimates.

Usefulness of Cost Analyses

- Priority Setting
- Education
- Selection of Interventions



Priority-Setting

- Can compare different problems using one common unit (\$)
- Informs resource allocation
- Using cost of injury places a greater weight on severe nonfatal injuries



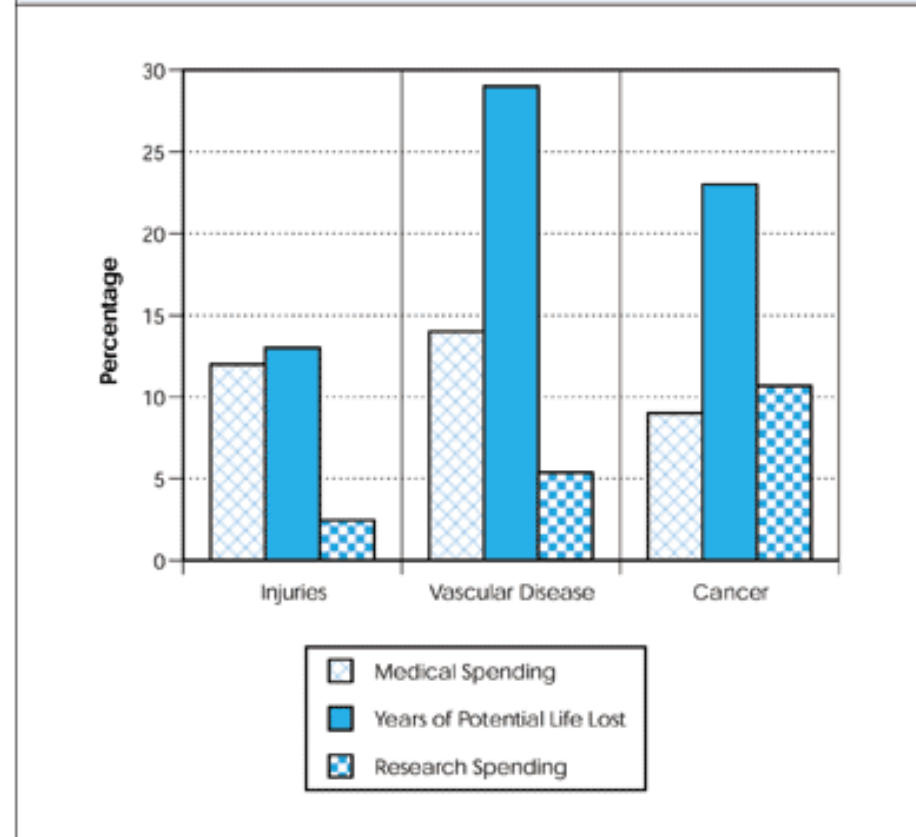
Leading Causes of Hospitalized Injury Costs, United States, 2013

Rank	Age 0-4	Age 5-9	Age 10-14	Age 15-19
1	Fall	Fall	Fall	MVT Occupant
2	Assault	MVT Pedestrian	Struck by/Against	Fall
3	Unspecified 2,720	Struck by/against	MVT Pedestrian	Assault
4	Struck by/against	Pedalcyclist, non-MVT	Transport, other	Struck by/against
5	MVT Occupant	Transport, other	Pedalcyclist non-MVT	Transport, other
6	Hot obj/subst	MVT Occupant	MVT Occupant	Self-Inflicted
7	Submersion	Other Spec	Self-Inflicted	MVT Pedestrian
8	Other Spec	Submersion	Assault	MVT Motorcyclist
9	Bites/stings	Bites/stings	MVT Pedalcyclist	Pedalcyclist non-MVT
10	MVT	Assault	Unspecified	Unspecified

Research Priorities

Figure 2

Years of Potential Life Lost, Medical Spending, and Research Budgets for Injury, Vascular Disease (Heart Disease and Stroke), and Cancer



Source: Miller, Romano, and Spicer (2000). *The cost of childhood unintentional Injuries and the value of prevention. The Future of Children, 10(1):137-163.*

Sources: Computations by authors from data in National Center for Injury Prevention and Control, Inventory of federally funded research in injury prevention and control, 1995. Database, Atlanta, GA; Centers for Disease Control, 1997; National Institutes of Health Web site; Bureau of the Census, Statistical Abstract of the United States 1997, Washington, DC: U.S. Government Printing Office, 1997, Tables 144 and 153; and National health care data sets.

