



Traffic Accidents—A Growing Contributor to Workers Compensation Losses

Introduction—The Significance of Traffic Accidents in Workers Compensation Claims Costs

In this time of declining frequency and surging severity, the workers compensation industry needs to focus on reducing high-cost injuries. A key step is developing a sound understanding of the characteristics of high-cost claims. As indicated below, work-related injuries due to traffic accidents are high-cost and are a growing share of workers compensation loss costs.

NCCI's claims data include three leading types of workers compensation-related highway accidents: collisions with other vehicles, vehicle collisions with stationary objects, and vehicle "upsets" (overturned or jackknifed). Each has its own mix of injuries and costs with differing consequences for the occupants, for their employers, and for compensation carriers. For example, workers compensation claims involving collisions with another vehicle often result in subrogation, while claims involving "upsets" generate a relatively high number of debilitating and expensive head and neck injuries.

The high cost of traffic accident-related injuries and deaths is not limited to workers compensation claims. Traffic accidents are by far the leading cause of accidental deaths in the United States. Moreover, the total costs of traffic accidents borne by employers are many times greater than the workers compensation claims costs due to traffic accidents. Efforts to reduce the frequency and severity of workers compensation claims due to highway traffic accidents should generate much more extensive benefits than just lower claims costs.

Key Findings

Key findings of this study include the following:

- Traffic accidents are material for, but much bigger than, workers compensation.
- Motor vehicle accidents are more severe than the average workers compensation claim.

- Risk varies by type of vehicle. Frequency of fatalities is higher for trucks, while frequency of nonfatal injuries is higher for passenger vehicles.
- Motor vehicle accidents comprise a growing share of workers compensation injuries. Frequency is declining but at a slower pace than for workers compensation claims overall.
- In terms of claims characteristics, motor vehicle claims impact a diverse range of occupations other than just truckers, top diagnoses include neck injuries, duration is more than 70% longer, subrogation is significant, and attorney involvement is greater.
- Employers can play a big part in encouraging safe practices and procedures.

Traffic Accidents Are Material for, but Much Bigger Than, Workers Compensation

Traffic accidents are a much bigger issue for employers than just workers compensation claims costs. However, they are material for workers compensation, too. According to the Network of Employers for Traffic Safety, motor vehicle injuries are very costly for employers.¹ The study estimates that both on- and off-the-job motor vehicle crashes cost employers \$60 billion per year from 1998 through 2000.² Workers compensation costs are a more modest \$2 billion annually. This suggests that workers compensation loss control efforts can have a dramatic impact on an employer's financial performance.

¹ "The Economic Burden of Traffic Accidents on Employers: Costs by State and Industry and by Alcohol and Restraint Use," Network of Employers for Traffic Safety, December 2003, Table 2, Page 5.

² The total considers a variety of factors, ranging from liability incurred because of injury to others, lost productivity, medical costs to family members in nonwork-related accidents, and a variety of less tangible factors, such as an allocation of taxes for emergency response providers.

Motor Vehicle Accidents Are More Severe

NCCI workers compensation data indicates that motor vehicle claims make up almost 2% of claims but represent more than 5.5% of total losses because they comprise a disproportionate share of the more severe workers compensation claim types. This is illustrated in Exhibit 1, which shows that while motor vehicle claims

make up just under 2% of claims overall, they account for more than a fifth of fatalities, nearly 7% of permanent total injuries, and 3% and 3.5% of temporary total and permanent partial injuries, respectively. In terms of losses, motor vehicle claims make up more than 5.5% of all losses but more than 15% of permanent total injuries and more than 20% of fatal injuries.

Motor Vehicle Accidents Produce More Severe Injuries

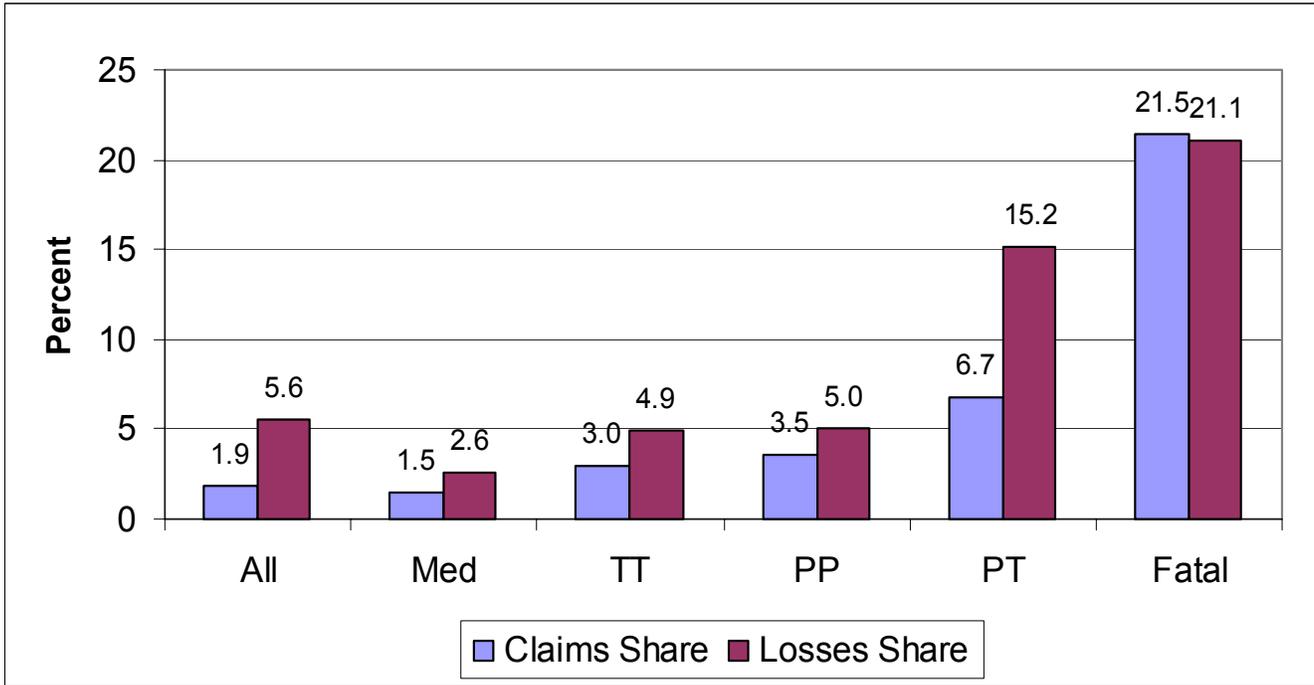


Exhibit 1. Motor Vehicle Claims and Incurred Losses Shares of Each Injury Type at 2nd Report, Accident Years 1997–2003, NCCI’s Integrated Database.

Where’s the Risk?—Frequency of Fatalities Is Higher for Trucks; Frequency of Nonfatal Injuries Is Higher for Passenger Vehicles

Not only are motor vehicle accidents more serious, but the exposure for traffic accidents, i.e., the number of miles driven, has increased dramatically from 1990 through 2002, up 47% for large trucks and 32% for

passenger vehicles.³ Fortunately, the frequency of both fatalities and nonfatal injuries has been declining. From 1990 through 2002, fatalities per 100 million vehicle miles traveled were always higher for large trucks than for passenger cars.⁴ Both declined over the period, with large trucks declining 37% and passenger vehicles declining 28% (see Exhibit 2).

³ “Large Truck Crash Facts 2002,” Federal Motor Carrier Safety Administration, April 2004. Includes both on- and off-the-job accidents.

⁴ A large truck is defined as a truck with a gross vehicle weight rating greater than 10,000 pounds. A passenger vehicle is defined as a car or light truck (including pickups, vans, and sports utility vehicles).

Frequency of Fatalities Is Higher for Large Trucks



Exhibit 2. Fatalities in Crashes Involving Large Trucks and Passenger Vehicles per 100 Million Vehicle Miles Traveled, Calendar Years 1990–2002, Federal Motor Carrier Safety Administration.

Frequency of Nonfatal Injuries Is Higher for Passenger Vehicles

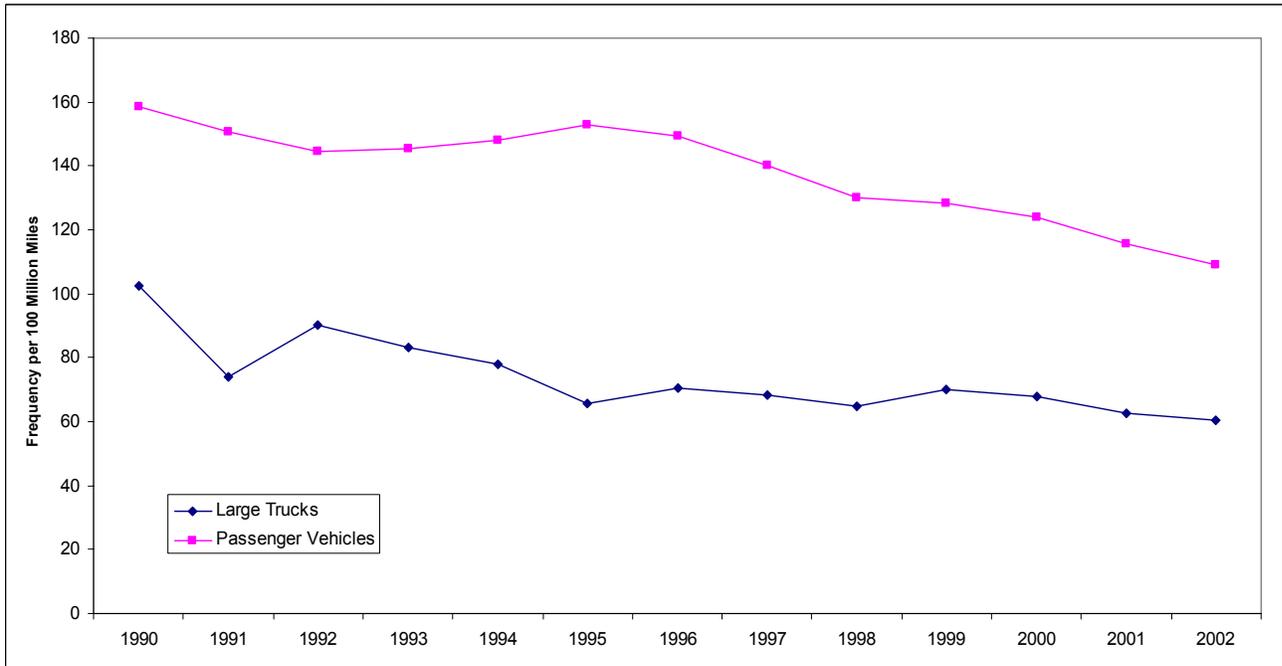


Exhibit 3. Persons Injured in Large Truck and Passenger Vehicle Crashes per 100 Million Vehicle Miles Traveled, Calendar Years 1990–2002, Federal Motor Carrier Safety Administration.

In contrast, the rate of nonfatal injuries is higher for passenger vehicles than large trucks every year from 1990 through 2002 (see Exhibit 3). Again, the frequency for large trucks declined more than for passenger vehicles (down 41% and 31%, respectively) from 1990 through 2002.

NCCI workers compensation data allows examination of characteristics of motor vehicle accidents in trucking occupations (that most likely involve large trucks) vs. other occupations. The analysis is based on a limited number of observations; therefore, the results are suggestive, not definitive, but there are some interesting differences to point out. For example:

- Accidents in trucking occupations tend to be more severe with longer durations:
 - Total severity for motor vehicle accidents in trucking over the 1997–2003 period averaged close to \$29,000
 - For other occupations it was just over \$16,000
- Fatalities make up a higher share of motor vehicle injuries for trucking (1.6% vs. 0.8%), likely a result of a higher share of the more severe vehicle upsets (20.2% for trucking vs. 9.4% overall).

According to a September 2003 National Institute for Occupational Safety and Health study, the types of vehicles involved in highway fatalities varied by industry:

- Within the transportation, communications, and public utilities industry, 74.3% of worker fatalities were in semitrucks
- In the mining industry, 37.5% of fatalities were in pickup trucks
- For agriculture, forestry, and fishing, 30.2% were due to off-road and industrial vehicles, including farm tractors

- Automobiles accounted for high shares of fatalities in:
 - Finance, insurance, and real estate (65.0%)
 - Public administration (58.2%)
 - Services (47.5%)⁵

Not surprisingly, the implication for workers compensation is that passenger car accidents are more likely to be in the clerical class code, while truck accidents are more likely to be in trucking.

Traffic Accidents Are a Growing Share of Workers Compensation Injuries—Frequency Is Declining but at a Slower Rate Than Overall

Multiple NCCI data sources are used in this study including integrated and claims databases.⁶ Appendix A defines motor vehicle injuries as used in this study based on cause of injury codes.⁷ The focus of this analysis is on highway traffic accidents, but NCCI's data does not clearly differentiate between highway and nonhighway motor vehicle accidents. Data from the Bureau of Labor Statistics (BLS) does allow this distinction.⁸ As shown in Appendix B, the trends observed in the overall motor vehicle category can be attributed to highway accidents.

Exhibit 4 shows that motor vehicle shares of both total claims and total incurred dollars increased over the period from 1997 through 2003. On average over this period, motor vehicle incidents made up just under 2% of total claims but 5.6% of total losses.

⁵ "Work-Related Roadway Crashes—Challenges and Opportunities for Prevention," National Institute for Occupational Safety and Health, September 2003.

⁶ From the integrated database, Accident Years 1997–2003 are included, covering close to 22 million claims. The accident year data was obtained from data for Policy Years 1997–2003 evaluated at a second report. The claims database contains data licensed to NCCI by insurers for purposes of this study, covering losses reported from more than 9 million claims over the seven accident years from 1997 through 2003.

⁷ Appendix A also contains detailed claims characteristics for some of the individual motor vehicle cause of injury codes.

⁸ According to the BLS, nonhighway accidents are those that occur entirely off the road, on industrial or commercial premises, on farms, or in parking lots. See Appendix B for more information.

The Motor Vehicle Share of Total Claims and Dollars Has Been Increasing

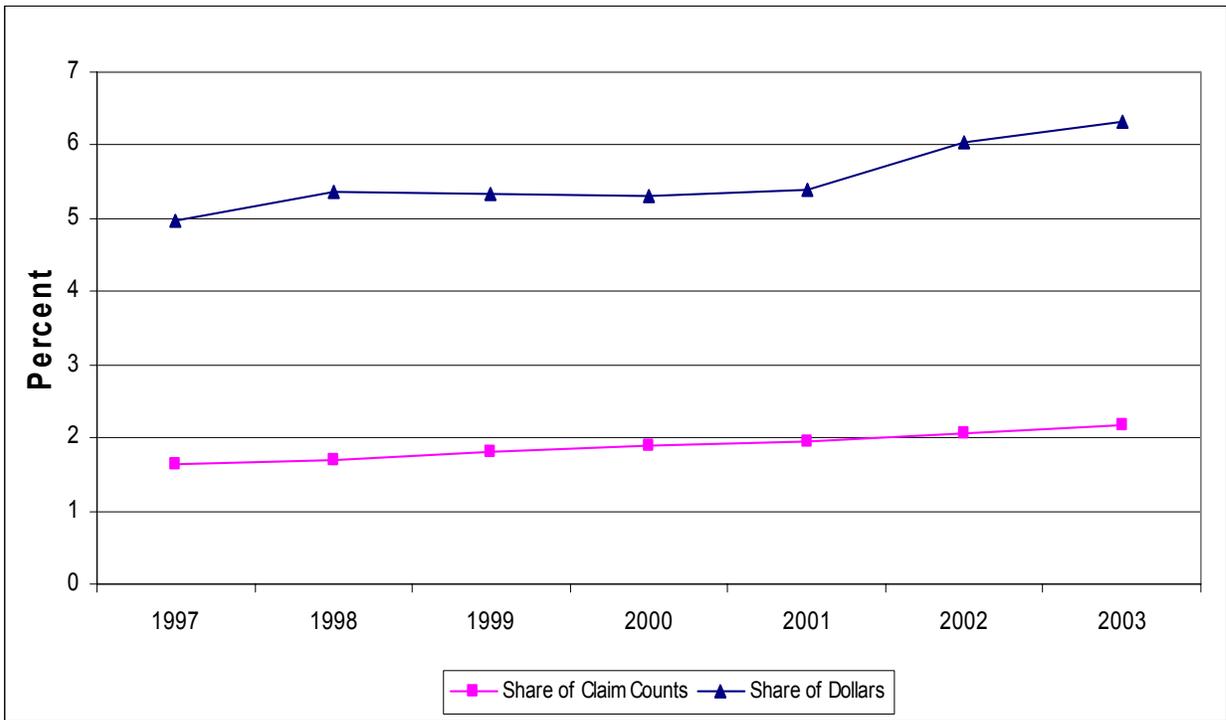


Exhibit 4. Motor Vehicle Shares of Total Claims and Incurred Dollars at 2nd Report, Accident Years 1997–2003, NCCI’s Integrated Database.

