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Motor Vehicle Traffic Crashes as a Leading Cause Of Death in the United States, 2008 and 2009

Rajesh Subramanian

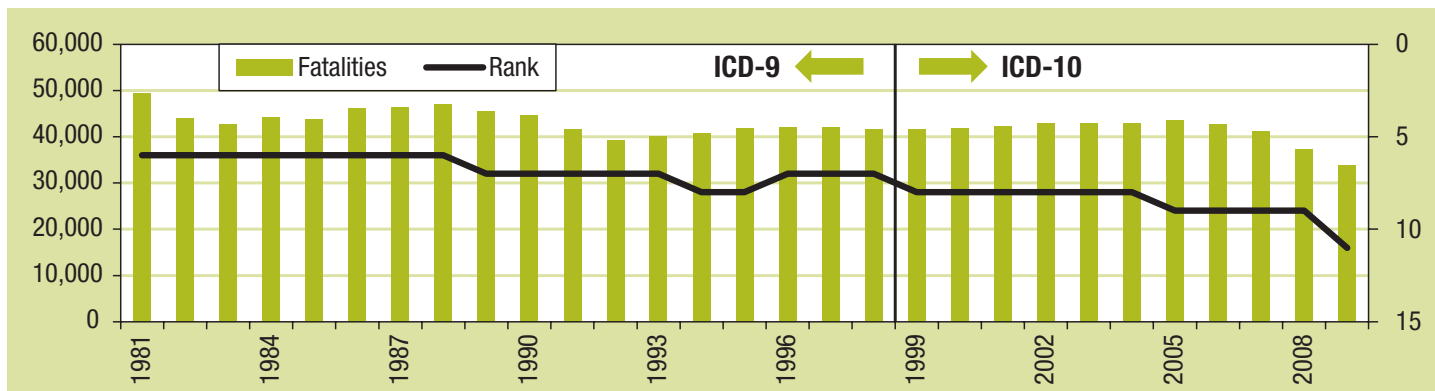
Summary

For the first time since 1981 (when data was first available), motor vehicle traffic crashes were not among the top 10 causes of death in the United States. Motor vehicle crashes were the 11th leading cause of death in 2009. In 2008, motor vehicle traffic crashes were the 9th leading cause of death overall. Fatalities in motor vehicle crashes have declined by about 25 percent since 2005, influenced largely by a significant drop in crashes and fatalities involving the younger population. In spite of these changes, motor vehicle traffic crashes continue to be leading cause of death in the younger age groups. Because of the young lives lost, in 2009, motor vehicle traffic crashes ranked 5th overall in terms of the years of life lost, i.e., the number of remaining years that the person is expected to live had they not died, behind only cancer and heart diseases. The corresponding rank in 2008 in terms of the years of life lost was 4th overall. Also, in 2009, when ranked by specific ages, motor vehicle traffic crashes were the leading cause of death for age 4 and every age 11 through 27. In 2008, motor vehicle traffic crashes were the leading cause of death for each age 13 through 30. The age groups reflect categories of interest to the National Highway Traffic Safety Administration (NHTSA) in terms of child-restraint programs (toddlers, infants, and young children), new drivers (youth and young adults), other adults, and older people.

Background

This Research Note examines the status of motor vehicle traffic crashes as a leading cause of death in the United States in 2009. This note reflects an update of a prior research note (DOT HS 811 443) that was based on the mortality data for 2007. It is based on a study of the ranking of 68 causes of death, which have been adopted by NHTSA's National Center for Statistics and Analysis (NCSA). This study was originally prompted by a number of unanswered questions regarding adequate background material and appropriate information pertaining to the general concept of motor vehicle traffic crashes as a leading cause of death. Although the National Center for Health Statistics (NCHS) in its annual report on mortality publishes detailed tabulations of the leading causes of death, the fatalities due to motor vehicle traffic crashes are lumped into the very general category of Unintentional Injuries. Fatalities due to motor vehicle traffic crashes comprise a significant proportion of all fatalities due to unintentional injuries, especially at younger ages. This fact has prompted NHTSA to separate motor vehicle crashes as an individual cause of death in this report. NCSA added the computation of the years of lost life to the conventional rank ordering of the causes of death in order to highlight the tremendous toll that motor vehicle traffic crashes have on the younger population. In fact, while motor vehicle traffic crashes ranked eleventh overall as a cause of death, they were ranked as high as fifth in terms of the years of life lost, behind other major causes of death such as cancer, heart diseases, stroke and chronic lower respiratory diseases.