Education

- Convey injury prevention in a way that captures the attention of policy-makers, the media, and the public



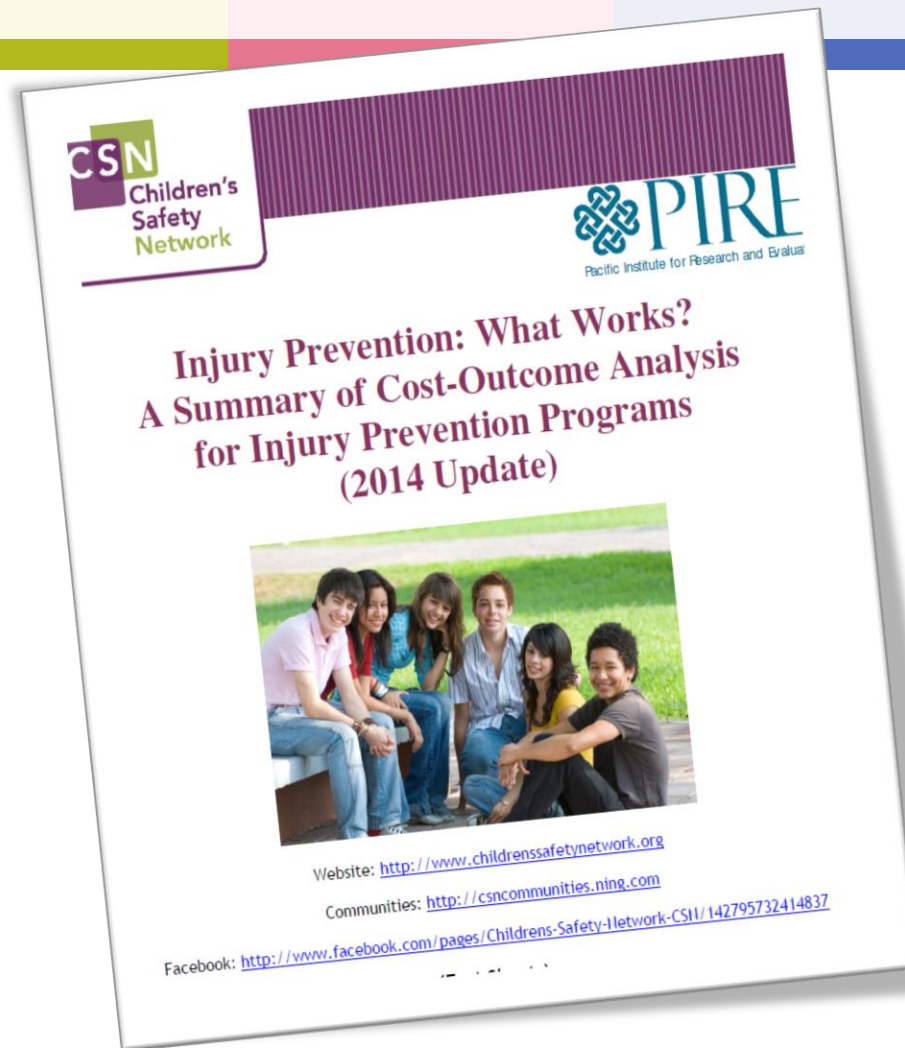
Selected Cost-Benefit Analyses

Every Dollar Spent On	Saves Society (in 2013 dollars)
Childproof Cigarette Lighter	\$77
Booster Seat	\$71
Bicycle Helmet	\$48
Child Safety Seat	\$42
Zero Alcohol Tolerance, Driver Under 21	\$25
Smoke Alarm	\$17
Pediatrician Counseling	\$9
Poison Control Center	\$8

Children's Safety Network, Injury Prevention: What Works? A summary of cost outcome analysis for injury prevention programs (2013 update).