Motor Vehicle Injury Rates Are Falling at a Slower Pace

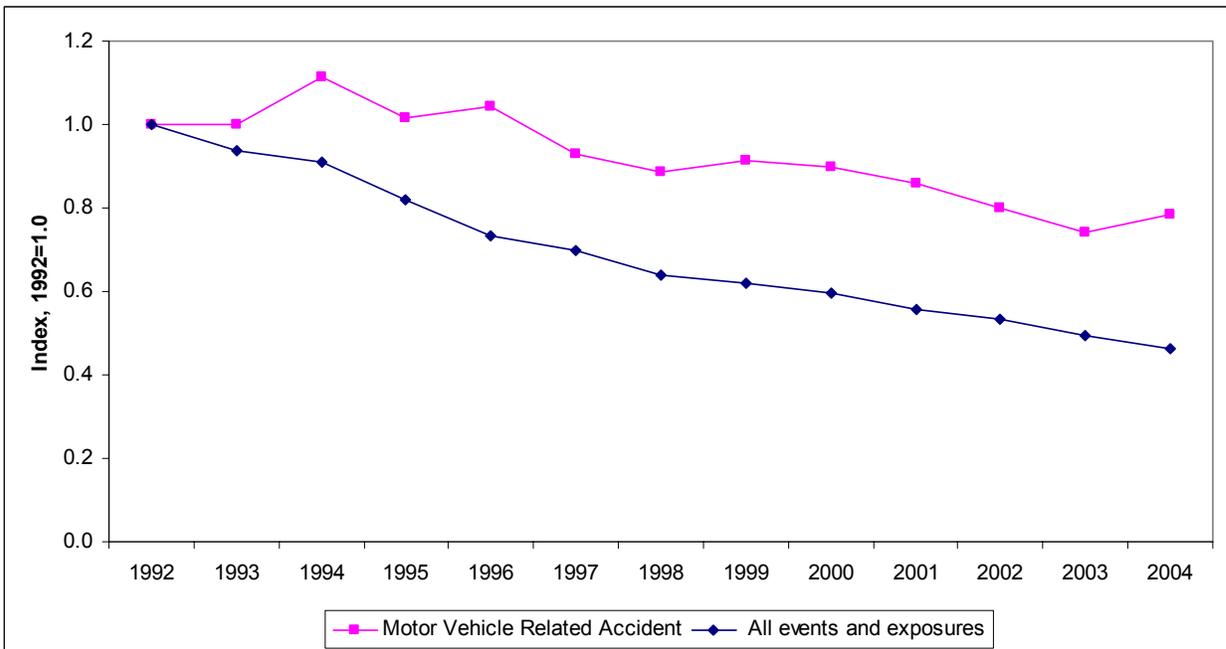


Exhibit 5. Index of Incidence Rates per 10,000 Full-Time Workers of Nonfatal Cases Involving Days Away From Work Where 1992=1.0, Calendar Years 1992–2004, Bureau of Labor Statistics.

The frequency of motor vehicle-related workplace injuries has been falling, but at a slower pace than overall. Over the 1992–2004 period, motor vehicle-related frequency fell by 21%, while overall frequency fell by 54% (see

Exhibit 5). As a consequence, the share of nonfatal motor vehicle-related lost-time injuries has increased from 2.3% in 1992 to 3.9% in 2004, an increase of 69% (see Exhibit 6).

The Share of Nonfatal Motor Vehicle-Related Accidents Has Increased

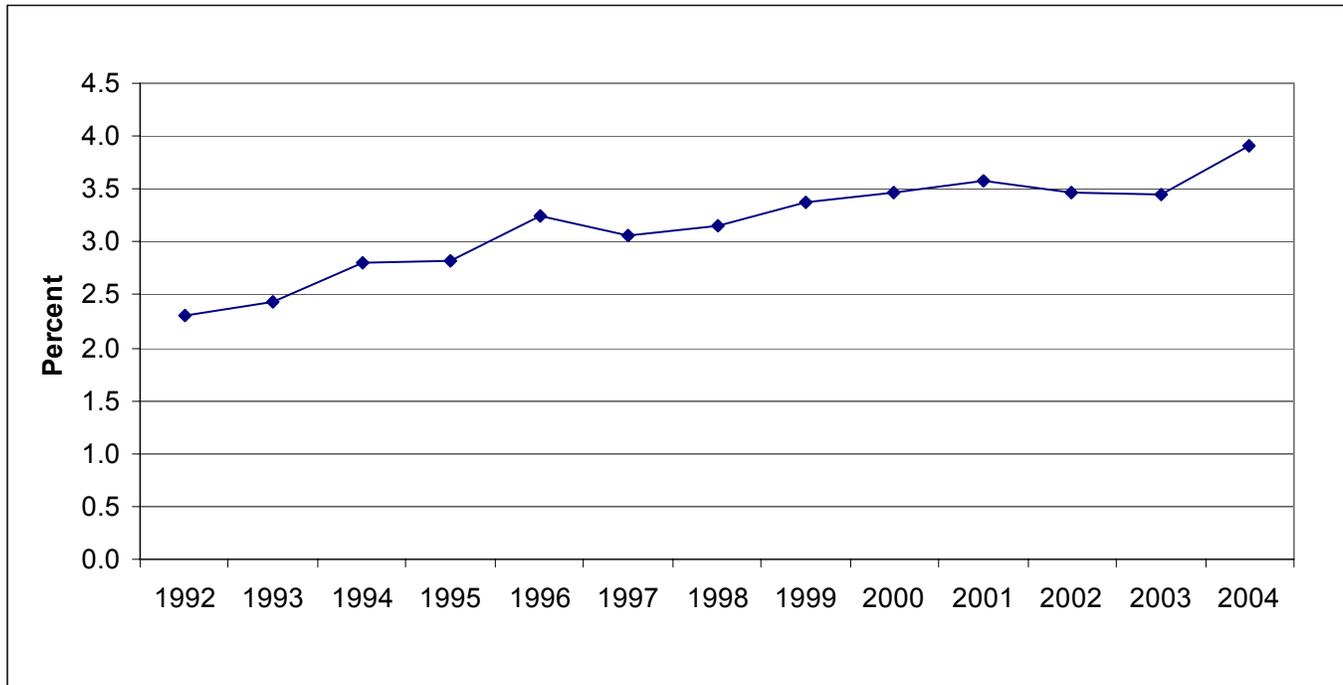


Exhibit 6. Nonfatal Motor Vehicle (Nonhighway and Highway) Accidents as a Share of Total Nonfatal Cases Involving Days Away From Work, Calendar Years 1992–2004, Bureau of Labor Statistics.

What Do We Know About These Claims?

The following sections examine characteristics of motor vehicle claims using NCCI data by injury type, class code, diagnosis, duration, subrogation, and attorney involvement.⁹ Some observations include:

- Motor vehicle claims are more likely to be lost-time and, as mentioned previously, make up a disproportionate share of the most severe claim types.
- Occupations in addition to trucking have significant exposure to motor vehicle claims.
- Neck injuries are among the top diagnoses for motor vehicle claims in terms of both number of claims and total incurred dollars.
- Average duration is more than 70% longer for motor vehicle claims 60 months after injury date.
- Subrogation is a significant consideration in claims regarding motor vehicle accidents with more than 20% of motor vehicle claims involving subrogation compared with less than 1% for workers compensation overall. In fact, motor vehicle claims make up more than half of all workers compensation claims with subrogation.
- Motor vehicle claims are three times as likely to involve a claimant attorney compared with all claims.

⁹ For a more extensive discussion of subrogation, see Appendix C. Appendix D addresses age distributions and Appendix E discusses gender differences for motor vehicle claims. Appendix A contains claims characteristics for the individual motor vehicle cause of injury codes.

Claims Characteristics—More Lost-Time, More Severe, More Expensive

Exhibit 7 shows that motor vehicle claims are more likely to involve lost-time than total claims. Nearly 40% of motor vehicle claims are lost-time as opposed to just under 23% for all claims.

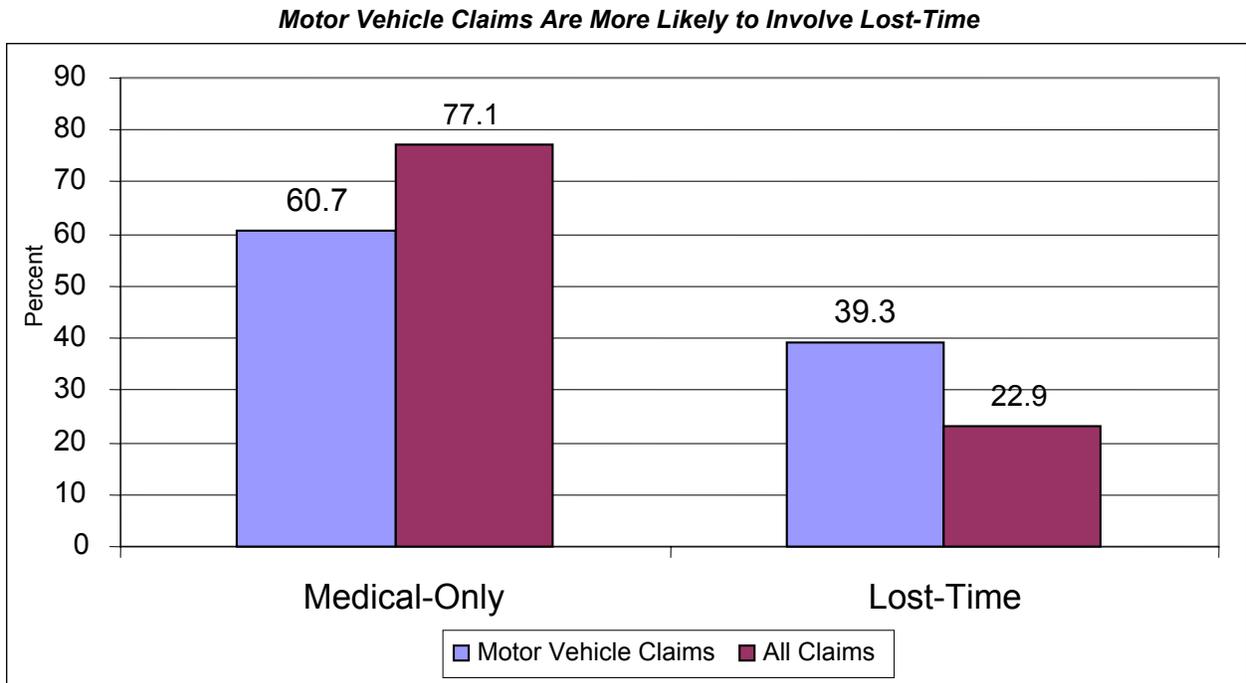


Exhibit 7. Medical-Only vs. Lost-Time Split at 2nd Report, Accident Years 1997–2003, NCCI’s Integrated Database.

And for those that are lost-time, Exhibit 8 shows that motor vehicle claims are more likely to be permanent partial, permanent total, and fatal than all claims combined.

Motor Vehicle Lost-Time Claims Are More Likely to Be PP, PT, and Fatal

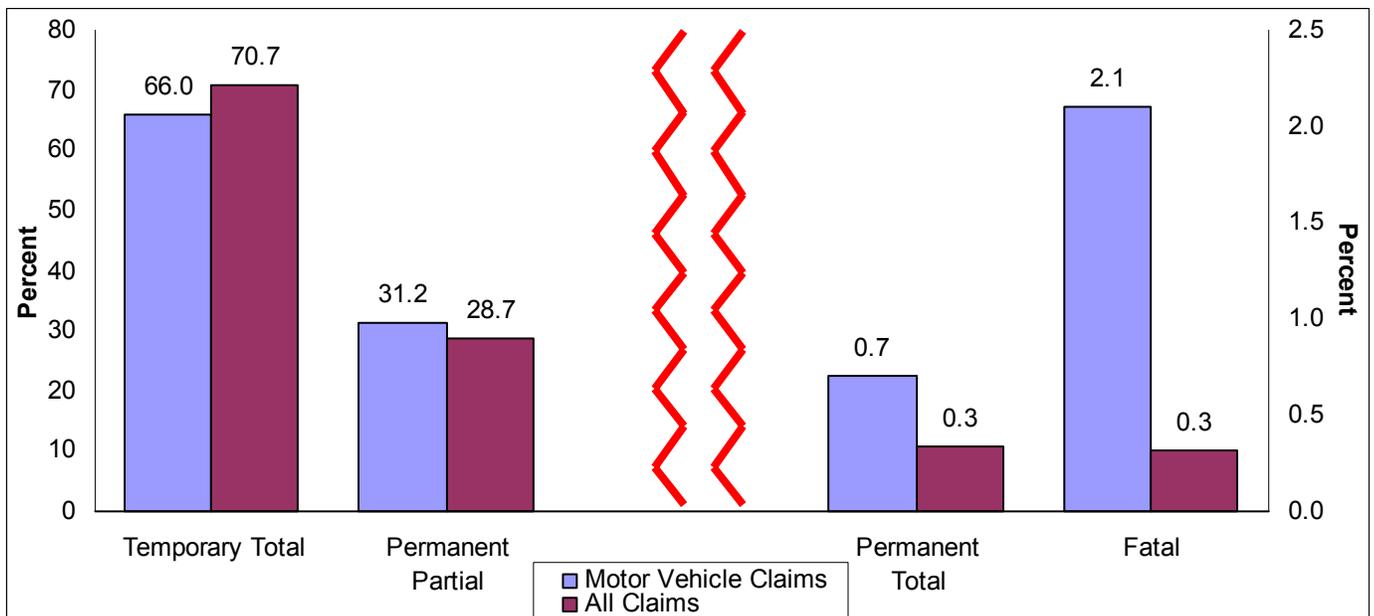


Exhibit 8. Lost-Time Claims Injury Type Distribution at 2nd Report, Accident Years 1997–2003, NCCI’s Integrated Database.

In addition, Exhibit 9 shows that while motor vehicle claims make up less than 2% of claims and just over 5.5% of losses overall, they comprise a disproportionate share of the most severe claim types.

Motor Vehicle Accidents Produce More Severe Injuries

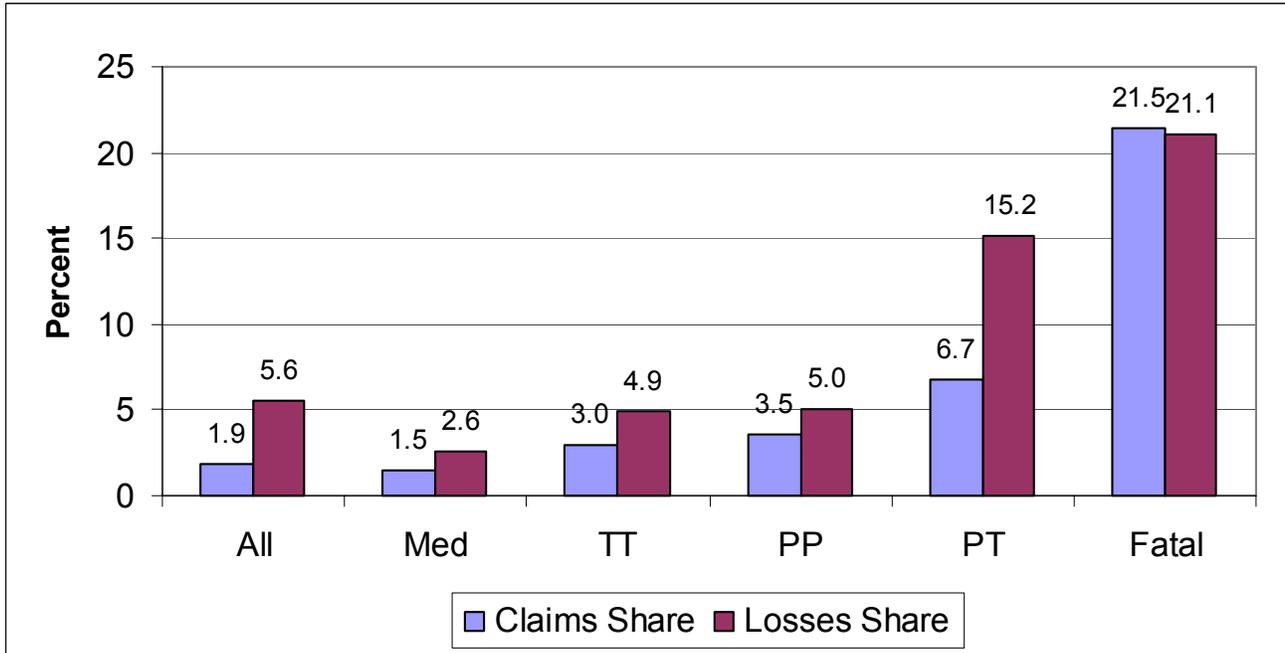


Exhibit 9. Motor Vehicle Claims Share and Incurred Losses Share of Each Injury Type at 2nd Report, Accident Years 1997–2003, NCCI’s Integrated Database.

Furthermore, for each injury type but fatal, severities due to motor vehicle accidents are higher than for all claims (see Exhibit 10).