Figure 1: Number and Rank of Motor Vehicle Traffic Fatalities as a Cause of Death in the United States, 1981-2009*



*Please refer to the *Methodology* section in this note about making year-to-year comparisons of ranking.

Trends

Figure 1 shows the trend in the number of fatalities as well as the rank of motor vehicle traffic crashes as a cause of death since 1981.

The Center for Disease Control (CDC) maintains a data and statistics Web portal WISQARS (Web-based Injury Statistics Query and Reporting System) that presents the leading causes of fatal injury in the United States going back to 1982. The rank order for some of the earlier years shown in Figure 1 was excerpted from the WISQARS Web site (www.cdc.gov/injury/wisqars/index.html).

Leading Cause by Gender

The rank-ordering of motor vehicle traffic crashes as a leading cause of death differed significantly between males and females. In 2009, while ranked 11th overall, motor vehicle traffic crashes were ranked 8th among males and 14th among females as a cause of death. Figure 2 shows the trend of the rank of motor vehicle traffic crashes as a leading cause of death by gender. In 2008, while ranked 9th overall, motor vehicle traffic crashes were ranked 7th among males and 12th among females as a cause of death.

When ranked by specific ages, in 2009, motor vehicle traffic crashes were the leading cause of death among males for each age 4, 5, 11 through 14 and 16 to 27. Among females, motor vehicle traffic crashes were the leading cause of death for each age 4, 6, 11, 12 and 14 to 27.

When ranked by specific ages, in 2008, motor vehicle traffic crashes were the leading cause of death among males for ages 5, 8, 9, 11 and each age 13 to 30. Among females, motor vehicle traffic crashes were the leading cause of death for age 12 and each age 14 to 27.

Methodology

Years of Life Lost: This is the number of remaining years that the person was expected to have lived had they not died. The number of years of life lost due to a particular cause is the aggregate of years of life lost for all people who died due to that cause. The expected years of remaining life are calculated using standard tables of life expectancy by age (Life Expectancy at Selected Ages for 2009, NCHS).

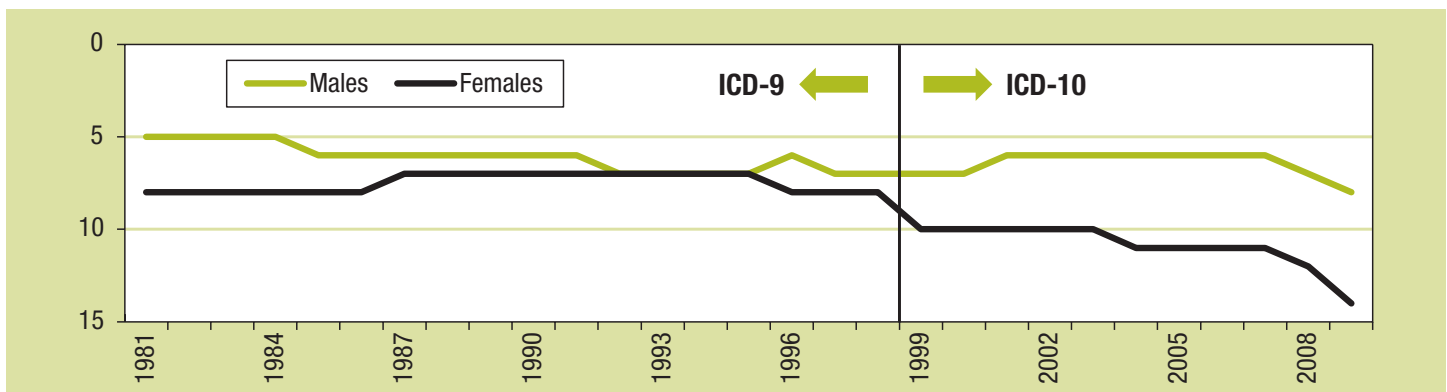
The NCSA-adopted listing of 68 causes of death is comprehensive in that all underlying causes are represented. Fifty-one of these 68 adopted causes reflect the underlying causes based on **internal** morbid bodily conditions, while 16 NCSA-adopted causes reflect the underlying causes based on **external** factors such as crashes and acts of violence, and the remaining cause reflects all other diseases. This 68-cause listing is not an arbitrary listing, but is generally in close agreement with a special listing of death causes used by the NCHS to report on leading causes of death in the United States. The latter differs from the NCSA listing primarily in causal areas related to unintentional injuries (accidental death). While NCHS uses the combined cause of *unintentional injuries* in its reports of leading causes of death, this study separates out the various causes that comprise unintentional injuries like fatalities in motor vehicle traffic crashes, accidental falls, poisoning, motor vehicle non-traffic crashes, etc. Accordingly, the rankings of some causes of death will differ from those reported by NCHS. The NCSA cause listing also differs from the NCHS listing for causes of infant mortality. While NCHS, for reasons of public health interest, uses a detailed 130-cause listing, the NCSA list combines it into one major cause – conditions originating in the *perinatal period*. Also, the fatality totals for motor vehicle traffic crashes differ marginally from those reported by NHTSA due to definitional differences.