Source: Children's Safety Network,
Injury Prevention: What Works?
A summary of cost outcome analysis for injury prevention programs (2014 update).

Resource



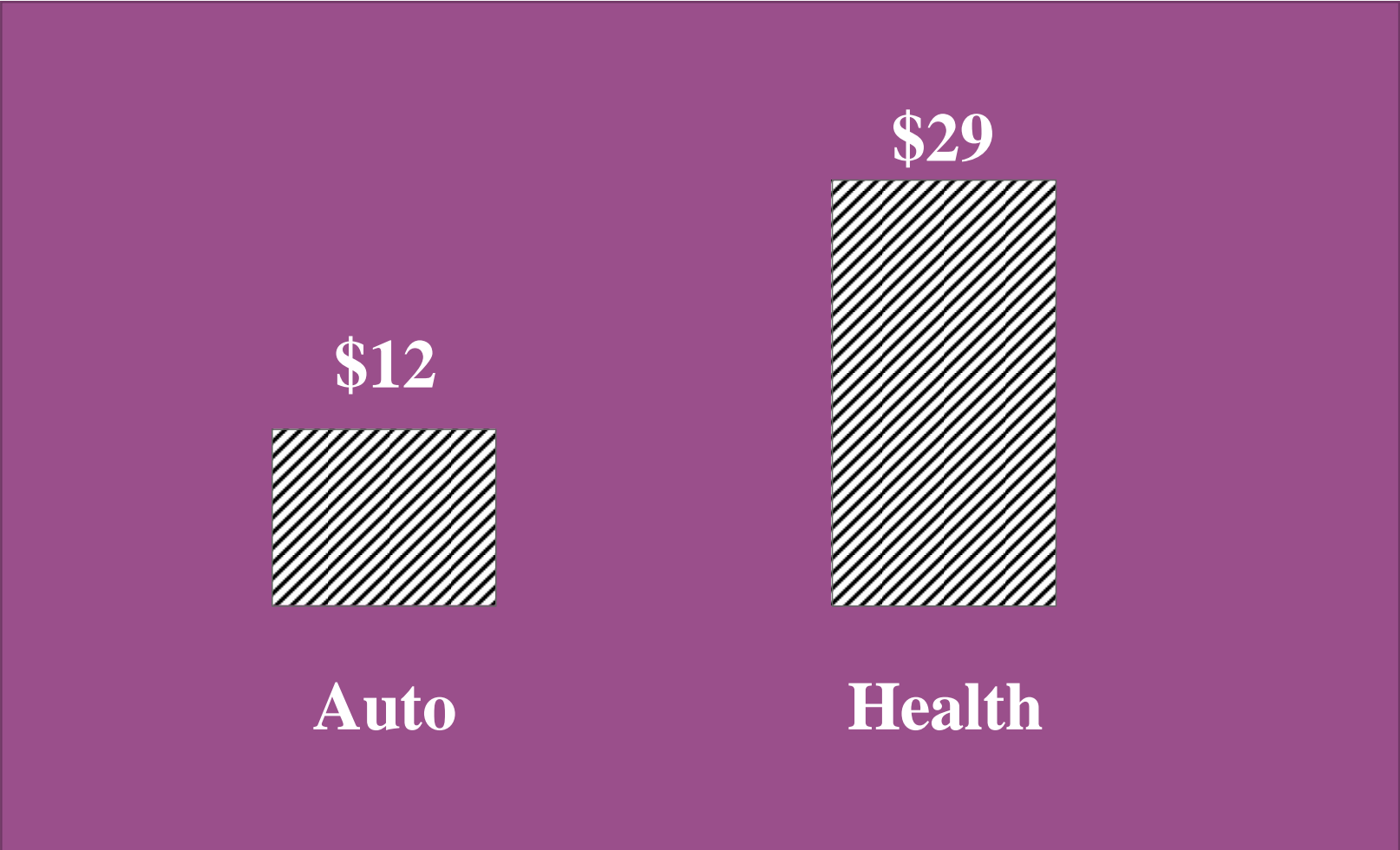
<https://www.childrensafetynetwork.org/publications/whatworks2014>

Who Pays?