For Each Injury Type but Fatal, Severities Due to Motor Vehicle Causes Are Higher Than for All Causes

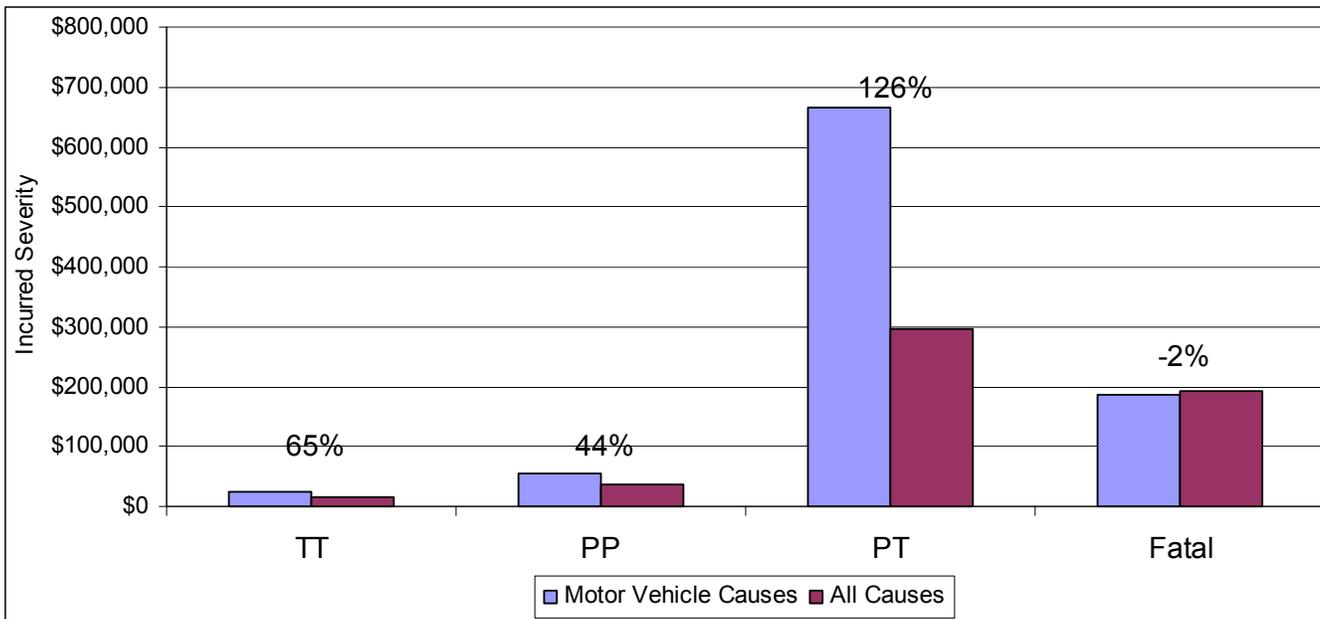


Exhibit 10. Average Incurred Dollars at 2nd Report by Injury Type, Accident Years 1997–2003, NCCI’s Integrated Database.

Salespersons and Clerical Have Above-Average Shares of Motor Vehicle Accidents

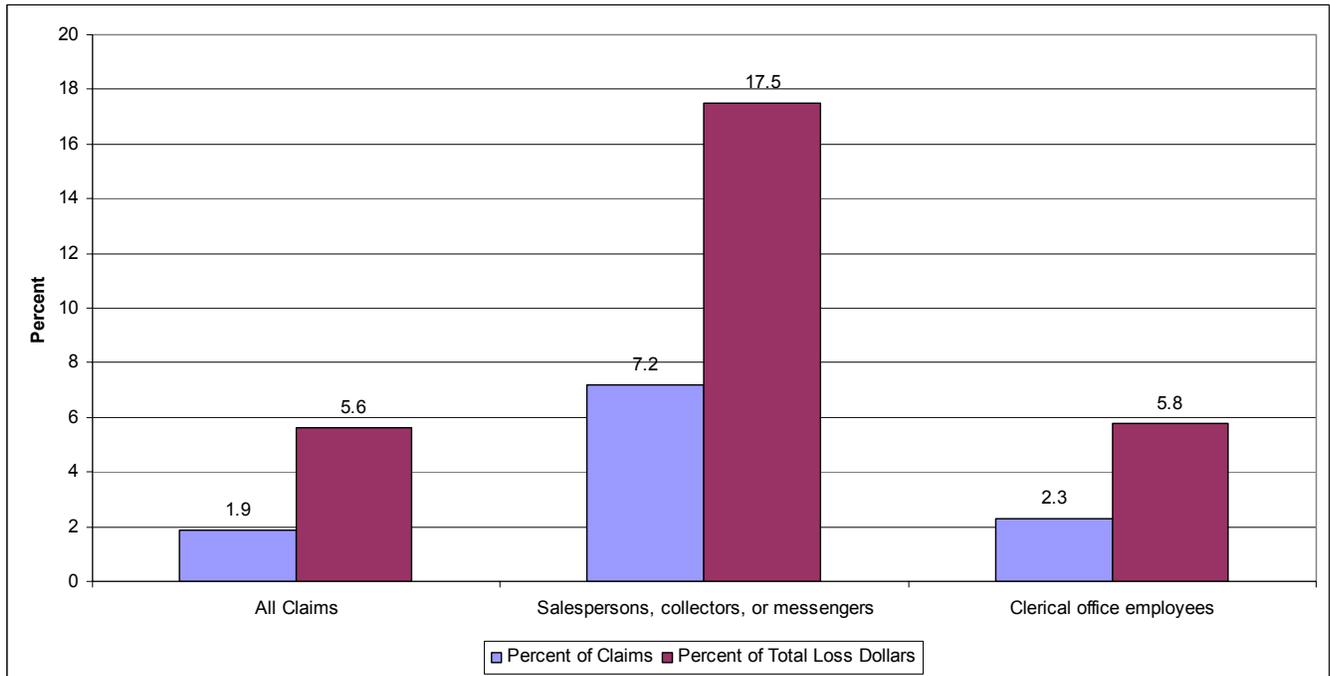


Exhibit 11. Motor Vehicle Accident Percent of Claims and Total Incurred Loss Dollars at 2nd Report Overall and for Two Class Codes, Accident Years 1997–2003, NCCI’s Integrated Database

Claims Characteristics—Not Just Truckers

A 1996 BLS press release noted that in spite of the large share of highway fatalities that involved trucks, only approximately 40% of the victims were truck drivers by occupation. Other top occupations involved workers driving or riding to various locations to perform their work. These include home health nurses, sales representatives, farm workers, police officers and other emergency service personnel, and managers and executives¹⁰

Exhibit 11 shows that motor vehicle accidents make up an above-average share of both claims and losses in the large office and clerical class code, in addition to a high share of the salespersons, collectors, or messengers class code.

Exhibit 12 contains a table ranking the top class codes for all motor vehicle accidents. In addition to the expected codes such as salespersons, drivers, trucking¹¹, police officers, and home health nurses, clerical office employees are at the top of the list. There is very little difference among the top class codes by injury type. The few exceptions include fatal injuries, where gasoline drivers and street pavers show up in the top 10 class codes, and permanent total injuries, where garbage collection is in the top 10.

¹⁰ “Deadly Highway Accidents Outnumber Other Fatal Work Incidents,” *Issues in Labor Statistics*, US Department of Labor, Bureau of Labor Statistics, Summary 96–13, December 1996.

¹¹ In 1996, the class code Trucking: NOC—All Employees and Drivers was discontinued in most states and replaced with Trucking—Local Hauling Only—& Drivers and Trucking—Long Distance Hauling—& Drivers. The original class code Trucking: NOC—All Employees and Drivers was retained in AK, CA, FL, LA, MA, MI, MT, NY, OR, TN, and TX. If the three trucking class codes were still combined, they would rank first with about 8.5% for claims and more than 14% for loss dollars.

Top Class Codes With Motor Vehicle Accidents Include Clerical, Sales, Drivers, and Truckers

Rank	Class Code	Claim Counts Due to Motor Vehicle Causes	Share of Claims Due to Motor Vehicle Causes (%)	Cumulative Share of Claims Due to Motor Vehicle Causes (%)
1	CLERICAL OFFICE EMPLOYEES NOC	25,540	6.2	6.2
2	SALESPERSONS, COLLECTORS OR MESSENGERS-OUTSIDE	25,263	6.1	12.3
3	DRIVERS, CHAUFFEURS & THEIR HELPERS NOC-COMMERCIAL	22,959	5.5	17.8
4	TRUCKING-LONG DISTANCE HAULING-& DRIVERS	14,520	3.5	21.3
5	AUTOMOBILE SERVICE OR REPAIR CENTER & DRIVERS	11,988	2.9	24.2
6	TRUCKING: NOC-ALL EMPLOYEES & DRIVERS	11,347	2.7	27.0
7	POLICE OFFICERS & DRIVERS	10,752	2.6	29.5
8	TRUCKING-LOCAL HAULING ONLY-& DRIVERS	9,543	2.3	31.9
9	BUS CO.: ALL OTHER EMPLOYEES & DRIVERS	8,906	2.2	34.0
10	NURSING-HOME HEALTH, PUBLIC AND TRAVELING-ALL EMPLOYEES	6,615	1.6	35.6

Exhibit 12. Top 10 Class Codes at 2nd Report for All Claims Due to Motor Vehicles, Accident Years 1997–2003, NCCI's Integrated Database.

In terms of dollars, the top 10 class codes are similar to those in terms of claims (see Exhibit 13).

The Top Class Codes in Dollars Are Similar to Those in Terms of Number of Claims

Rank	Class Code	Total Incurred Dollars Due to Motor Vehicle Causes	Share of Total Incurred Dollars Due to Motor Vehicle Causes (%)	Cumulative Share of Total Incurred Dollars Due to Motor Vehicle Causes (%)
1	SALESPERSONS, COLLECTORS OR MESSENGERS-OUTSIDE	443,006,442	6.5%	6.5%
2	TRUCKING-LONG DISTANCE HAULING-& DRIVERS	406,861,444	6.0%	12.5%
3	CLERICAL OFFICE EMPLOYEES NOC	380,614,000	5.6%	18.1%
4	TRUCKING: NOC-ALL EMPLOYEES & DRIVERS	331,780,265	4.9%	23.0%
5	DRIVERS, CHAUFFEURS & THEIR HELPERS NOC-COMMERCIAL	318,711,793	4.7%	27.7%
6	TRUCKING-LOCAL HAULING ONLY-& DRIVERS	239,075,026	3.5%	31.2%
7	AUTOMOBILE SERVICE OR REPAIR CENTER & DRIVERS	150,763,647	2.2%	33.4%
8	POLICE OFFICERS & DRIVERS	133,632,057	2.0%	35.4%
9	STREET OR ROAD CONSTRUCTION: PAVING OR REPAVING & DRIVERS	107,398,816	1.6%	37.0%
10	EXCAVATION & DRIVERS	107,001,555	1.6%	38.6%

Exhibit 13. Top 10 Class Codes at 2nd Report for Total Incurred Losses Due to Motor Vehicles, Accident Years 1997–2003, NCCI's Integrated Database.

Claims Characteristics—Neck Injuries Are a Leading Diagnosis

Exhibit 14 shows the top 10 diagnoses for all motor vehicle accidents in terms of number of claims. Neck injuries occupy the top two spots. Sprain of neck and cervicalgia (pain in neck) make up 15% of all motor vehicle claims but less than 2% of all claims. Exhibit 15 is similar but ranks the top diagnoses in terms of total incurred dollars. While sprain of neck, cervicalgia, and

cervical disc displacement are among the top diagnoses in terms of both claims and total incurred dollars 24 months after injury date, many of the diagnoses appearing in the top 10 in terms of incurred dollars are not in the top 10 in terms of claims. The second ranked diagnosis in terms of total incurred dollars at 24 months is other brain injury, which ranks 13th in terms of claims, while the fifth in terms of total incurred dollars is lumbar disc displacement, which ranks 11th in terms of claims.

Neck Injuries Are the Top Motor Vehicle-Related Diagnoses in Terms of Claims

Rank	Primary Medical Diagnosis	Motor Vehicle Claim Counts	Share of All Motor Vehicle Claim Counts (%)	Cumulative Share of Motor Vehicle Claim Counts (%)	Rank by Total Incurred	Total Incurred Dollars 24 Months After Date of Injury
1	SPRAIN OF NECK	17,875	9.3	9.3	4	85,465,106
2	CERVICALGIA	11,165	5.8	15.1	1	190,038,944
3	SPRAIN LUMBAR REGION	3,674	1.9	17.0	20	19,347,308
4	FACE & NECK INJURY	2,657	1.4	18.4	13	30,601,060
5	SPRAIN SHOULDER/ARM NOS	2,518	1.3	19.7	29	15,917,409
6	CONTUSION FACE/SCALP/NCK	2,140	1.1	20.8	78	5,001,463
7	CERV DISC DISPLACMENT	2,014	1.0	21.9	3	86,466,726
8	LUMBAGO	2,008	1.0	22.9	18	24,085,457
9	TRUNK INJURY NOS	1,812	0.9	23.8	24	17,570,677
10	HEAD INJURY NOS	1,746	0.9	24.8	11	31,825,628

Exhibit 14. Top 10 Primary Diagnoses for All Motor Vehicle Injuries by Claim Counts 24 Months After Date of Injury, Accident Years 1997–2003, NCCI.

Neck Injuries Also Rank High in Terms of Total Incurred Dollars

Rank	Primary Medical Diagnosis	Motor Vehicle Total Incurred Dollars 24 Months After Date of Injury	Share of All Motor Vehicle Total Incurred Dollars (%)	Cumulative Share of Motor Vehicle Total Incurred Dollars (%)	Rank by Claim Counts	Claim Counts
1	CERVICALGIA	190,038,944	5.78%	5.78%	2	11,165
2	OTH BRAIN INJ-LOC NOS	113,578,426	3.45%	9.23%	13	1,689
3	CERV DISC DISPLACMENT	86,466,726	2.63%	11.86%	7	2,014
4	SPRAIN OF NECK	85,465,106	2.60%	14.45%	1	17,875
5	LUMBAR DISC DISPLACEMENT	74,963,470	2.28%	16.73%	11	1,723
6	LUMBOSACRAL NEURITIS NOS	62,527,190	1.90%	18.63%	12	1,708
7	CERV DISC DIS W MYELOPAT	39,834,309	1.21%	19.84%	37	618
8	QUADRIPLEGIA UNSPECIFIED	34,235,925	1.04%	20.88%	568	12
9	SPRAIN ROTATOR CUFF	33,546,234	1.02%	21.90%	30	877
10	LUMB/LUMBOSAC DISC DEGEN	33,268,129	1.01%	22.91%	34	771

Exhibit 15. Top 10 Primary Medical Diagnoses for All Motor Vehicle Injuries by Total Incurred Dollars 24 Months After Date of Injury, Accident Years 1997–2003, NCCI.

Claims Characteristics—Longer Duration

Motor vehicle claims, on average, have longer duration than all claims. Exhibits 16 and 17 illustrate the point. Exhibit 16 shows that motor vehicle-related claims have fewer claims closed than average both 24 and 60 months after date of injury. For example, 24 months after date of

injury, 77% of motor vehicle claims are closed compared with 91% for all claims. At 60 months, the difference is smaller (about 95% vs. about 98%), but still fewer motor vehicle claims are closed. Exhibit 17 compares the average duration in terms of days. Sixty months after date of injury, motor vehicle claims lasted 72% longer (426 days on average compared with 247 days for all claims).

Motor Vehicle-Related Claims Have Fewer Claims Closed Than Average Both 24 and 60 Months After Date of Injury

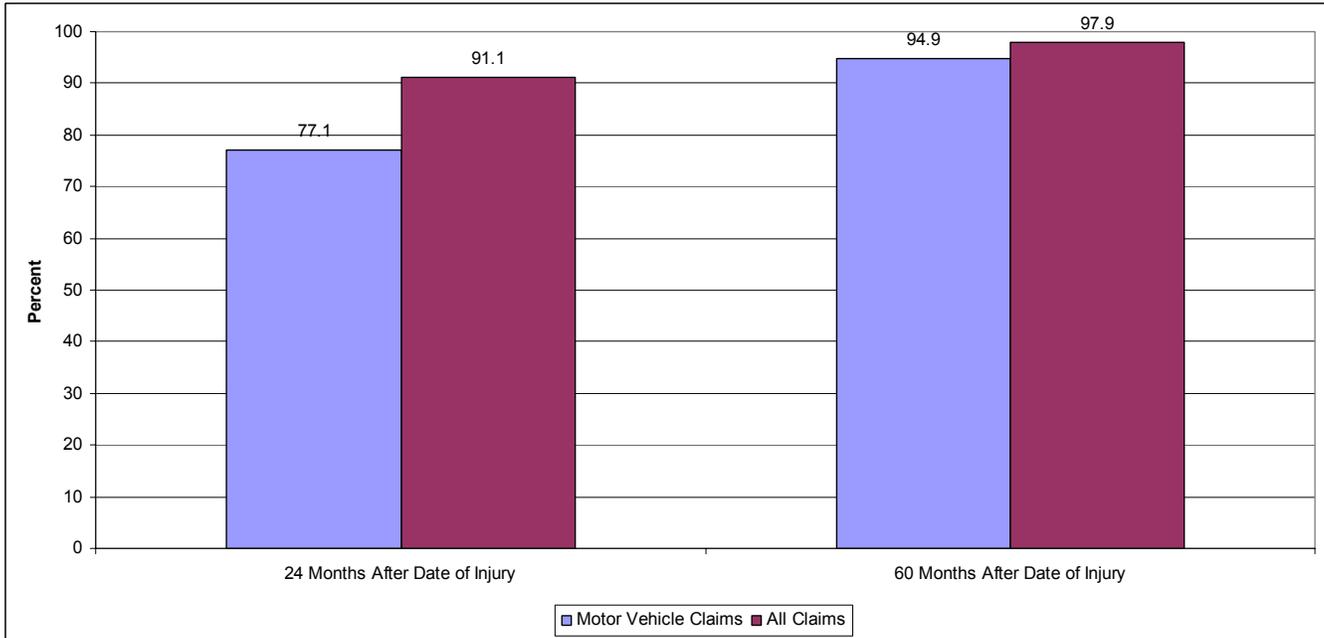


Exhibit 16. Percent of Claims That Are Closed, Accident Years 1997–2003, NCCI.