The table (Page 3) shows the 10 leading causes of death by age group in 2008 while the table (Page 4) shows the ranking in 2009.

Year-to-Year Comparisons: The coding of mortality data changed significantly in 1999, so comparisons of the number of deaths and death rates from 1998 and before with data from 1999 and after may not be advisable. Also, cause-of-injury groupings were updated in 2003, which may affect some WISQARS mortality reports. Since 1999, mortality data has been coded using *International Classification of Disease-10th Revision* (ICD-10). Mechanism and cause of injury are based on ICD-10 external cause of injury codes.

The trend of rankings presented in Figures 1 and 2 should be viewed in the context of the coding changes and categorizations of causes of death over the times periods outlined above.

Figure 2: Rank of Motor Vehicle Traffic Fatalities as a Cause of Death in the United States, By Gender, 1981-2009*



*Please refer to the *Methodology* section in this note about making year-to-year comparisons of ranking.



Top 10 Leading Causes of Death in the United States for 2008, By Age Group¹

National Highway Traffic Safety Administration's National Center for Statistics and Analysis

R A N K	Cause and Number of Deaths											Years of Life Lost ²
	Infants Under 1	Toddlers 1-3	Young Children 4-7	Children 8-15	Youth 16-20	Young Adults 21-24	Other Adults			Elderly 65+	All Ages	
							25-34	35-44	45-64			
1	Perinatal Period 13,800	Congenital Anomalies 457	Malignant Neoplasms 395	MV Traffic Crashes 967	MV Traffic Crashes 4,462	MV Traffic Crashes 3,905	MV Traffic Crashes 6,358	Malignant Neoplasms 12,699	Malignant Neoplasms 154,494	Heart Disease 495,730	Heart Disease 616,828	Malignant Neoplasms 23% (8,863,815)
2	Congenital Anomalies 5,638	Accidental Drowning 398	MV Traffic Crashes 313	Malignant Neoplasms 730	Homicide 2,591	Homicide 2,500	Accidental Poisoning 5,946	Heart Disease 11,336	Heart Disease 104,603	Malignant Neoplasms 391,730	Malignant Neoplasms 565,469	Heart Disease 19% (7,357,856)
3	Heart Disease 396	Homicide 378	Congenital Anomalies 174	Homicide 430	Suicide 1,914	Suicide 2,210	Suicide 5,300	Accidental Poisoning 7,545	Chronic Lwr. Resp. Dis. 18,434	Chronic Lwr. Resp. Dis. 121,223	Chronic Lwr. Resp. Dis. 141,090	Chronic Lwr. Resp. Dis. 4% (1,649,643)
4	Homicide 340	Malignant Neoplasms 283	Accidental Drowning 148	Suicide 393	Accidental Poisoning 1,186	Accidental Poisoning 1,957	Homicide 4,610	Suicide 6,703	Diabetes 16,992	Stroke 114,509	Stroke 134,148	MV Traffic Crashes 4% (1,495,253)
5	Septicemia 289	MV Traffic Crashes 263	Exposure to Smoke/Fire 122	Congenital Anomalies 262	Malignant Neoplasms 722	Malignant Neoplasms 817	Malignant Neoplasms 3,521	MV Traffic Crashes 5,446	Chronic Liver Disease 16,746	Alzheimer's 81,573	Alzheimer's 82,435	Stroke 4% (1,457,066)
