

TRAFFIC SAFETY FACTS Research Note

DOT HS 812 297

Summary of Statistical Findings

July 2016

Motor Vehicle Traffic Crashes as a Leading Cause of Death in the United States, 2012–2014

Summary

In 2014, for the sixth consecutive year, motor vehicle traffic crashes were not among the top 10 causes of death in the United States. Motor vehicle crashes were the 13th leading cause of death from 2012 to 2014.

When ranked by age, motor vehicle traffic crashes were the number one cause of death among people 16 to 24 years old for each year 2012 to 2014. Motor vehicle crashes were also the number one leading cause of death for 11-year-old children in 2014, as well as for 4-year-old children in 2013. Similarly, motor vehicle traffic crashes were the number one leading cause of death for 13-year-olds and those 16 to 25 in 2012. This continued drop in the rank of motor vehicle traffic crashes as a leading cause of death can be attributed to the 25-percent decline in traffic fatalities over the last decade. Nevertheless, despite this drop, motor vehicle traffic crashes continue to be among top 10 leading causes of death among the younger age groups.

Assessing by another measure — the years of life lost, i.e., the number of years people would have lived had they not died — motor vehicle traffic crashes ranked 7th in 2014, 2013, and 2012; as it was ranked in 2011. This reflects the toll that motor vehicle traffic crashes take on the younger population.

Background

The National Center for Health Statistics (NCHS), a division of the Centers for Disease Control and Prevention (CDC), publishes detailed tabulations of the leading causes of death in its annual report on mortality. In these tabulations, the fatalities due to motor vehicle traffic crashes are included in the general category of Unintentional Injuries, even though such fatalities comprise a significant proportion of all fatalities, especially among younger population. To highlight the contribution of motor vehicle crashes in causing fatalities, NHTSA considers them as a separate cause of death while ranking the leading causes of death. This Research Note examines the status of motor vehicle traffic crashes as a leading cause of death in the United States from 2012 to 2014. The objective is to update the relevant statistics reported in the previously published research note (Liu, Singh, & Subramanian, DOT HS 812 203) that was based on the mortality data for 2010 and 2011. The ranking is based on 68 causes of death adopted by NHTSA's National Center for Statistics and Analysis (NCSA) for the purpose of ranking the leading causes of death.

In order to highlight the tremendous toll that motor vehicle traffic crashes take on the younger population, NCSA also included the ranking based on the years of life lost, i.e., the number of years a person would have lived had he/she not died. Accordingly, this study found that while motor vehicle traffic crashes ranked 13th overall as a cause of death in 2014, they ranked as high as 7th in terms of the years of life lost. In 2012 and 2013 the motor vehicle traffic crashes also ranked 13th overall as a cause of death and 7th in terms of the years of life lost. These ranks follow the ranking of other major causes of death such as cancer, heart diseases, chronic lower respiratory diseases, suicide, stroke and accidental poisoning.

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 from 1981 through 2014.

CDC maintains the 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).





*Please refer to the *Methodology* section in this note about making year-to-year comparisons of ranking. Data Source: National Center for Health Statistics (NCHS) CDC, Mortality Data 1981–2014

Leading Cause of Death by Gender and Age

Figure 2 shows the trend of the rank of motor vehicle traffic crashes as a leading cause of death by gender. The rank of motor vehicle traffic crashes as a leading cause of death differed between males and females. In 2014, while ranked 13th overall, the motor vehicle traffic crashes ranked 12th among males and 15th among females as a cause of death. In 2013, while ranked 13th overall, motor vehicle traffic crashes ranked 10th among males and 15th among females as a cause of death. In 2012, while ranked 13th overall, motor vehicle traffic crashes ranked 8th among males and 14th among females as a cause of death.

When ranked by specific ages in 2014 motor vehicle traffic crashes were the leading cause of death among males for ages 11 and 16 to 24. Among females, motor vehicle traffic crashes were the leading cause of death for ages 7, 11, and

16 to 23. The age groups used in the ranking done in this research note reflect categories of interest to NHTSA in terms of child-restraint programs (infants, toddlers, and young children), new drivers (youth and young adults), other adults, and older people.

When ranked by specific ages in 2013, motor vehicle traffic crashes were the leading cause of death among males for ages 4 and 17 to 24. Among females motor vehicle traffic crashes were the leading cause of death for ages 4, 8, and 16 to 24.

When ranked by specific ages in 2012, motor vehicle traffic crashes were the leading cause of death among males for ages 16 to 25. Among females, motor vehicle traffic crashes were the leading cause of death for ages 7 and 15 to 25.