Average Duration Is Longer for Motor Vehicle Claims

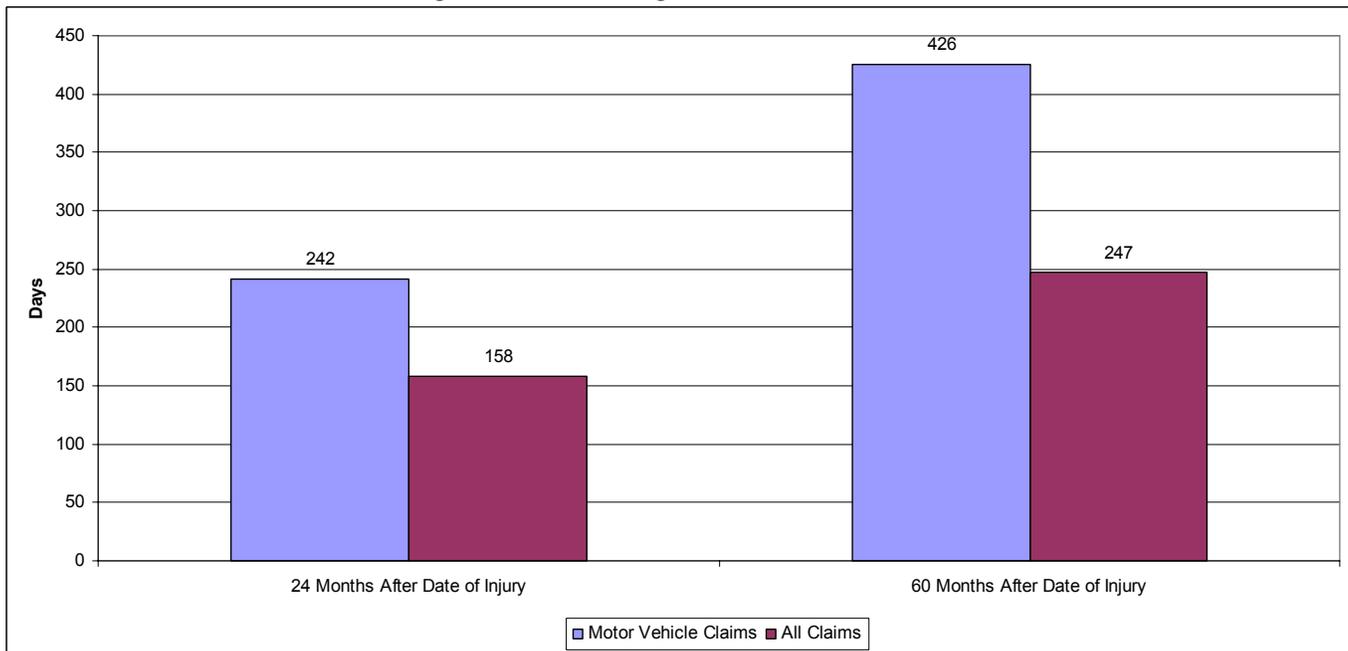


Exhibit 17. Average Number of Days From Date of Injury to Closure, Closed Claims, Accident Years 1997–2003, NCCI.

Claims Characteristics—Significant Subrogation

Exhibit 18 shows that for each maturity period, motor vehicle claims are much more likely to involve subrogation than the average claim. At 60 months after date of injury, about 1% of all claims involve subrogation, but for motor vehicle claims, the percentage involving subrogation is more than 20%. The average subrogation amount for motor vehicle claims is not as consistent and changed from above average at earlier maturity periods to below average in later periods. The average amount of

subrogation is 25% lower for motor vehicle claims than for all claims at 60 months (\$6,165 for motor vehicle claims vs. \$8,259 for all claims). Exhibit 18 illustrates that both the percentage of claims with subrogation and the average amount increase over time. When considering future development using claims incurred from 1997 through 2002, we anticipate that more than 1% of all claims and 23% of motor vehicle claims are likely to be subrogated. Similarly, the ultimate average amount of subrogation is likely to be close to 40% less for motor vehicle claims than for all claims.

At 60 Months After Date of Injury, About 1% of All Claims Are Subrogated vs. More Than 20% for Motor Vehicle Claims

	12 Months After Date of Injury	24 Months After Date of Injury	36 Months After Date of Injury	48 Months After Date of Injury	60 Months After Date of Injury
Percentage of Claims with Subrogation					
All Claims	0.3	0.6	0.7	0.8	0.8
Motor Vehicle Claims	8.1	15.4	19.2	20.9	21.5
Other Than Motor Vehicle Claims	0.1	0.2	0.3	0.4	0.4
Average Subrogation Amount (\$)					
All Claims	(1,477)	(3,478)	(5,511)	(7,062)	(8,259)
Motor Vehicle Claims	(1,675)	(3,543)	(5,022)	(5,737)	(6,165)
Other Than Motor Vehicle Claims	(1,208)	(3,393)	(6,088)	(8,512)	(10,525)

Exhibit 18. Subrogation Claims and Amount by Cause of Injury, Accident Years 1997–2003, NCCI.

The next two subrogation exhibits focus on claims valued at 60 months after date of injury. Future development will likely have some impact on the numbers, but probably would not change the overall situation. Exhibit 19 ranks subrogation claims by cause of injury and shows that the most common reasons for claims to have subrogation are

motor vehicle-related. The top three codes likely to involve subrogation (motor vehicle, not otherwise classified; collision or sideswipe with another vehicle; and struck or injured by a motor vehicle) make up more than half of all subrogation claims. Vehicle upset ranks ninth, and collision with a fixed object is further down the list at 26th.

The Top Three Causes With Subrogation Are Motor Vehicle-Related and Make Up More Than 50% of Subrogation Claims

Cause	Subrogation Claims	Percent	Cumulative Percent	Rank
ALL	44,548	100.0	.	.
MOTOR VEHICLE: MOTOR VEHICLE, NOC	12,909	29.0	29.0	1
MOTOR VEHICLE: COLLISION OR SIDESWIPE WITH ANOTHER VEHICLE	9,009	20.2	49.2	2
STRUCK OR INJURED BY: MOTOR VEHICLE	2,654	6.0	55.2	3
FALL OR SLIP INJURY: ON SAME LEVEL	1,941	4.4	59.5	4
STRUCK OR INJURED BY: STRUCK OR INJURED, NOC	1,704	3.8	63.3	5
FALL OR SLIP INJURY: FALL, SLIP OR TRIP, NOC	1,376	3.1	66.4	6
STRUCK OR INJURED BY: FALLING OR FLYING OBJECT	1,174	2.6	69.1	7
FALL OR SLIP INJURY: FROM DIFFERENT LEVEL (ELEVATION)	1,103	2.5	71.5	8
MOTOR VEHICLE: VEHICLE UPSET	1,057	2.4	73.9	9
STRUCK OR INJURED BY: ANIMAL OR INSECT	1,000	2.2	76.2	10

Exhibit 19. Subrogation Claims Rankings by Cause of Injury 60 Months After Date of Injury, Accident Years 1997–2000, NCCI.

Subrogation by injury type shows that motor vehicle claims follow a different pattern than all claims (see Exhibit 20). For all claims, the percentage of claims involving subrogation increases as the claim becomes more severe, but for motor vehicle claims, the percentage

of claims with subrogation peaks for permanent partial and then declines for the permanent total and fatal injury types. For each injury type, motor vehicle claims have a higher percentage of claims with subrogation than average, although the difference is small for fatalities.

For Each Injury Type, Motor Vehicle Claims Have A Higher Percentage of Claims With Subrogation Than Average

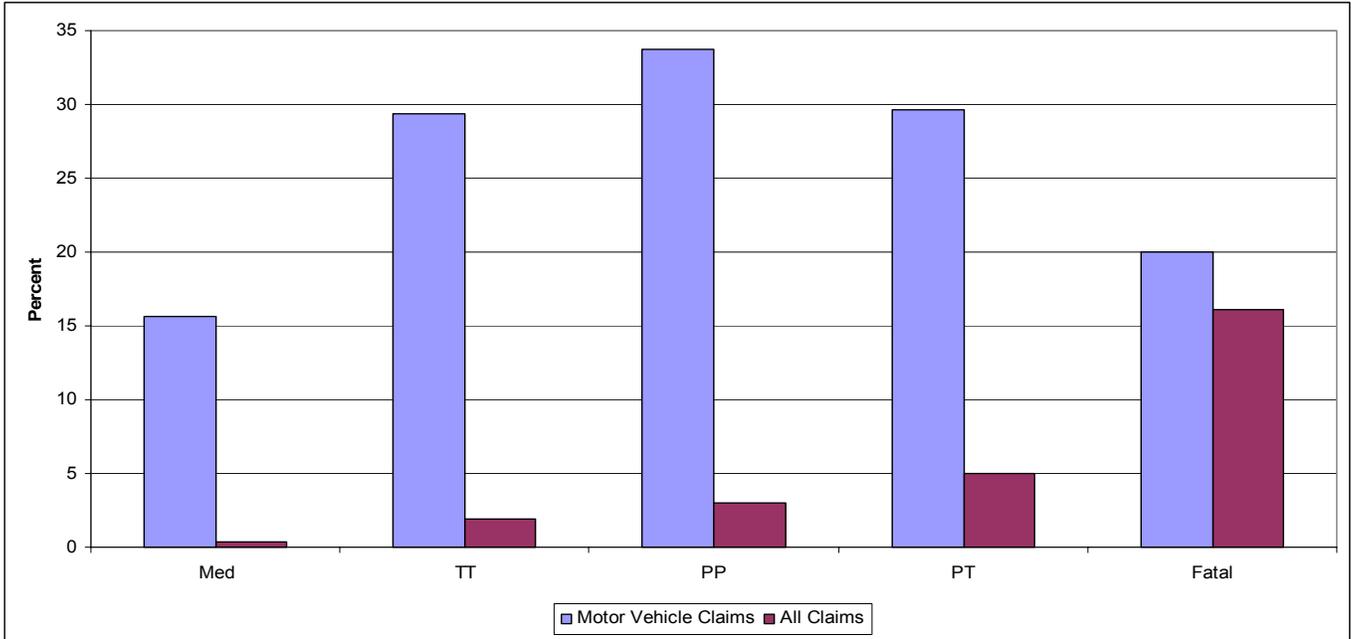


Exhibit 20. Percentage of Claims by Injury Type With Subrogation 60 Months After Date of Injury (All Claims vs. Motor Vehicle Claims), Accident Years 1997–2000, NCCI.

Overall, Three Times as Many Motor Vehicle Claims Involve an Attorney

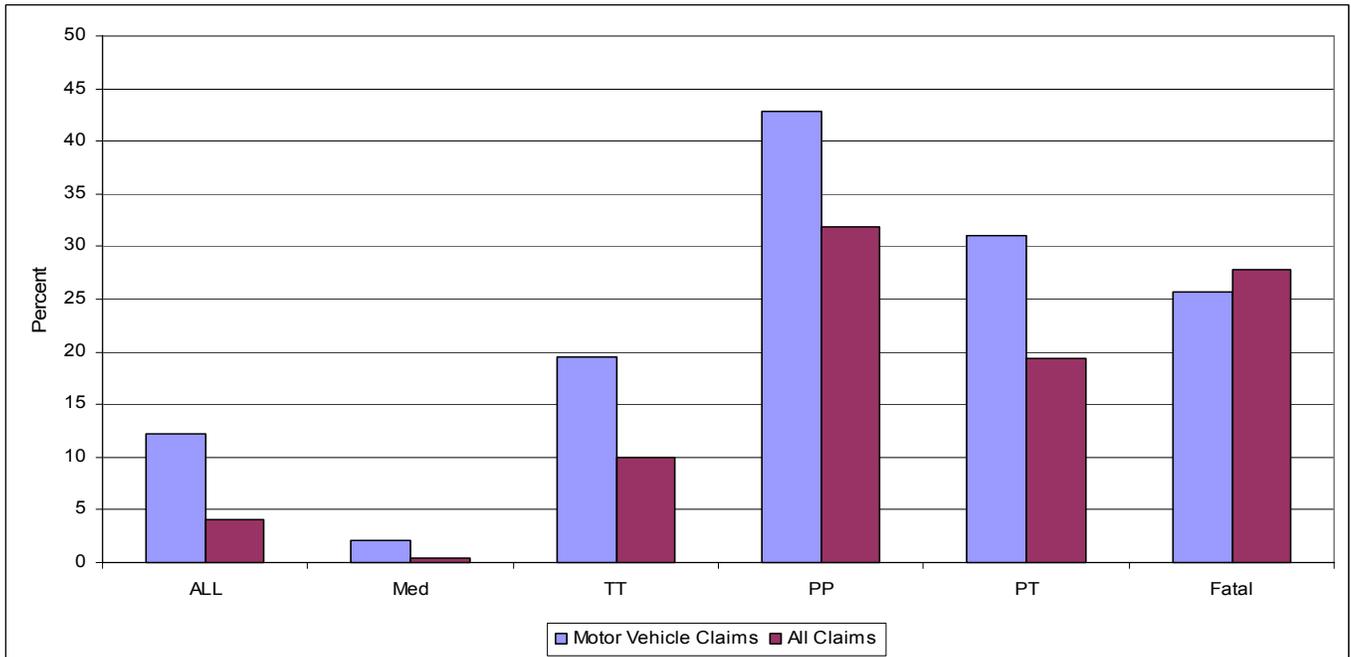


Exhibit 21. Percentage of Claims With Claimant Attorney, Accident Years 1997–2003, NCCI.

Claims Characteristics—Greater Attorney Involvement

Exhibit 21 shows the percentage of claims involving a claimant attorney for all claims and motor vehicle claims. Overall, three times as many motor vehicle claims involve an attorney compared with all claims (12% vs. 4%). More motor vehicle claims involve attorneys for every injury type but fatal.¹²

Leading Factors Causing Traffic Accidents

A study by the National Highway Traffic Safety Administration (NHTSA) and the Virginia Tech Transportation Institute (VTTI) argued that driver distraction is the leading cause of traffic accidents and near accidents.¹³ The study used video and sensor devices to track 100 vehicles for more than a year covering almost 2 million miles and more than 42,000 hours of driving. Over the course of the study, 82 crashes, 761 near crashes, and 8,295 critical incidents were recorded.¹⁴

The study concluded that “nearly 80% of crashes and 65% of near crashes involved some form of driver inattention within three seconds before the event.¹⁵ Primary causes of driver inattention are distracting activities, such as cell phone use and drowsiness.” However, it is much more than cell phones. Exhibit 22 lists driver distractions and the amount by which each was judged to increase the chances of a crash or near crash. For example, reaching for a moving object inside the vehicle increases the risk of a crash or near crash ninefold. And the study found that glances away from the road of more than two seconds for any reason increase the risk of a crash or near crash by at least two times.

Driver Distractions—The Leading Factor in Traffic Accidents

Behavior	Increased Risk Factor
Reaching for a moving object	9
Drowsiness	4
Looking at external object	4
Reading while driving	3
Applying makeup	3
Use of cell phones/handheld devices	
Dialing	3
Talking/listening	1

Exhibit 22. Driver Distractions and Increased Risk Factors, National Highway Traffic Safety Administration and The Virginia Tech Transportation Institute.

Reducing Frequency and Severity of Traffic Accidents—What the Experts Say

Clearly the high cost and increasing share of highway traffic accidents in workers compensation claims patterns indicate that investing in safety/loss control programs is likely to generate meaningful returns. A number of studies have investigated the steps employers can take to reduce the frequency and severity of traffic accidents. The following summarizes the safety and loss control recommendations of several of these studies. Most appear to be low-cost efforts that involve following a few workplace practices and behavior modification for employers and their employees who drive.

Driver Behavior

The Network of Employers for Traffic Safety study discussed earlier specifically found that increasing seat belt use and reducing alcohol-related crashes can save employers substantial sums. Failure to use safety belts cost employers an estimated \$2.1 billion annually from on-the-job highway crashes for the 1998–2000 period. In addition, alcohol-related motor vehicle highway crashes that happened on the job cost employers an estimated \$3.1 billion annually over the same period.¹⁶

¹² The percentage of subrogation claims with an attorney is about the same for motor vehicle claims and all claims at just under 22%. See Appendix C for more information.

¹³ “The Impact of Driver Inattention On Near-Crash/Crash Risk: An Analysis Using the 100-Car Naturalistic Driving Study Data,” National Highway Traffic Safety Administration and The Virginia Tech Transportation Institute, April 20, 2006.

¹⁴ An average of roughly eight crashes and near crashes per vehicle in a year suggests that this may not be a representative sample of the driving population as a whole.