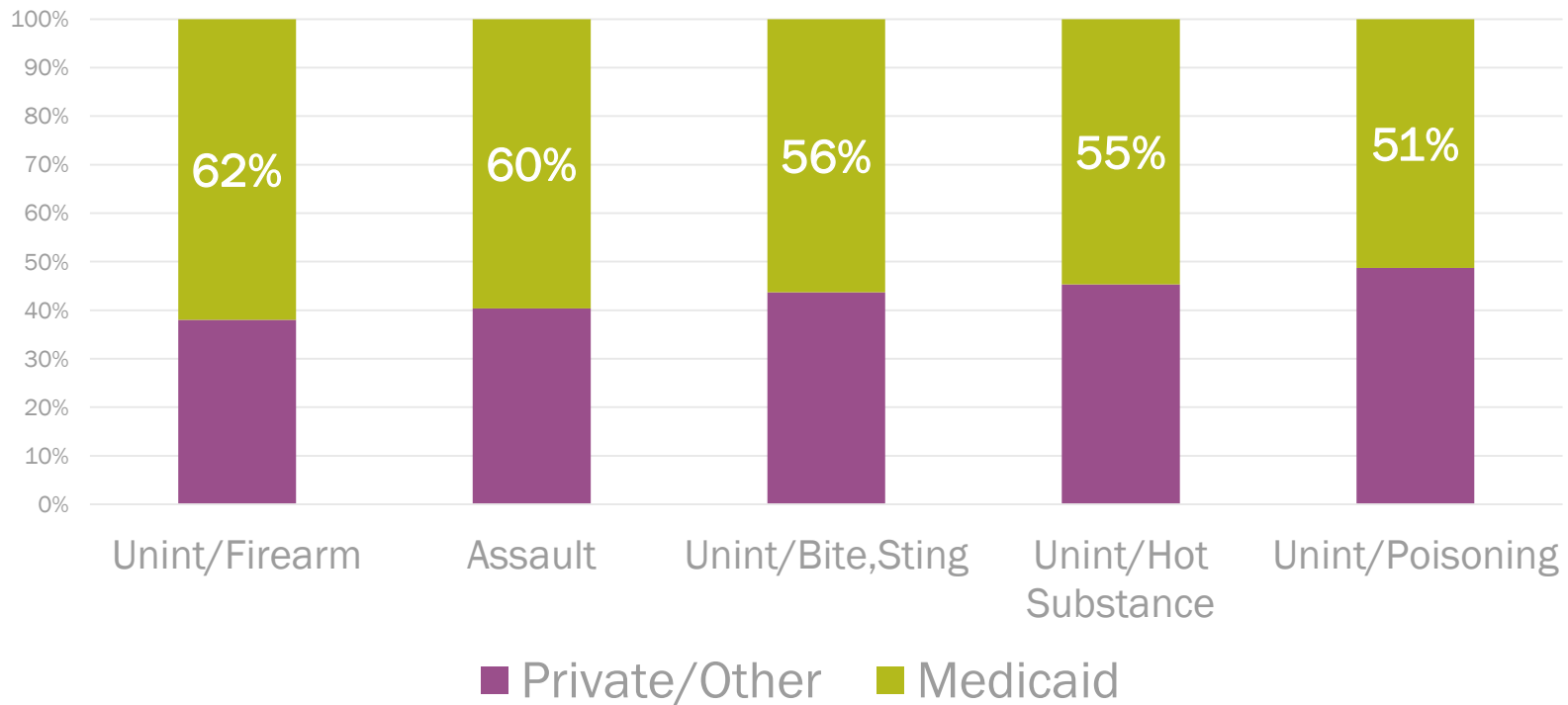
- Who benefits from injury prevention?