*Please refer to the *Methodology* section in this note about making year-to-year comparisons of ranking. Data Source: National Center for Health Statistics (NCHS) CDC, Mortality Data 1981–2014

Methodology

Years of Life Lost: This is the number of years that the person would have lived had he/she 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 number of years of the remaining life of a person is calculated using standard tables of life expectancy by age (Revised Life Table for the Total Population: United States, 2010, NCHS).

The list of 68 causes of death, adopted by NCSA, is comprehensive in that all underlying causes are represented in this list. Fifty-one of these 68 adopted causes reflect the underlying causes based on internal morbid bodily conditions, while 16 causes reflect the underlying causes based on external factors such as crashes and acts of violence, and the remaining one cause reflects all other diseases. This 68-cause listing is not arbitrary and is rather in close agreement with the special listing of causes of death used by the NCHS to report statistics 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, accidental poisoning, motor vehicle non-traffic crashes, etc. Accordingly, the rankings of some causes of death will differ from those reported by NCHS. The NCSA-adopted listing of causes of death also differs from the NCHS listing in terms of causes of infant mortality. While NCHS, for the sake of public health interest, uses a detailed 130cause 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 tables on the following pages show the top 10 leading causes of death by age group in each of the years 2012, 2013, and 2014.

Year-to-Year Comparisons: The coding of mortality data changed significantly in 1999. Therefore, the comparisons of the number of deaths and death rates from 1998 and before with the statistics for 1999 and later years may not be advisable. Also, cause-of-injury groups 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 time periods outlined above.

For More Information

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This research note and other general information on highway traffic safety may be accessed by Internet users at: www-nrd.nhtsa.dot.gov/CATS/index.aspx



U.S. Department of Transportation

National Highway Traffic Safety Administration



Top 10 Leading Causes of Death in the United States in 2012, by Age Group¹

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

R	Cause and Number of Deaths										Years	
A N	Infants	Toddlers 1–3	Young Children 4–7	Children 8–15	Youth 16–20	Young Adults 21–24	Other Adults			Elderly		of Life
K	Under 1						25–34	35–44	45-64	65+	All Ages	Line Lost ²
1	Perinatal Period 11,805	Congenital Anomalies 433	Malignant Neoplasms 360	Malignant Neoplasms 764	MV Traffic Crashes 3,266	MV Traffic Crashes 3,442	Accidental Poisoning 7,737	Malignant Neoplasms 11,337	Malignant Neoplasms 161,158	Heart Disease 477,840	Heart Disease 599,711	Malignant Neoplasms 24% (9,279,775)
2	Congenital Anomalies 4,939	Accidental Drowning 358	MV Traffic Crashes 288	MV Traffic Crashes 743	Suicide 2,110	Suicide 2,518	Suicide 6,216	Heart Disease 10,489	Heart Disease 106,493	Malignant Neoplasms 403,497	Malignant Neoplasms 582,623	Heart Disease 19% (7,325,185)
3	Heart Disease 335	Homicide 288	Congenital Anomalies 180	Suicide 554	Homicide 2,082	Homicide 2,416	MV Traffic Crashes 5,949	Accidental Poisoning 7,899	Chronic Liver Disease 20,107	CLRD⁵ 122,375	CLRD⁵ 143,489	CLRD⁵ 4% (1,723,612)
4	Homicide 289	Malignant Neoplasms 285	Accidental Drowning 159	Homicide 319	Accidental Poisoning 938	Accidental Poisoning 2,206	Homicide 4,342	Suicide 6,758	CLRD⁵ 19,745	Stroke 109,127	Stroke 128,546	Suicide 4% (1,427,306)
5	Septicemia 179	MV Traffic Crashes 274	Homicide 159	Congenital Anomalies 248	Malignant Neoplasms 687	Malignant Neoplasms 782	Malignant Neoplasms 3,674	MV Traffic Crashes 4,620	Diabetes 18,300	Alzheimer's 82,690	Alzheimer's 83,637	Stroke 4% (1,422,277)
6	Influenza/ Pneumonia 159	Heart Disease 135	Exposure to Smoke/Fire 78	Accidental Drowning 187	Heart Disease 359	Heart Disease 554	Heart Disease 3,231	Homicide 2,705	Stroke 16,724	Diabetes 52,881	Diabetes 73,932	Accidental Poisoning 4% (1,387,645)
7	Stroke 102	MV Nontraffic Crashes ⁴ 90	Heart Disease 59	Heart Disease 178	Accidental Drowning 280	Accidental Drowning 221	HIV 652	Chronic Liver Disease 2,469	Suicide 15,791	Influenza/ Pneumonia 43,355	Influenza/ Pneumonia 50,636	MV Traffic Crashes 3% (1,338,059)
8	Nephritis/ Nephrosis 82	Influenza/ Pneumonia 78	Benign Neoplasms 49	CLRD⁵ 91	Congenital Anomalies 220	Congenital Anomalies 170	Diabetes 646	Diabetes 1,867	Accidental Poisoning 15,771	Nephritis/ Nephrosis 37,740	Nephritis/ Nephrosis 45,622	Diabetes 3% (1,117,973)
9	MV Traffic Crashes 68	Exposure to Smoke/Fire 71	CLRD⁵ 46	Stroke 78	Accidental Falls 86	Diabetes 128	Chronic Liver Disease 597	Stroke 1,730	MV Traffic Crashes 9,902	Septicemia 27,022	Suicide 40,600	Perinatal Period 2% (936,209)
10	Malignant Neoplasms 63	Septicemia 52	Influenza/ Pneumonia 41	Influenza/ Pneumonia 71	Stroke 75	Accidental Falls 125	Stroke 535	HIV 1,345	Septicemia 7,322	Hypertension Renal Disease 24,307	Accidental Poisoning 36,332	Chronic Liver Disease 2% (825,159)
ALL ³	23,629	3,526	2,146	4,834	12,395	15,699	42,591	69,162	509,069	1,858,081	2,543,279	All Causes 100% (38,823,231)