¹⁵ In three seconds at only 30 miles per hour the car will travel almost 10 car lengths. For more information, see Appendix F.

¹⁶ “The Economic Burden of Traffic Accidents on Employers: Costs by State and Industry and by Alcohol and Restraint Use,” Network of Employers for Traffic Safety, December 2003.

And a recent *Wall Street Journal* article discussed new driver's education courses that aim to program employees' brains on how to react during an emergency by looking at where the vehicle needs to go instead of looking at the danger. Specific tips are related to safety features on new cars. For example, due to air bags, the safest hand positions on the wheel are located at 9:00 and 3:00, and the steering wheel should be pointed at the chest, not the face.¹⁷

Workplace Practices

A study in *Ergonomics*¹⁸ found that driver attitudes and practices appear to be paramount. Organizational support in the areas of training, employer business practices, and "planning actions" before trips can make a difference. Overall, it is an exercise in consciousness raising in these areas. Training includes trip planning, speed reduction, and obedience to traffic laws. Employer business practices include accident reviews, shift scheduling, and reasonable, realistic expectations for driving time. "Planning actions" before trips that are associated with fewer on-the-job accidents include vehicle checks, informing colleagues of travel plans, and route planning.

A study by the National Institute for Occupational Safety and Health recommends periodically performing vision and general health screenings for workers whose primary duties require driving.¹⁹

Conclusions

Motor vehicle accidents are extremely costly to employers and account for an increasing share of all workplace injuries. Injuries due to motor vehicle accidents are more severe than the average claim, comprising close to 2% of claims but more than 5.5% of losses on average over the 1997–2003 period. This is due to the fact that motor vehicle claims are more likely to be lost-time and comprise a disproportionate share of the most severe claim types. In addition to truckers and drivers, salespersons and clerical classes are also leading occupations for motor vehicle workers compensation claims. Motor vehicle claims have longer duration than average and are more likely to be subrogated and involve an attorney. Driver attitudes and driving practices are essential to safety, and employers can play a big part in encouraging safe practices and procedures.

¹⁷ "Mastering the New Rules of the Road: Driver's Ed Adapts to 21st-Century Cars," Tara Parker-Pope, *The Wall Street Journal*, July 5, 2005, p. D1.

¹⁸ "The Relationship Between Organizational and Individual Variables to On-the-job Driver Accidents and Accident-free Kilometers," by J.K. Caird and T.J. Kline, *Ergonomics*, (v.47 n.15), 1598–1613.

¹⁹ "Work-Related Roadway Crashes—Challenges and Opportunities for Prevention," NIOSH Publication Document 2003-119, September 2003.

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Appendix A—Motor Vehicle Cause Codes in NCCI Data Sources

Definition of Motor Vehicle Claims Used in This Study

Exhibit A-1 shows that the broad motor vehicle category contains several codes. This study focuses on the four shaded ones (45, 46, 48, and 50). Water vehicle, rail

vehicle, and airplane (Codes 40, 41, and 47) are excluded because they are outside the scope of this research. Struck or injured by a motor vehicle (Code 77) was excluded from the motor vehicle definition used in this report to focus on motor vehicle accidents where an occupant of the vehicle was the one injured. However, struck or injured by a motor vehicle is examined later in this appendix where cause codes are examined individually. (Water, rail, and airplane are never included.)

The Broad Motor Vehicle Category Contains Several Codes—We Are Focusing on Four

Cause of Injury Code	Cause of Injury Description	Number of Claims	Total Incurred Loss Dollars	Percent of Claims	Percent of Total Incurred Loss Dollars
ALL	ALL	21,973,022	121,552,816,059		
40	MOTOR VEHICLE: CRASH OF WATER VEHICLE	2,162	13,839,015	0.0%	0.0%
41	MOTOR VEHICLE: CRASH OF RAIL VEHICLE	973	22,410,861	0.0%	0.0%
45	MOTOR VEHICLE: COLLISION OR SIDESWIPE WITH ANOTHER VEHICLE	208,939	3,208,388,691	1.0%	2.6%
46	MOTOR VEHICLE: COLLISION WITH A FIXED OBJECT	24,506	386,311,474	0.1%	0.3%
47	MOTOR VEHICLE: CRASH OF AIRPLANE	2,103	155,577,253	0.0%	0.1%
48	MOTOR VEHICLE: VEHICLE UPSET	49,654	1,117,439,389	0.2%	0.9%
50	MOTOR VEHICLE: MOTOR VEHICLE, NOC	131,020	2,077,825,956	0.6%	1.7%
77	STRUCK OR INJURED BY: MOTOR VEHICLE	69,790	1,201,098,306	0.3%	1.0%

Exhibit A-1. Number of Claims and Total Incurred Losses at 2nd Report for Each Motor Vehicle-Related Cause of Injury Code, Accident Years 1997–2003, NCCI’s Integrated Database.

Exhibit A-2 shows that collisions with a fixed object have the lowest share of lost-time claims while vehicle upsets have the highest. Collision or sideswipe with another vehicle comprises almost half the \$7 billion of claims costs within the motor vehicle definition (see Exhibit A-3).

Collisions With a Fixed Object Have the Lowest Share of Lost-Time Claims, While Vehicle Upsets Have the Highest

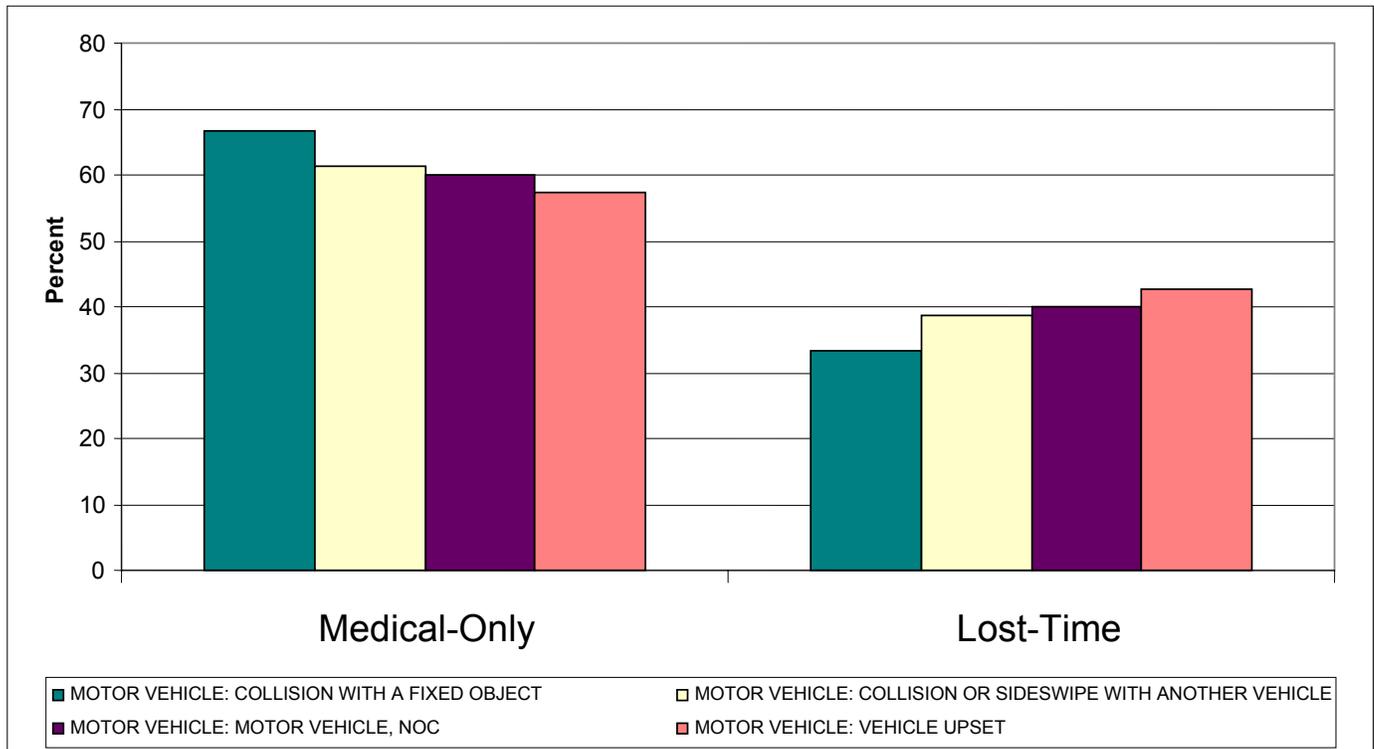


Exhibit A-2. Distribution of Medical-Only vs. Lost-Time Injuries at 2nd Report in Claims Caused by Motor Vehicles, Accident Years 1997–2003, NCCI’s Integrated Database.

Collision or Sideswipe With Another Vehicle—Almost Half the \$7 Billion of Claims Costs Within the Motor Vehicle Definition

Cause of Injury Code	Cause of Injury Description	Number of Claims	Total Incurred Loss Dollars	Percent of Claims	Percent of Total Incurred Loss Dollars
	MOTOR VEHICLES (45, 46, 48, 50)	414,119	6,789,965,510		
45	MOTOR VEHICLE: COLLISION OR SIDESWIPE WITH ANOTHER VEHICLE	208,939	3,208,388,691	50.5%	47.3%
46	MOTOR VEHICLE: COLLISION WITH A FIXED OBJECT	24,506	386,311,474	5.9%	5.7%
48	MOTOR VEHICLE: VEHICLE UPSET	49,654	1,117,439,389	12.0%	16.5%
50	MOTOR VEHICLE: MOTOR VEHICLE, NOC	131,020	2,077,825,956	31.6%	30.6%

Exhibit A-3. Distribution of Claims and Total Incurred Loss Dollars at 2nd Report for the Four Motor Vehicle Causes Within the Definition of Motor Vehicle Accidents, Accident Years 1997–2003, NCCI’s Integrated Database.

In the integrated database, motor vehicles (using the definition from this study) caused 414,119 claims and resulted in just under \$6.8 billion incurred dollars at second report over the 1997–2003 period. The claims

database contains 192,359 motor vehicle claims and just under \$3.3 billion total incurred dollars for the same period. Therefore, the claims database contains just under half the number of claims contained in the integrated database.

Claims Characteristics for Individual Motor Vehicle Cause Codes—Severity

Vehicle Upsets Are the Most Severe Motor Vehicle-Related Cause

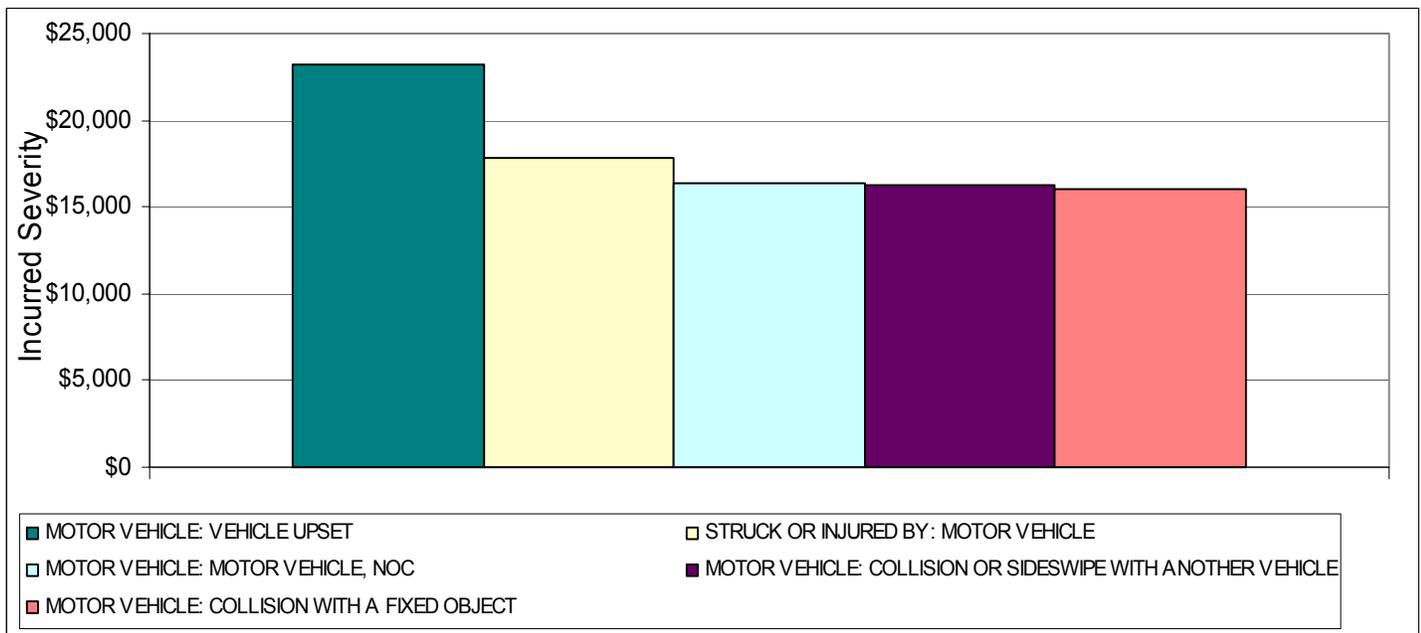


Exhibit A-4. Average Total Dollars Incurred at 2nd Report for Each Motor Vehicle Cause, Accident Years 1997–2003, NCCI’s Integrated Database.

Of the motor vehicle-related causes, vehicle upsets are the most severe (see Exhibit A-4).

Claims Characteristics for Individual Motor Vehicle Cause Codes—Class Codes

For all five motor vehicle causes, the top five class codes include clerical, salespersons, and drivers and chauffeurs (see Exhibit A-5). Some differences include the following:

- Vehicle upset is more likely to occur in trucking class codes
- Struck or injured by a motor vehicle is more likely to occur at auto service or repair centers
- Salespersons are more likely to experience a collision or sideswipe with another vehicle

Clerical, Salespersons, and Drivers and Chauffeurs Appear in the Top 5 for All 5 Motor Vehicle Causes, but There Are Some Differences

Top Ten Class Codes by All Counts Due to Motor Vehicle Collision or Sideswipe with Another Vehicle (coi=45), IDB 1997-2003				
Rank	Class Code	Claim Counts Due to 45	Share of Claims Due to 45 (%)	Cumulative Share of Claims Due to 45 (%)
1	SALESPERSONS, COLLECTORS OR MESSENGERS-OUTSIDE	15,275	7.3	7.3
2	CLERICAL OFFICE EMPLOYEES NOC	13,901	6.7	14.0
3	DRIVERS, CHAUFFEURS & THEIR HELPERS NOC-COMMERCIAL	12,266	5.9	19.8
4	TRUCKING-LONG DISTANCE HAULING-& DRIVERS	5,922	2.8	22.7
5	BUS CO.: ALL OTHER EMPLOYEES & DRIVERS	5,799	2.8	25.4

Top Ten Class Codes by All Counts Due to Motor Vehicle Collision with a Fixed Object (coi=46), IDB 1997-2003				
Rank	Class Code	Claim Counts Due to 46	Share of Claims Due to 46 (%)	Cumulative Share of Claims Due to 46 (%)
1	CLERICAL OFFICE EMPLOYEES NOC	1,372	5.6	5.6
2	SALESPERSONS, COLLECTORS OR MESSENGERS-OUTSIDE	1,114	4.5	10.1
3	DRIVERS, CHAUFFEURS & THEIR HELPERS NOC-COMMERCIAL	1,050	4.3	14.4
4	POLICE OFFICERS & DRIVERS	765	3.1	17.6
5	TRUCKING-LONG DISTANCE HAULING-& DRIVERS	733	3.0	20.5

Top Ten Class Codes by All Counts Due to Motor Vehicle Upset (coi=48), IDB 1997-2003				
Rank	Class Code	Claim Counts Due to 48	Share of Claims Due to 48 (%)	Cumulative Share of Claims Due to 48 (%)
1	TRUCKING-LONG DISTANCE HAULING-& DRIVERS	3,521	7.1	7.1
2	DRIVERS, CHAUFFEURS & THEIR HELPERS NOC-COMMERCIAL	2,707	5.5	12.5
3	TRUCKING: NOC-ALL EMPLOYEES & DRIVERS	2,297	4.6	17.2
4	SALESPERSONS, COLLECTORS OR MESSENGERS-OUTSIDE	2,256	4.5	21.7
5	CLERICAL OFFICE EMPLOYEES NOC	2,144	4.3	26.0

Top Ten Class Codes by All Counts Due to Motor Vehicle, NOC (coi=50), IDB 1997-2003				
Rank	Class Code	Claim Counts Due to 50	Share of Claims Due to 50 (%)	Cumulative Share of Claims Due to 50 (%)
1	CLERICAL OFFICE EMPLOYEES NOC	8,123	6.2	6.2
2	DRIVERS, CHAUFFEURS & THEIR HELPERS NOC-COMMERCIAL	6,936	5.3	11.5
3	SALESPERSONS, COLLECTORS OR MESSENGERS-OUTSIDE	6,618	5.1	16.5
4	AUTOMOBILE SERVICE OR REPAIR CENTER & DRIVERS	4,413	3.4	19.9
5	TRUCKING-LONG DISTANCE HAULING-& DRIVERS	4,344	3.3	23.2

Top Ten Class Codes by All Counts Due to Struck or Injured by Motor Vehicle (coi=77), IDB 1997-2003				
Rank	Class Code	Claim Counts Due to 77	Share of Claims Due to 77 (%)	Cumulative Share of Claims Due to 77 (%)
1	CLERICAL OFFICE EMPLOYEES NOC	3,645	5.2	5.2
2	AUTOMOBILE SERVICE OR REPAIR CENTER & DRIVERS	3,457	5.0	10.2
3	SALESPERSONS, COLLECTORS OR MESSENGERS-OUTSIDE	2,795	4.0	14.2
4	DRIVERS, CHAUFFEURS & THEIR HELPERS NOC-COMMERCIAL	2,657	3.8	18.0
5	STORE: RETAIL NOC	1,811	2.6	20.6

Exhibit A-5. Top 5 Class Codes at 2nd Report for Each Motor Vehicle Cause Code, Accident Years 1997–2003, NCCI’s Integrated Database.