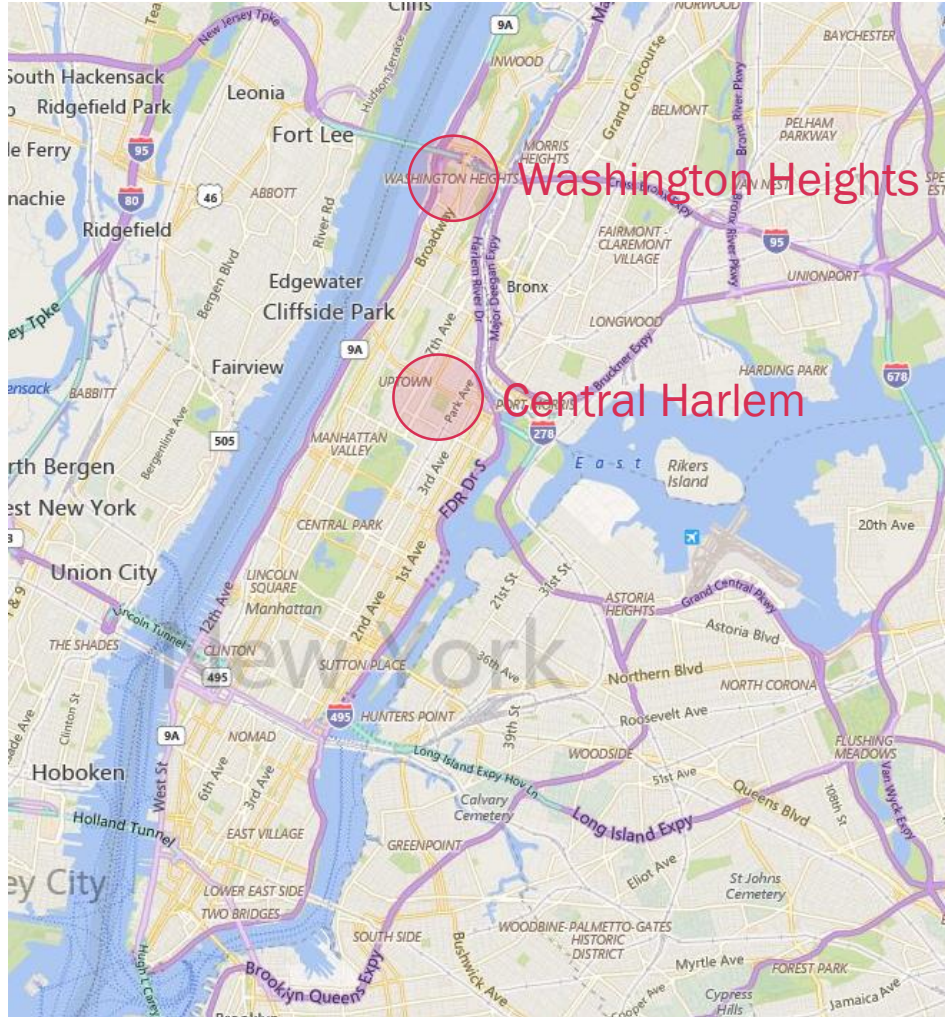
Every Bicycle Helmet Saves Insurers \$41



The Government Pays, Select Causes



Example: Cost of Child and Adolescent Injuries in Central Harlem versus Washington Heights



The Data

Obtained from the Northern Manhattan Injury Surveillance System (NMIS)

Case Definition:

- Hospitalization for assault, gunshot, outdoor fall and traffic injury
- Age 5-16
- Years 1985-1988

	Central Harlem	Washington Hts
Population	19,000	43,000
Hospitalizations, 1985-1988	568	818