6	Influenza/ Pneumonia 226	Heart Disease 159	Homicide 117	Heart Disease 228	Heart Disease 439	Heart Disease 572	Heart Disease 3,254	Homicide 2,906	Stroke 16,571	Diabetes 50,883	Diabetes 70,553	Suicide 3% (1,256,990)
7	Nephritis/ Nephrosis 143	Influenza/ Pneumonia 123	Heart Disease 82	Accidental Drowning 189	Accidental Drowning 327	Accidental Drowning 211	HIV 975	HIV 2,838	Suicide 13,752	Influenza/ Pneumonia 48,382	Influenza/ Pneumonia 56,283	Accidental Poisoning 3% (1,192,873)
8	Stroke 141	Exposure to Smoke/Fire 121	Benign Neoplasms 52	Chronic Lwr. Resp. Dis. 108	Congenital Anomalies 234	Congenital Anomalies 192	Diabetes 574	Chronic Liver Disease 2,562	Accidental Poisoning 13,043	Nephritis/ Nephrosis 39,921	Nephritis/ Nephrosis 48,237	Perinatal Period 3% (1,083,355)
9	MV Traffic Crashes 98	MV Nontraffic Crashes ⁴ 109	Influenza/ Pneumonia 45	MV Nontraffic Crashes ⁴ 104	MV Nontraffic Crashes ⁴ 154	Accidental Falls 131	Stroke 539	Stroke 2,035	MV Traffic Crashes 10,003	Septicemia 27,028	MV Traffic Crashes 37,985	Diabetes 3% (1,039,376)
10	Malignant Neoplasms 70	Septicemia 80	MV Nontraffic Crashes ⁴ 35	Exposure to Smoke/Fire 103	Accidental Falls 95	MV Nontraffic Crashes ⁴ 124	Accidental Drowning 429	Diabetes 1,854	Septicemia 7,066	Hypertension Renal Dis. 21,350	Suicide 36,035	Homicide 2% (841,575)
ALL³	28,059	4,032	2,261	5,391	14,888	16,007	42,275	76,370	482,724	1,799,839	2,471,984	All Causes 100% (37,914,879)

¹Overall, motor vehicle crashes are the 11th leading cause of death. When ranked by specific ages, they are the leading cause of death for each age 13 through 30.

²Number of years calculated based on remaining life expectancy (2007 data from CDC) at time of death; percents calculated as a proportion of total years of life lost due to all causes of death.

³Not a total of top 10 causes of death. ⁴A motor vehicle nontraffic crash is any vehicle crash that occurs entirely in any place other than a public highway.

Source: National Center for Health Statistics (NCHS) CDC, Mortality Data 2008.

Note: The cause of death classification is based on the National Center for Statistics and Analysis (NCSA) Revised 68 Cause of Death Listing. This listing differs from the one used by the NCHS for its reports on leading causes of death by separating out unintentional injuries into separate causes of death, i.e., motor vehicle traffic crashes, accidental falls, motor vehicle nontraffic crashes, etc. Accordingly, the rank of some causes of death will differ from those reported by the NCHS. This difference will mostly be observed for minor causes of death in smaller age groupings.



Top 10 Leading Causes of Death in the United States for 2009, By Age Group¹

National Highway Traffic Safety Administration's National Center for Statistics and Analysis