Claims Characteristics for Individual Motor Vehicle Cause Codes—Diagnoses

The top two diagnosis codes in terms of claims are the same for all five causes (sprain of neck and cervicalgia), but the order varies. Sprain of lumbar region is also within the top five diagnosis codes for all the five motor vehicle causes. Some of the differences in diagnoses by motor vehicle cause include:

- Claims caused by being struck or injured by a motor vehicle are more likely to have leg or foot injuries
- Collisions with a fixed object and vehicle upsets are more likely to have head or brain injuries

Claims Characteristics for Individual Motor Vehicle Cause Codes—Subrogation

Looking at subrogation 60 months after date of injury for each motor vehicle-related cause code separately shows that the percentage of claims with subrogation ranges from 4% for collision with a fixed object to about 24% for collision or sideswipe with another vehicle. The following table illustrates that the motor vehicle causes that are more likely to be single-vehicle crashes (collision with a fixed object and vehicle upset) are less likely to involve subrogation, while multivehicle crashes (collision or sideswipe with another vehicle) are the most likely.

Collisions Involving Another Vehicle Result in the Highest Percentage of Subrogation Claims

Cause	Claims	Subrogation Claims	% Claims with Subrogation	Average Subrogation Amount	Total Subrogation Amount
ALL	5,349,110	44,558	0.8	(8,269)	(368,370,704)
45, 46, 48, 50--Motor Vehicle	107,674	23,170	21.5	(6,169)	(142,927,688)
45--Collision or sideswipe with another vehicle	37,620	9,009	23.9	(6,033)	(54,347,093)
46--Collision with a fixed object	4,922	195	4.0	(7,430)	(1,448,909)
48--Vehicle upset	8,739	1,057	12.1	(6,404)	(6,769,056)
50--Motor vehicle, noc	56,393	12,909	22.9	(6,225)	(80,362,630)
77--Struck or injured by motor vehicle	14,121	2,654	18.8	(7,836)	(20,797,268)

Exhibit A-6. Subrogation Claims and Amount 60 Months After Date of Injury by Cause of Injury, Accident Years 1997–2000, NCCI.

Claims Characteristics for Individual Motor Vehicle Cause Codes—Attorney Involvement

Exhibit A-7 shows the percentage of claims reported to a

claimant attorney by motor vehicle cause code. They range from a low of 7.5% for collision with a fixed object to a high of almost 16% for motor vehicle not otherwise classified.

Motor Vehicle, Not Otherwise Classified Has the Highest Rate of Attorney Involvement

Cause Description	Percentage of Claims With Claimant Attorney
ALL	4.1
45, 46, 48, 50—Motor Vehicle	12.2
45—Collision or sideswipe with another vehicle	9.9
46—Collision with a fixed object	7.5
48—Vehicle upset	9.1
50—Motor vehicle, not otherwise classified	15.8
77—Struck or injured by motor vehicle	10.1

Exhibit A-7. Percentage of Claims With Attorney Involvement by Cause, Accident Years 1997–2003, NCCI.

Motor Vehicle Shares of Lost-Time Claims Are Similar Using Both NCCI and BLS Data

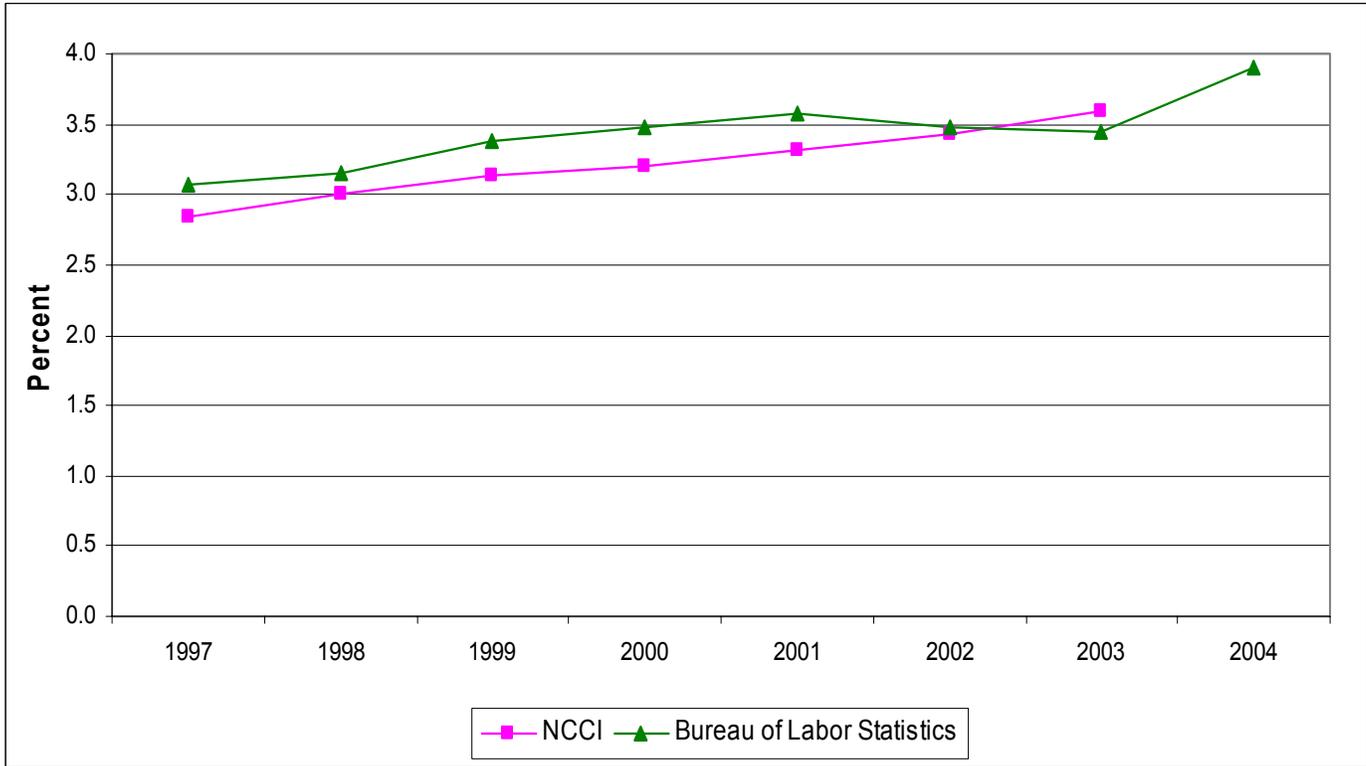


Exhibit B-1. Motor Vehicle Shares of Lost-Time Claims, NCCI's Integrated Database (2nd Report for Accident Years 1997–2003) and Bureau of Labor Statistics (Calendar Years 1997–2004).

Appendix B—Bureau of Labor Statistics Data

In this study, Bureau of Labor Statistics (BLS) data is used in addition to NCCI data to examine work-related motor vehicle accidents. The BLS conducts a survey of nonfatal occupational injuries and illnesses and a census of fatal occupational injuries. BLS data allows the investigation of trends in the larger universe of work-related traffic accidents and includes detail on the breakdown between highway and nonhighway accidents.²⁰

²⁰ According to the BLS, “highway accidents include accidents to vehicle occupants occurring on that part of the public highway, street, or road normally used for travel as well as the shoulder and surrounding areas, telephone poles, bridge abutments, trees aligning roadway, etc. Accidents occurring entirely off the highway, street, road, or on industrial, commercial, or farm premises or parking lots are considered to be nonhighway accidents. Unpaved construction roadways, roads being built, and logging roads are included as nonhighway locations. Roads under repair which are still in partial use are considered highways.”

Comparison of BLS and NCCI Data

Exhibit B-1 compares the two data sources from 1997 through 2003 (complete NCCI data for 2004 was not available at the time of this report, but the 2004 point for the BLS is included in the graph). Both show that the share of motor vehicle lost-time claims increased over that period (by 27% using NCCI data and by 12% using BLS data). The BLS data shows small declines in 2002 and 2003, but the share increased significantly in 2004.²¹

²¹ Note that to be consistent with the BLS data, this shows the share of lost-time claims, which is higher than the 2% share of all claims quoted earlier using NCCI data.

Highway vs. Nonhighway Accidents

Looking at highway and nonhighway accidents separately using BLS data shows that shares of both have increased, but highway accident-related is more significant both in terms of the percentage increase and shares (see Exhibit B-2). From 1992 through 2004, the

share of highway-related injuries increased 73%, while nonhighway-related injuries increased 54%. Highway accidents also comprise a larger share of all nonfatal injuries at 3.1% in 2004 vs. 0.8% for nonhighway accidents.

Shares of Both Highway and Nonhighway Have Increased, but Highway Accident-Related Is More Significant

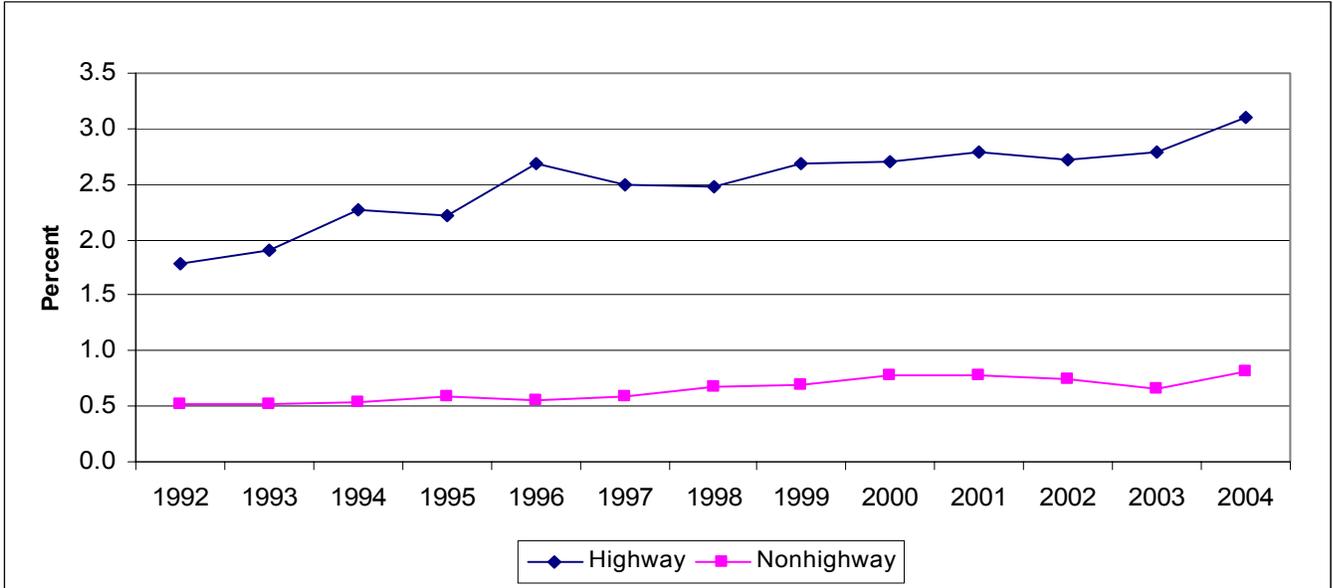


Exhibit B-2. Nonfatal Highway and Nonhighway Accidents' Share of Nonfatal Cases Involving Days Away From Work, Calendar Years 1992–2004, Bureau of Labor Statistics.

Looking at fatalities, the increase in the share of motor vehicle-related fatalities is due entirely to highway fatalities. Highway fatalities comprise the largest share of occupational fatalities, at more than 23%, and increased

27% from 1992 through 2004. Over the same period, the share of nonhighway fatalities fell 18%. Together, the share of highway and nonhighway fatalities increased over 14% from 1992 through 2004. (See Exhibit B-3.)

Highway Accidents Are Pushing Up the Share of Fatal Motor Vehicle-Related Accidents

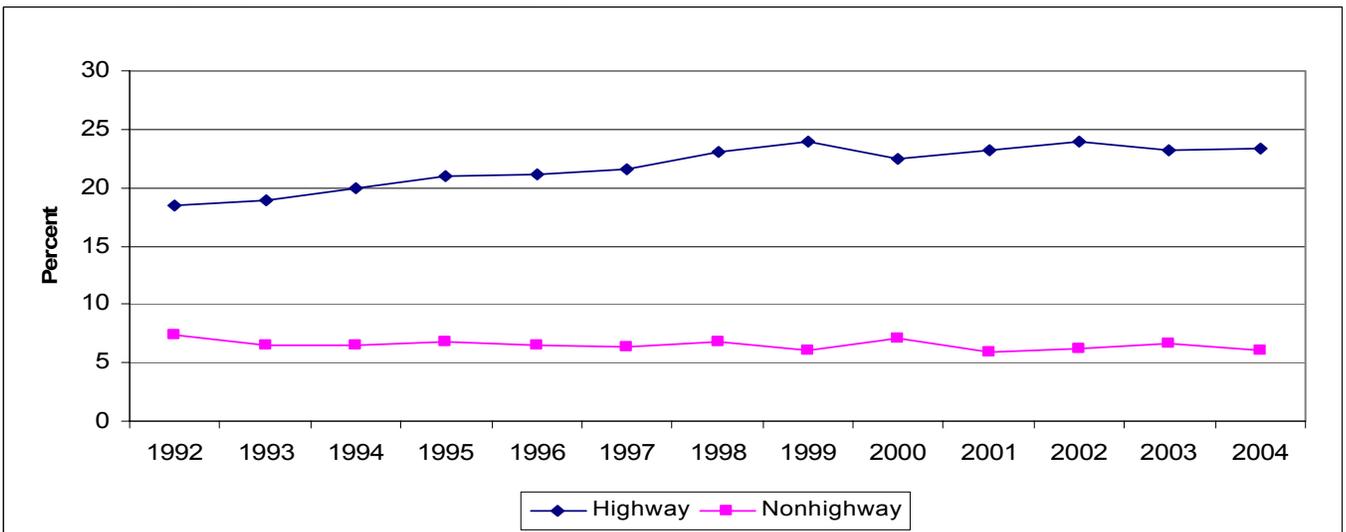


Exhibit B-3. Motor Vehicle-Related Fatalities as a Share of Total Fatalities, Calendar Years 1992–2004, Bureau of Labor Statistics.

Appendix C—Subrogation

As in the body of this paper, the following three subrogation exhibits focus on open claims valued at 60 months after date of injury plus claims closed at prior valuations. Future development will likely have some impact on the numbers. Recall that for all claims at 60 months after date of injury, about 1% involve subrogation, but for motor vehicle claims, the percentage involving subrogation is over 20%. At 60 months after date of injury, the average amount of subrogation is 25% lower for motor vehicle claims than for all claims (\$6,165 for motor vehicle claims vs. \$8,259 for all claims). When considering future development using claims incurred from 1997 through 2002, we anticipate that more than 1% of all claims and 23% of motor vehicle claims are likely to be subrogated. Similarly, the ultimate average amount of subrogation is likely to be 40% less for motor vehicle claims than for all claims.

Subrogation Interactions With Types of Auto Insurance

The next two exhibits address interactions with automobile insurance by grouping states into three categories: tort liability states, add-on states, and no-fault states. States were classified based on laws in place in 2002, according to a December 2003 study done by the Insurance Research Council.²²

Exhibit C-1 indicates that tort and add-on states have above-average motor vehicle claims with subrogation and no-fault states are below average. In terms of amounts, add-on states are the highest and tort and no-fault states are similar and below average (see Exhibit C-2).²³

²² “Auto Injury Insurance Claims: Countrywide Patterns in Treatment, Cost, and Compensation,” Insurance Research Council, December 2003, pages 16–17. “Under a traditional tort liability system, victims of auto injuries generally seek payment from the at-fault driver, if any, and must be able to prove negligence. Under a no-fault system, auto injury victims are compensated under PIP insurance, which pays benefits regardless of fault. In an add-on state, insurance laws require that auto insurers offer PIP benefits but, in contrast to no-fault laws, do not restrict the right to pursue a liability claim or lawsuit as well.” Tort states include AK, AL, AZ, CA, CT, GA, IA, ID, IL, IN, LA, ME, MO, MS, MT, NC, NE, NH, NM, NV, OH, OK, RI, TN, VT, WV, and WY. No-fault states include CO, FL, HI, KS, KY, MA, MI, MN, ND, NJ, NY, PA, and UT. Add-on states include AR, DC, DE, MD, OR, SC, SD, TX, VA, WA, WI.