Body Part	Nature of Injury	Central Harlem	Washington Heights
Head and Neck	Fracture	***	***
Head and Neck	Dislocation	***	***
Head and Neck	Sprain/Strain	***	***
Head and Neck	Internal	***	***
Head and Neck	Open wound	***	***
Head and Neck	Amputation	***	***
Head and Neck	Blood Vessel	***	***
Head and Neck	Superficial/Contusion	***	***
Head and Neck	Crushing	***	***
Head and Neck	Burn	***	***
Head and Neck	Nerve Damage	***	***
Head and Neck	Other	***	***
Torso	Fracture	***	***
Torso	Dislocation	***	***
Torso	Sprain/Strain	***	***
Torso	Internal	***	***
Torso	Open wound	***	***
Torso	Amputation	***	***
Torso	Blood Vessel	***	***
Torso	Superficial/Contusion	***	***
Torso	Crushing	***	***
Torso	Burn	***	***
Torso	Nerve Damage	***	***
Torso	Other	***	***
Extremities	Fracture	***	***
Extremities	Dislocation	***	***
Extremities	Sprain/Strain	***	***
Extremities	Internal	***	***
Extremities	Open wound	***	***
Extremities	Amputation	***	***
Extremities	Blood Vessel	***	***
Extremities	Superficial/Contusion	***	***
Extremities	Crushing	***	***
Extremities	Burn	***	***
Extremities	Nerve Damage	***	***
Extremities	Other	***	***
Unclassified	Fracture	***	***
Unclassified	Dislocation	***	44***
Unclassified	Sprain/Strain	***	***

Using
WISQARS,
compute the
medical
spending on
these Injuries.

https://wisqars.cdc.gov:8443/costT/cost_Part1_Finished.jsp

CDC Home
Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

A-Z Index A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Data & Statistics (WISQARS™): Cost of Injury Reports

Nonfatal Hospitalized Injuries, Both Sexes, Ages 0 to 19, United States, 1999
Body Region: Head & Neck, Torso, Extremities, Unclassified by Site
Nature of Injury: All
Classified by Body Region and Nature of Injury
Data Entry Table (User-Specified Incidence Counts)
(Average Costs are Expressed in United States Prices for the Year 1999)

Year	Body Region	Nature of Injury	Enter	Average	Average	Estimated Case Count
			Number Hospitalized	Medical Costs	Work Loss Costs	
1999	Head and Neck	Fracture		\$32,559	\$72,660	20,025
		Dislocation		\$11,068*	\$29,399*	7*
		Sprains/Strains		\$11,691*	\$40,401*	800
		Internal		\$49,651	\$140,724	40,541
		Open Wound		\$10,427	\$66,941	9,071
		Blood Vessel		\$28,713*	\$24,439*	279
		Contusion/Superficial		\$8,773	\$22,792	6,078
		Burns		\$10,639	\$17,393	2,712
		Nerves		\$171,014*	\$195,018*	413
		Other		\$11,918	\$91,678	3,272
	Torso	Fracture		\$20,187	\$60,844	8,422
		Dislocation		\$23,579*	\$47,881*	1,082
		Sprains/Strains		\$11,781*	\$36,839*	668
		Internal		\$19,987	\$18,742	9,266
		Open Wound		\$9,455	\$41,951	4,804
		Blood Vessel		\$38,056*	\$37,250*	230
		Contusion/Superficial		\$12,408	\$19,431	4,004
		Burns		\$11,862	\$26,075	2,355
		Nerves		\$212,754*	\$296,196*	593
		Other		\$9,747	\$37,853	6,833
	Extremities	Fracture		\$14,736	\$62,029	63,215
		Dislocation		\$14,272	\$55,820	3,083
		Sprains/Strains		\$14,925	\$26,315	1,479
		Open Wound		\$6,849	\$32,171	16,293
		Amputations		\$22,783	\$198,650	1,723
		Blood Vessel		\$27,446*	\$21,128*	115
		Contusion/Superficial		\$8,234	\$26,584	4,862
		Crush		\$13,103*	\$71,930*	320
		Burns		\$10,720	\$21,295	3,730
		Nerves		\$29,500*	\$63,434*	128
	Other		\$9,223	\$34,956	5,630	
	Unclassified by Site	Fracture		\$25,422*	\$69,809*	24
		Open Wound		\$10,604*	\$30,013*	257
		Contusion/Superficial		\$9,985*	\$33,600*	515

Findings

	Central Harlem	Washington Hts
Injuries*, 1985-1988	568	818
Population	19,000	43,000
Total Medical Spending	\$13,590,514	\$21,550,401
Medical spending per 1000 children	\$698,000	\$508,000

- The cost per 1000 children in Harlem was 1.37 times that of Washington Heights
- Implemented late 1988: Harlem Hospital Injury Prevention Program (HHIPP)