R A N K	Cause and Number of Deaths											Years of Life Lost ²
	Infants Under 1	Toddlers 1-3	Young Children 4-7	Children 8-15	Youth 16-20	Young Adults 21-24	Other Adults			Elderly 65+	All Ages	
							25-34	35-44	45-64			
1	Perinatal Period 12,999	Congenital Anomalies 406	Malignant Neoplasms 374	MV Traffic Crashes 851	MV Traffic Crashes 3,947	MV Traffic Crashes 3,278	Accidental Poisoning 6,209	Malignant Neoplasms 12,519	Malignant Neoplasms 157,445	Heart Disease 479,152	Heart Disease 599,413	Malignant Neoplasms 24% (8,921,892)
2	Congenital Anomalies 5,319	Accidental Drowning 405	MV Traffic Crashes 338	Malignant Neoplasms 716	Homicide 2,386	Homicide 2,347	MV Traffic Crashes 5,651	Heart Disease 11,081	Heart Disease 104,188	Malignant Neoplasms 391,038	Malignant Neoplasms 567,628	Heart Disease 19% (7,204,123)
3	Heart Disease 386	Homicide 336	Congenital Anomalies 184	Suicide 468	Suicide 1,948	Suicide 2,219	Suicide 5,320	Accidental Poisoning 7,388	Chronic Lwr. Resp. Dis. 18,824	Chronic Lwr. Resp. Dis. 117,099	Chronic Lwr. Resp. Dis. 137,353	Chronic Lwr. Resp. Dis. 4% (1,625,065)
4	Homicide 317	MV Traffic Crashes 268	Accidental Drowning 139	Homicide 362	Accidental Poisoning 1,025	Accidental Poisoning 1,984	Homicide 4,222	Suicide 6,677	Chronic Liver Disease 17,531	Stroke 109,239	Stroke 128,842	Stroke 4% (1,414,941)
5	Influenza/ Pneumonia 234	Malignant Neoplasms 262	Exposure to Smoke/Fire 115	Congenital Anomalies 273	Malignant Neoplasms 714	Malignant Neoplasms 816	Malignant Neoplasms 3,659	MV Traffic Crashes 4,856	Diabetes 17,086	Alzheimer's 78,168	Alzheimer's 79,003	MV Traffic Crashes 4% (1,342,034)
6	Septicemia 221	Heart Disease 133	Homicide 115	Heart Disease 198	Heart Disease 423	Heart Disease 572	Heart Disease 3,174	Homicide 2,762	Stroke 16,686	Diabetes 48,944	Diabetes 68,705	Suicide 3% (1,284,213)
7	Stroke 147	Exposure to Smoke/Fire 117	Heart Disease 80	Accidental Drowning 153	Accidental Drowning 300	Accidental Drowning 210	HIV 881	Chronic Liver Disease 2,481	Suicide 14,406	Influenza/ Pneumonia 43,303	Influenza/ Pneumonia 52,135	Accidental Poisoning 3% (1,207,657)
8	Nephritis/ Nephrosis 111	Influenza/ Pneumonia 105	Influenza/ Pneumonia 55	Influenza/ Pneumonia 122	Congenital Anomalies 231	Congenital Anomalies 191	Diabetes 604	HIV 2,425	Accidental Poisoning 13,588	Nephritis/ Nephrosis 40,465	Nephritis/ Nephrosis 48,935	Diabetes 3% (1,022,154)
9	MV Traffic Crashes 91	MV Nontraffic Crashes ⁴ 97	MV Nontraffic Crashes ⁴ 50	Chronic Lwr. Resp. Dis. 113	Influenza/ Pneumonia 141	Influenza/ Pneumonia 159	Influenza/ Pneumonia 592	Stroke 1,916	MV Traffic Crashes 9,342	Septicemia 26,763	Suicide 36,909	Perinatal Period 3% (1,021,725)
10	Malignant Neoplasms 74	Septicemia 64	Benign Neoplasms 40	MV Nontraffic Crashes ⁴ 99	MV Nontraffic Crashes ⁴ 121	Pregnancy, Child Birth 137	Stroke 537	Diabetes 1,872	Nephritis/ Nephrosis 7,144	Hypertension Renal Dis. 21,256	Septicemia 35,639	Homicide 2% (784,678)
ALL³	26,412	3,781	2,224	5,255	13,880	15,377	42,502	74,665	490,875	1,761,947	2,437,162	All Causes 100% (37,526,185)

¹Overall, motor vehicle crashes are the 11th leading cause of death. When ranked by specific ages, they are the leading cause of death for each age 4 and 11 through 27.

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Source: National Center for Health Statistics (NCHS) CDC, Mortality Data 2009.

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