²³ We have not investigated differences in development between the state groupings.

**Tort and Add-On States Have Above-Average Motor Vehicle Claims With Subrogation—
No-Fault States Are Below Average**

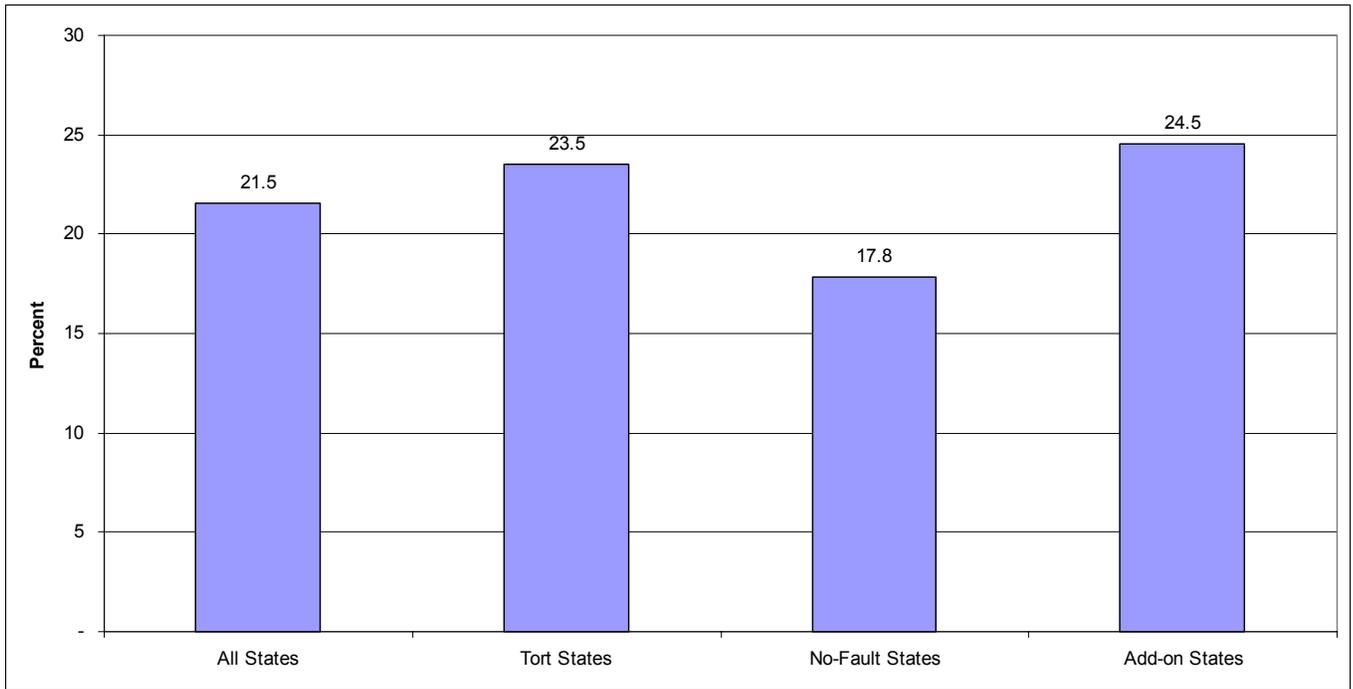


Exhibit C-1. Percentage of Motor Vehicle Claims With Subrogation for State Groups With Differences in Auto Insurance 60 Months After Date of Injury, Accident Years 1997–2000, NCCI.

Subrogation Amounts Are Similar in Tort and No-Fault States but Larger in Add-On States

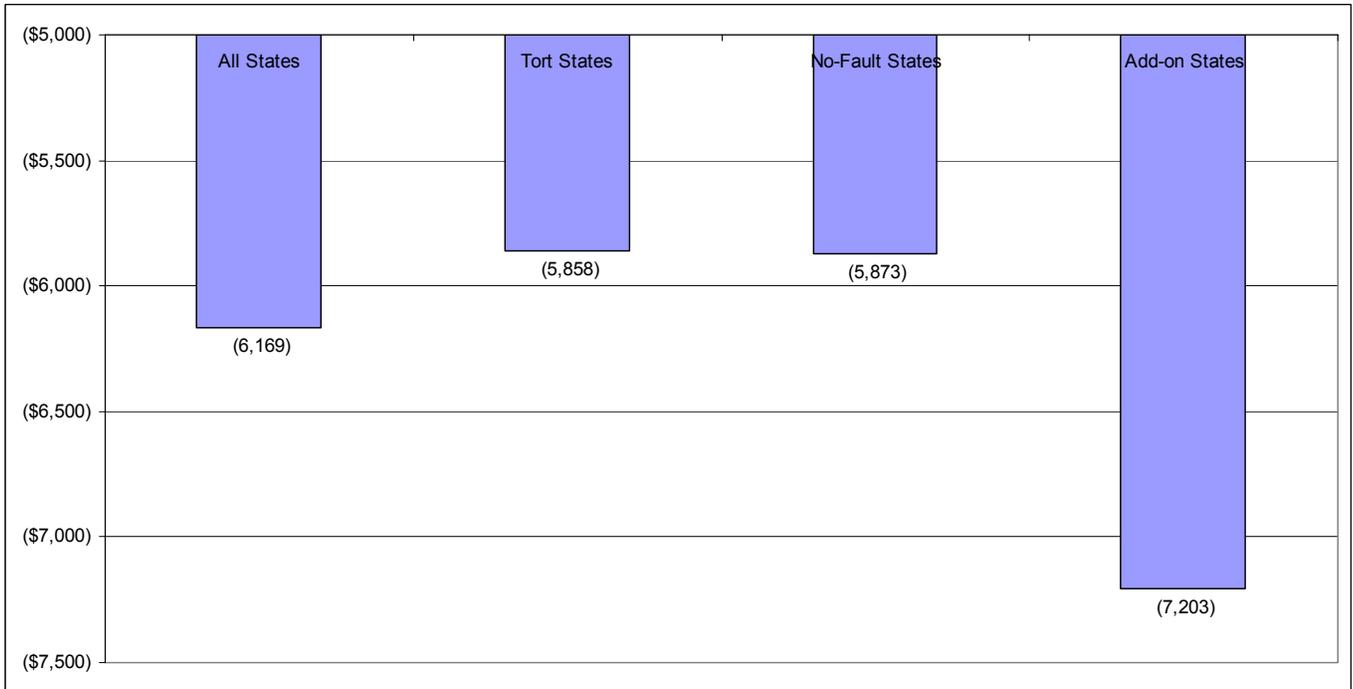


Exhibit C-2. Average Subrogation Amount of Motor Vehicle Claims With Subrogation for State Groups With Differences in Auto Insurance 60 Months After Date of Injury, Accident Years 1997–2000, NCCI.

Subrogation and Attorney Involvement

Exhibit C-3 shows that for subrogation claims the percentage of claims with an attorney is a bit lower for motor vehicle claims than for all claims, at 22% vs. almost 25%.

Shares of Motor Vehicle Claims With a Claimant Attorney Are Lower Than All Claims for Subrogation Claims

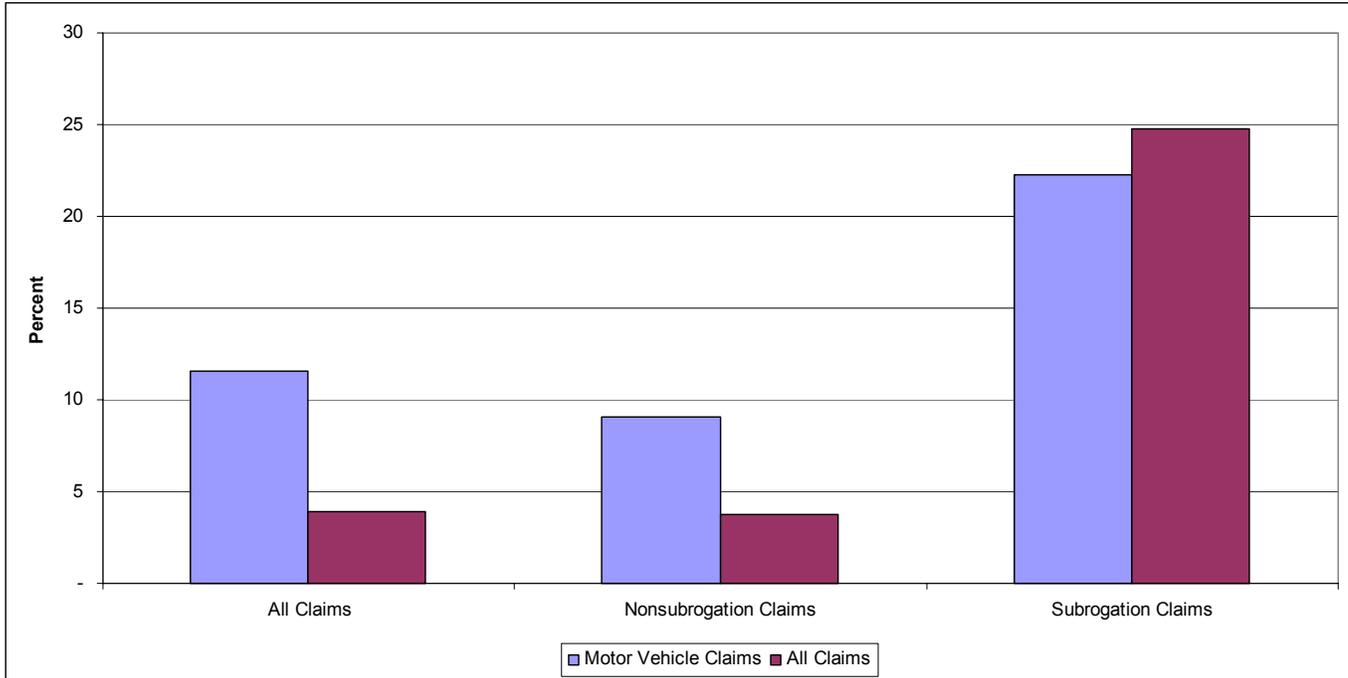


Exhibit C-3. Percentage of All Claims, Nonsubrogation Claims, and Subrogation Claims With Claimant Attorney 60 Months After Date of Injury, Accident Years 1997–2000, NCCI.

Appendix D—Age Distributions

Exhibit D-1 shows the distribution of claims by age for all claims and motor vehicle claims. Higher-than-average

percentages of motor vehicle claims occur in the 25–34 and 35–44 age cohorts, and a lower than average percentage occurs for 20–24-year olds. Motor vehicle shares are about average for older age cohorts.

Motor Vehicle Shares Are About Average for Older Age Cohorts

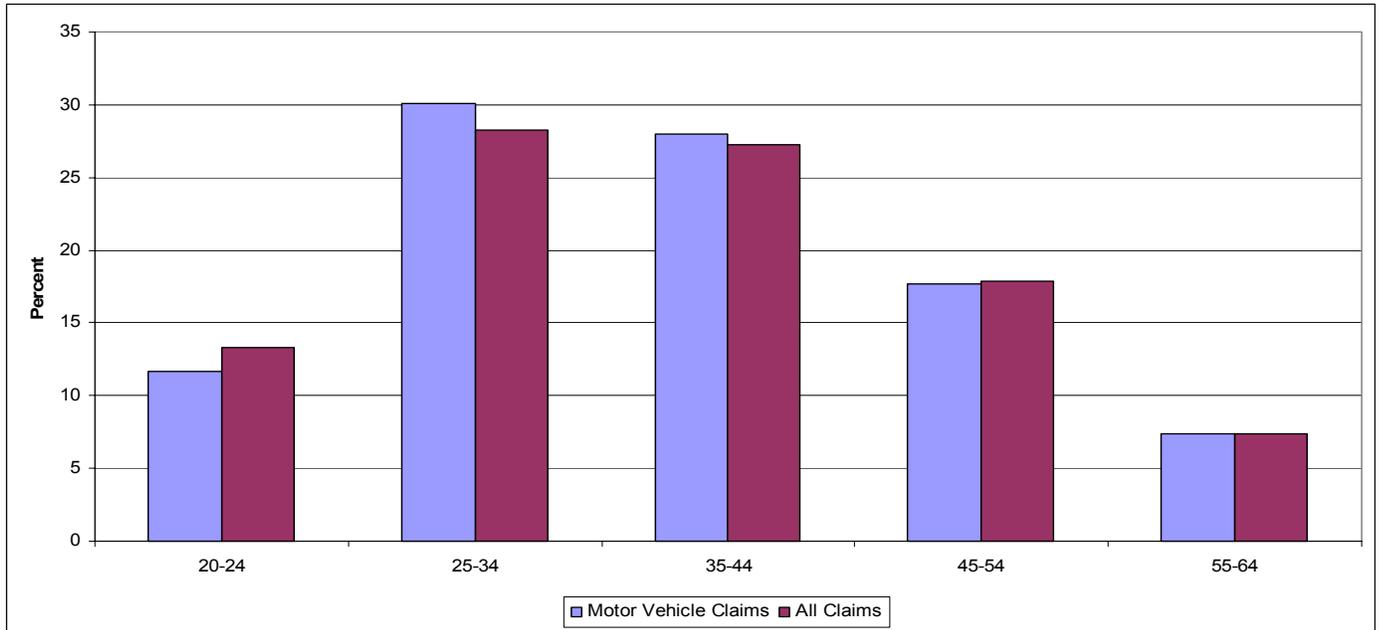


Exhibit D-1. Percent of Claims by Age Cohort (excludes claims with age missing), Accident Years 1997–2003, NCCI.

Even after adjusting for differences in wages by age, indemnity incurred severity increases with age.²⁴ For every age cohort, motor vehicle wage-adjusted indemnity incurred severity is significantly higher than severity for all

claims (see Exhibit D-2). For both all claims and motor vehicle claims, the severity for the oldest age cohort is more than 4.5 times the youngest age cohort for indemnity (wage-adjusted).

²⁴ See the NCCI study “Age as a Driver of Frequency and Severity,” which explores the extent to which differences in wages, duration, diagnosis mix, and treatment patterns explain the differences in severities between younger and older workers.

Wage-Adjusted Indemnity Incurred Severity of Motor Vehicle Claims Is Higher Than All Claims at Every Age Cohort

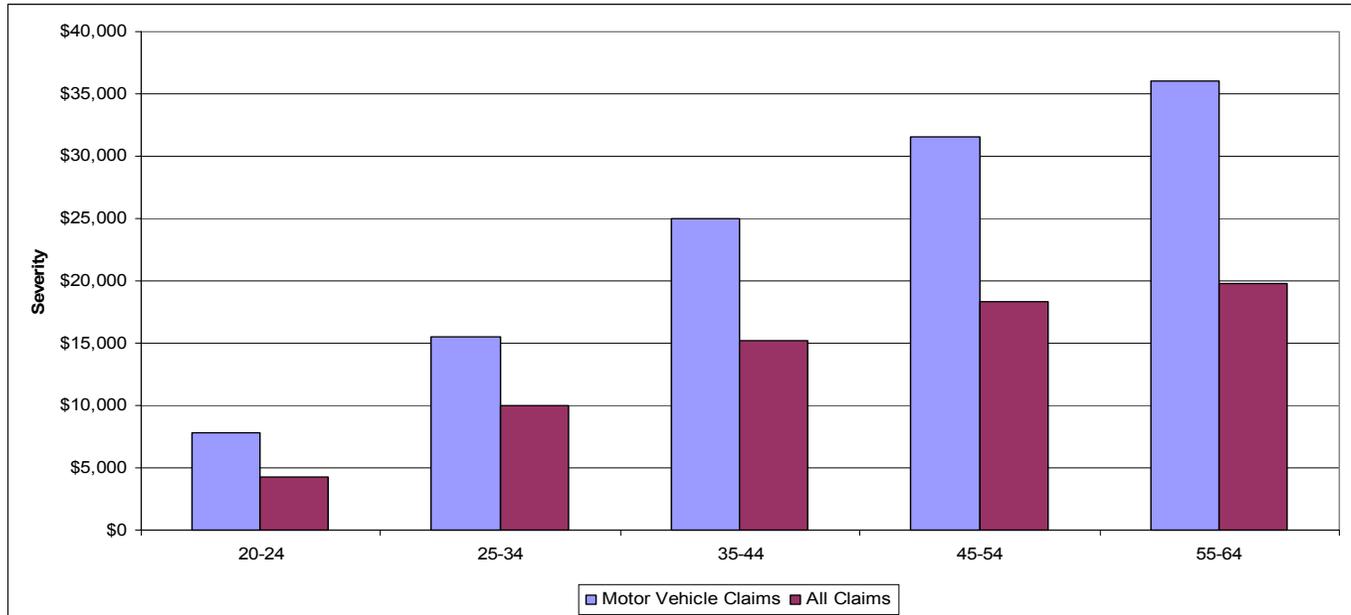


Exhibit D-2. Wage-Adjusted Indemnity Incurred Severity 24 Months After Date of Injury, Accident Years 1997–2003, NCCI.

Exhibits D-3 and D-4 show medical severity split between lost-time claims and medical-only claims by age cohort. Again, medical severity for motor vehicle claims is higher than for all claims at every age cohort. Exhibits D-3 and

D-4 are both on the same scale as shown in the indemnity severity graph in Exhibit D-2. Exhibit D-4 is then shown again in Exhibit D-5 on a scale where more detail can be seen.