Example: Benefit Cost Analysis of the Harlem Hospital Injury Prevention Program

The HHIPP: Hospital-based program targeting assault, gunshot, outdoor fall and traffic injuries among kids ages 5-16 years. Implemented late 1988

Data: Obtained from the Northern Manhattan Injury Surveillance System

Design: Case (Central Harlem) versus Control (Washington Heights),
Pre- versus Post-Intervention Design

	Central Harlem	Washington Hts
Pre-Intervention (1985-88)	\$508,000/1000	\$598,000/1000
Post-Intervention (1989-1992)	\$420,000/1000	\$425,000/1000

Source: Spicer, Miller, Durkin, Barlow (2004). A benefit-cost analysis of the Harlem hospital injury prevention program. Injury Control and Safety Promotion, 11(1):55-57.

The Data

Body Part	Nature of Injury	Pre-Intervention		Post-Intervention	
		Central Harlem	Washington Heights	Central Harlem	Washington Heights
Head and Neck	Fracture	***	***	***	***
Head and Neck	Dislocation	***	***	***	***
Head and Neck	Sprain/Strain	***	***	***	***
Head and Neck	Internal	***	***	***	***
Head and Neck	Open wound	***	***	***	***
Head and Neck	Amputation	***	***	***	***
Head and Neck	Blood Vessel	***	***	***	***
Head and Neck	Superficial/Contusion	***	***	***	***
Head and Neck	Crushing	***	***	***	***
Head and Neck	Burn	***	***	***	***
Head and Neck	Nerve Damage	***	***	***	***
Head and Neck	Other	***	***	***	***
Torso	Fracture	***	***	***	***
Torso	Dislocation	***	***	***	***
Torso	Sprain/Strain	***	***	***	***
Torso	Internal	***	***	***	***
Torso	Open wound	***	***	***	***
Torso	Amputation	***	***	***	***
Torso	Blood Vessel	***	***	***	***
Torso	Superficial/Contusion	***	***	***	***
Torso	Crushing	***	***	***	***
Torso	Burn	***	***	***	***
Torso	Nerve Damage	***	***	***	***
Torso	Other	***	***	***	***
Extremities	Fracture	***	***	***	***
Extremities	Dislocation	***	***	***	***
Extremities	Sprain/Strain	***	***	***	***
Extremities	Internal	***	***	***	***
Extremities	Open wound	***	***	***	***
Extremities	Amputation	***	***	***	***
Extremities	Blood Vessel	***	***	***	***
Extremities	Superficial/Contusion	***	***	***	***
Extremities	Crushing	***	***	***	***
Extremities	Burn	***	***	***	***

Results

Central Harlem Washington Heights

Medical spending per 1000 children 5-16 years

Pre-intervention			
	1985	\$140,000	\$91,000
	1986	\$108,000	\$83,000
	1987	\$343,000	\$149,000
	1988	\$107,000	\$185,000
	Total Pre-Intervention	\$698,000	\$508,000
Post-intervention			
	1989	\$99,000	\$174,000
	1990	\$138,000	\$91,000
	1991	\$107,000	\$100,000
	1992	\$81,000	\$55,000
	Total Post-Intervention	\$425,000	\$420,000

Savings from injuries prevented

Step 1: % Change pre- versus post-intervention

39.1%

17.3%

Step 2: % Change attributed to HHIPP^b

21.8%

Step 3: Savings/1000 children attributed to HHIPP^c

\$152,000

Step 4: Total savings^d

\$2,922,000

Cost of Program

Four years of the HHIPP cost \$1.2 million



Benefit-Cost Ratio

\$2.922 million in medical spending averted

\$1.2 million spent on the program

$$\text{BCR} = 2.44$$



Children's Safety Network

National Injury and Violence Prevention Resource Center

Contact Information

Rebecca Spicer, PhD, MPH spicer@pire.org

Dexter Taylor, PhD dtaylor@pire.org



Questions



Please enter your questions in the Q & A box

Thank you!

Please fill out our short evaluation:

<https://www.surveymonkey.com/r/WLQNMYP>