Lost-Time Claims Medical Incurred Severity for Motor Vehicle Causes Is Higher Than All Causes at Every Age Cohort

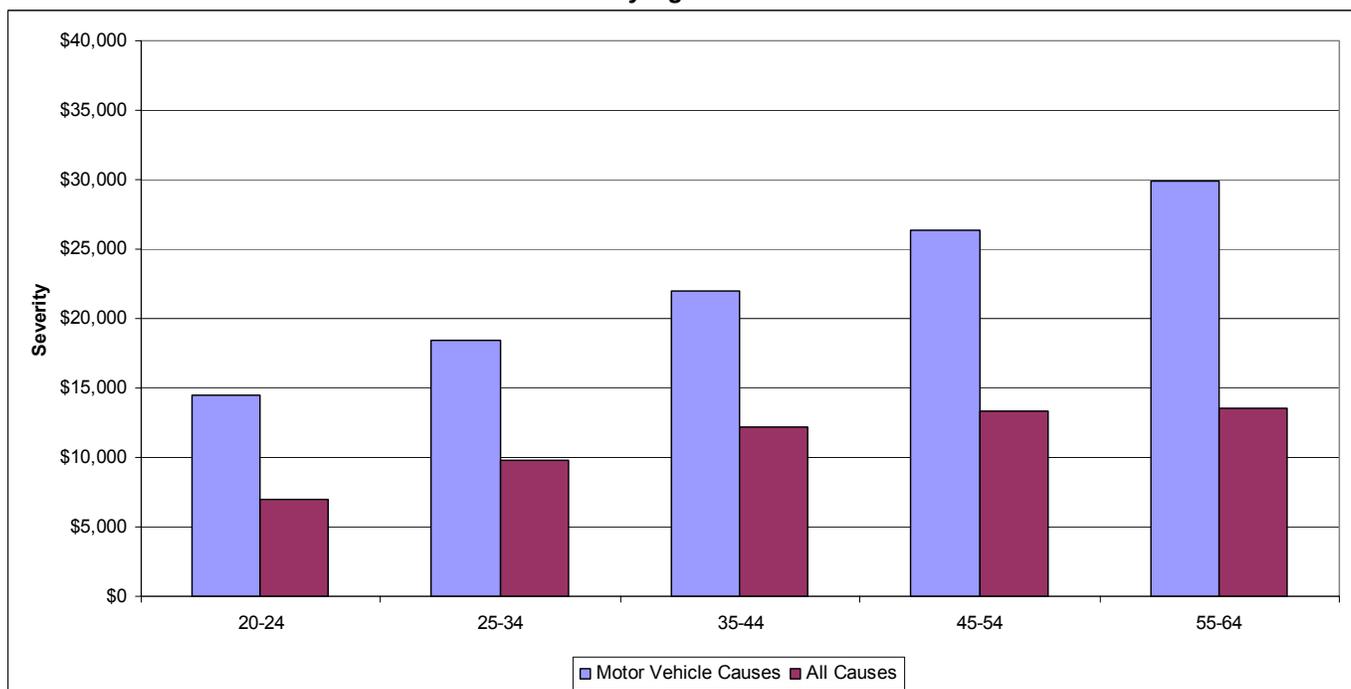


Exhibit D-3. Medical Incurred Severity 24 Months After Date of Injury for Lost-time Claims, Accident Years 1997–2003, NCCI.

Medical-Only Claims Medical Incurred Severity for Motor Vehicle Causes Is Higher Than All Causes at Every Age Cohort

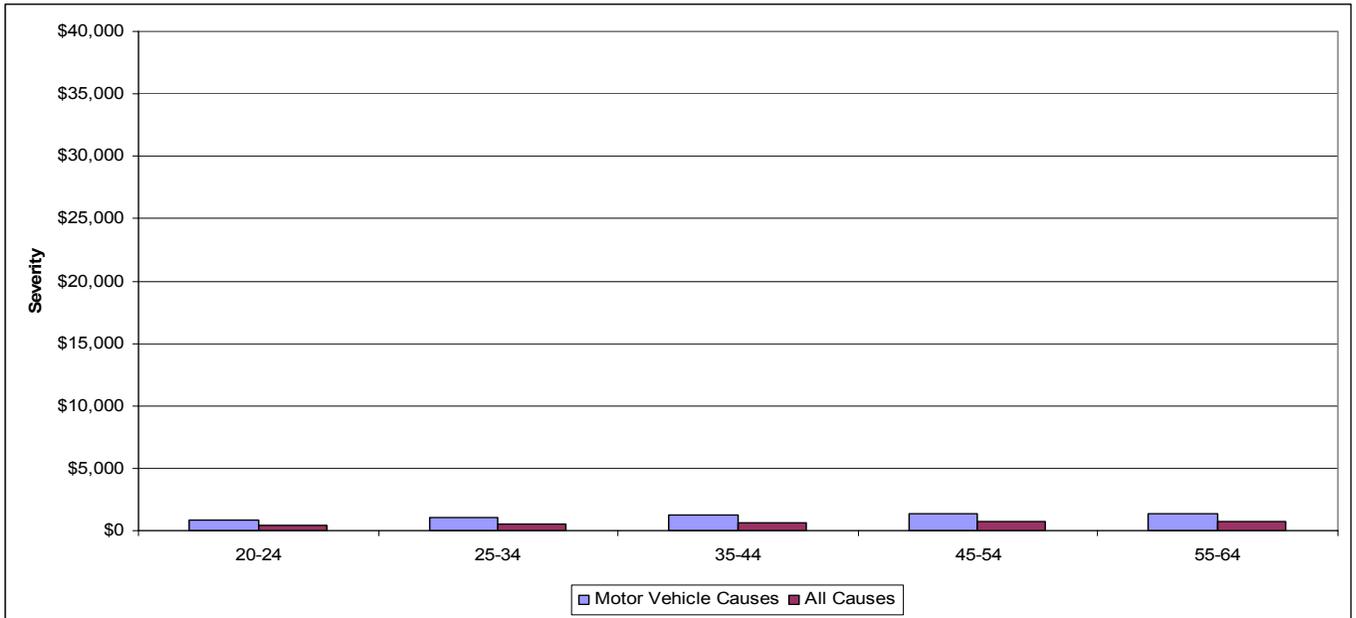


Exhibit D-4. Medical Incurred Severity 24 Months After Date of Injury for Medical-Only Claims, Accident Years 1997–2003, NCCI.

Medical-Only Claims Medical Incurred Severity for Motor Vehicle Causes Is Higher Than All Causes at Every Age Cohort

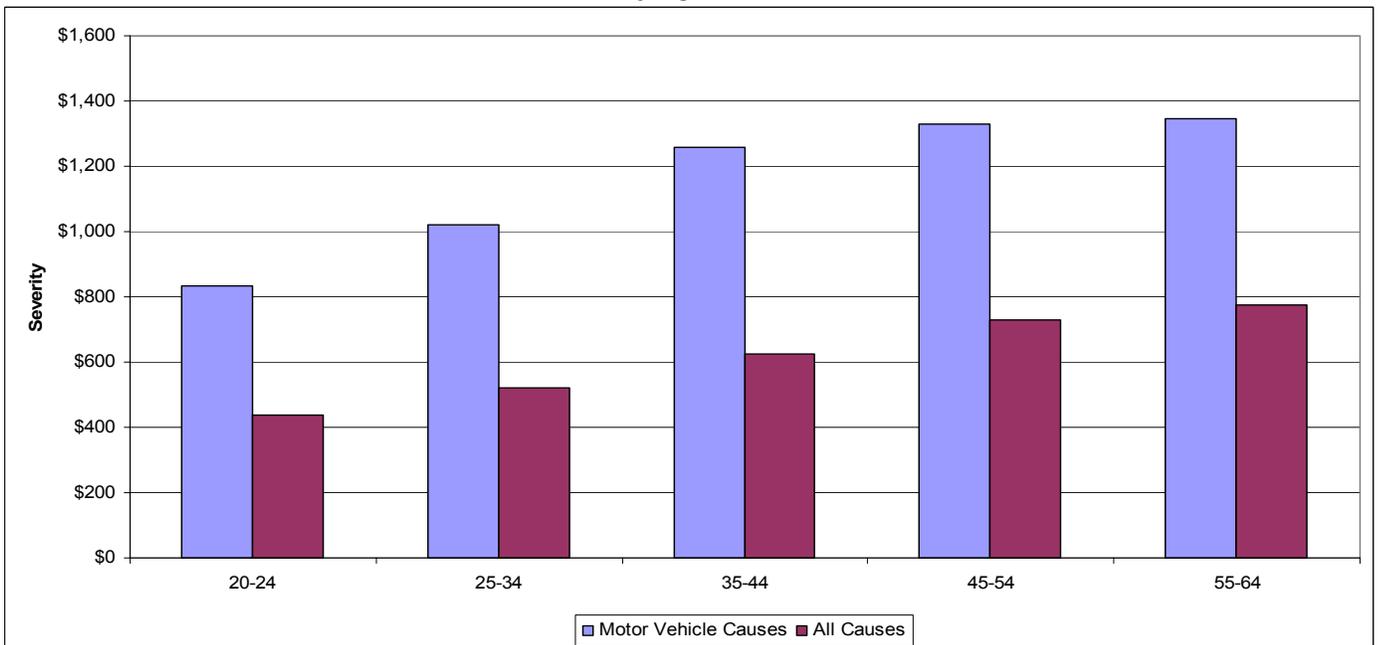


Exhibit D-5. Medical Incurred Severity 24 Months After Date of Injury for Medical-Only Claims, Accident Years 1997–2003, NCCI.

To clarify, Exhibits D-3 and D-4 are on the same scale as shown in Exhibit D-2, so the magnitude of the lost-time and medical-only medical severity can be compared to the indemnity severity. Exhibits D-4 and D-5 are the same chart on different scales.

Appendix E—Gender Differences

Motor Vehicle Accidents Contain a Higher Percentage of Males Than All Claims and Overall Employment

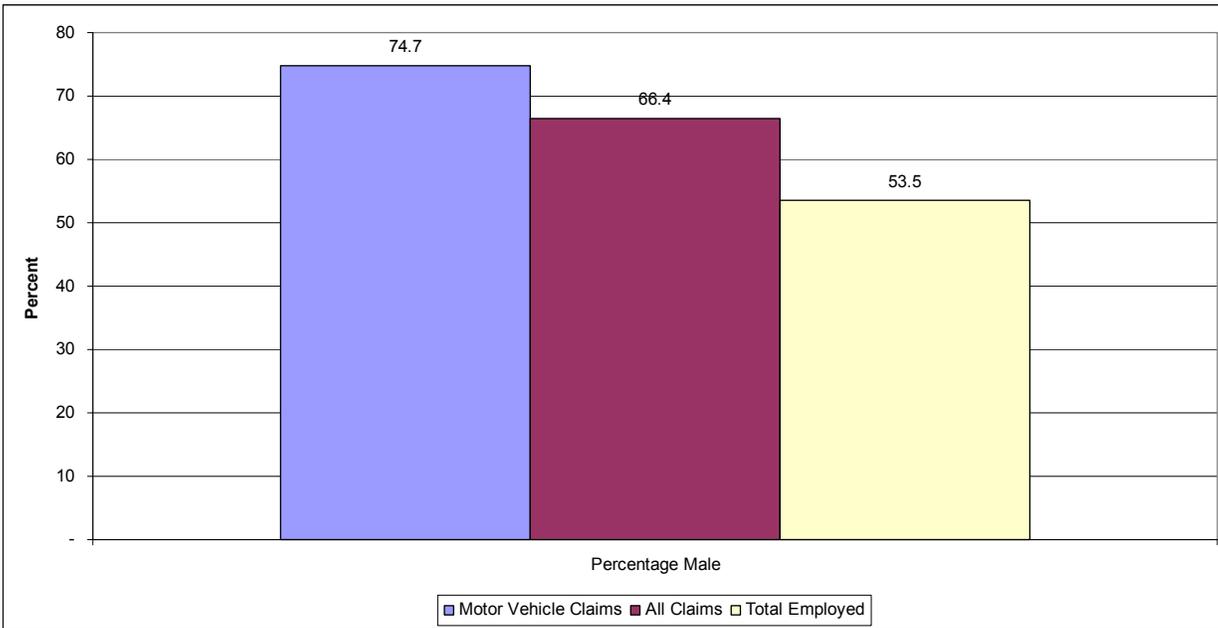


Exhibit E-1. Percentage of Males in Motor Vehicle Claims and All Claims (Accident Years 1997–2003) and Total Employed (Calendar Years 1997–2003), NCCI and Bureau of Labor Statistics.

Exhibit E-1 shows that motor vehicle accidents contain a higher percentage of males (75%) than all claims (66%). Both numbers are higher than the male share of total employment (54%). Motor vehicle accidents have a higher percentage of males because many of the top industries with motor vehicle accidents are primarily

made up of male employees. For example, data from the BLS shows that from 1997 through 2002, employment in the trucking industry was 95% male, driver-sales workers were 90% male, the automobile service and repair industry was more than 98% male, and police officers were 83% male.

Appendix F—How Far Will a Car Travel in a Few Seconds?

Exhibits F-1 and F-2 show the distance covered in feet over a few seconds at various rates of speed and the corresponding number of car lengths that distance represents.²⁵ For example, at 30 miles per hour, in three seconds a vehicle travels 132 feet or over 9 car lengths. When driving 60 miles per hour, 264 feet are covered in three seconds—or 19 car lengths. If you then add the time and distance of stopping once the driver looks up, no wonder even a short distraction can lead to an accident.

Distractions Are Dangerous—In 3 Seconds at 30 M.P.H. a Car Will Travel 132 Feet

Distance Traveled Over a Few Seconds—in Feet					
M.P.H.	1 Second	2 Seconds	3 Seconds	4 Seconds	5 Seconds
10	15	29	44	59	73
20	29	59	88	117	147
30	44	88	132	176	220
40	59	117	176	235	293
45	66	132	198	264	330
50	73	147	220	293	367
55	81	161	242	323	403
60	88	176	264	352	440
65	95	191	286	381	477
70	103	205	308	411	513

Exhibit F-1. Distance Traveled Over a Few Seconds (in Feet) at Various Rates of Speed, Calculated by NCCI.

Distractions Are Dangerous—In 3 Seconds at 30 M.P.H. a Car Will Travel More Than 9 Car Lengths

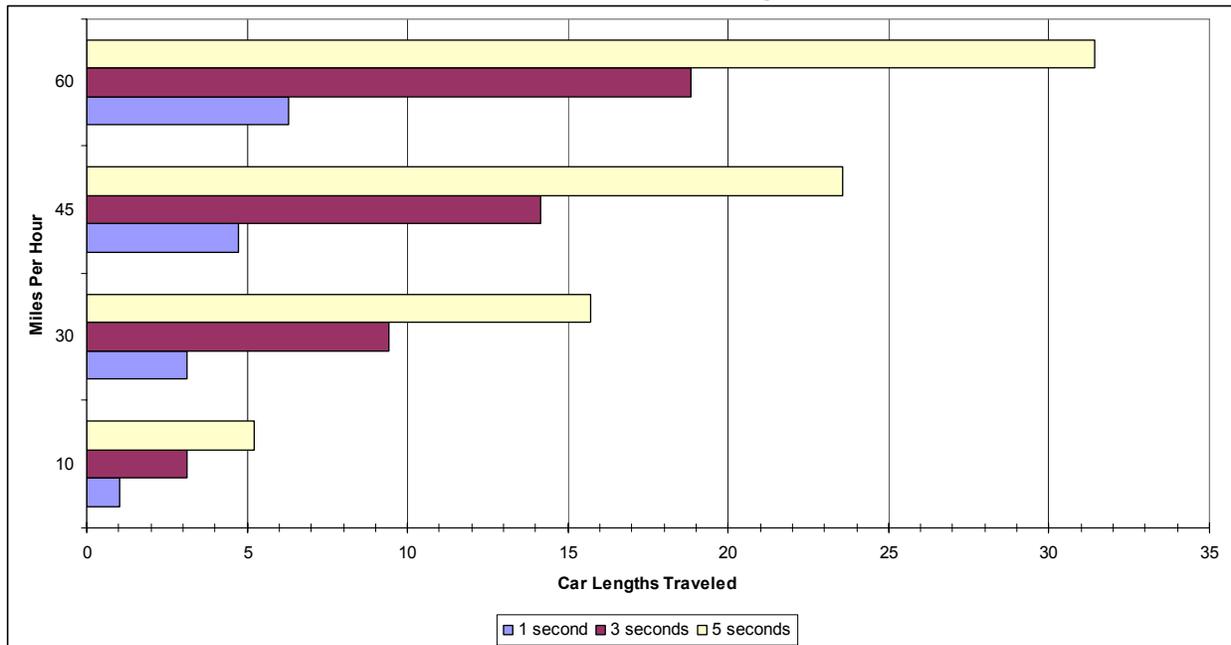


Exhibit F-2. Number of Car Lengths Covered Over a Few Seconds at Various Rates of Speed, Calculated by NCCI.

²⁵ Given that the typical sedan is about 14 feet, according to http://fermat.nap.edu/html/hs_math/rt.html.

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