¹Overall, motor vehicle crashes are the 13th leading cause of death. When ranked by specific ages they are the leading cause of death for ages 13 and 16 to 25.

²Number of years calculated based on remaining life expectancy (2010 data from CDC) at time of death; percentages 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 a crash that occurs at a location other than a public traffic way.

⁵CLRD stands for Chronic Lower Respiratory Disease.

Data Source: National Center for Health Statistics (NCHS) CDC, Mortality Data 2012.

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 in 2013, by Age Group¹

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

R	Cause and Number of Deaths									Years		
AN	Infants	Toddlers	Young Children	Children	Youth	Young Adults	Other Adults			Elderly		of Life
K	Under 1	1-3	4–7	8–15	16-20	21-24	25–34	35–44	45–64	65+	All Ages	Lost ²
1	Perinatal Period 11,952	Congenital Anomalies 411	Malignant Neoplasms 345	Malignant Neoplasms 750	MV Traffic Crashes 2,973	MV Traffic Crashes 3,362	Accidental Poisoning 8,251	Malignant Neoplasms 11,349	Malignant Neoplasms 159,509	Heart Disease 488,156	Heart Disease 611,105	Malignant Neoplasms 24% (9,278,583)
2	Congenital Anomalies 4,758	Accidental Drowning 352	MV Traffic Crashes 297	MV Traffic Crashes 724	Suicide 2,066	Suicide 2,579	Suicide 6,348	Heart Disease 10,341	Heart Disease 107,735	Malignant Neoplasms 407,558	Malignant Neoplasms 584,881	Heart Disease 19% (7,455,359)
3	Heart Disease 309	Homicide 298	Congenital Anomalies 187	Suicide 627	Homicide 1,875	Homicide 2,369	MV Traffic Crashes 5,776	Accidental Poisoning 8,374	Chronic Liver Disease 20,736	CLRD⁵ 127,194	CLRD⁵ 149,205	CLRD⁵ 5% (1,798,947)
4	Homicide 282	Malignant Neoplasms 249	Accidental Drowning 122	Homicide 287	Accidental Poisoning 900	Accidental Poisoning 2,359	Homicide 4,236	Suicide 6,551	CLRD⁵ 20,561	Stroke 109,602	Stroke 128,978	Accidental Poisoning 4% (1,472,721)
5	Influenza/ Pneumonia 178	MV Traffic Crashes 237	Homicide 114	Congenital Anomalies 253	Malignant Neoplasms 660	Malignant Neoplasms 715	Malignant Neoplasms 3,673	MV Traffic Crashes 4,448	Diabetes 18,960	Alzheimer's 83,786	Alzheimer's 84,767	Suicide 4% (1,435,859)
6	Septicemia 152	Heart Disease 140	Exposure to Smoke/Fire 97	Accidental Drowning 160	Heart Disease 352	Heart Disease 553	Heart Disease 3,258	Homicide 2,581	Accidental Poisoning 17,039	Diabetes 53,751	Diabetes 75,578	Stroke 4% (1,424,963)
7	Stroke 108	Exposure to Smoke/Fire 97	Heart Disease 82	Heart Disease 156	Accidental Drowning 268	Accidental Drowning 201	Diabetes 684	Chronic Liver Disease 2,491	Stroke 16,789	Influenza/ Pneumonia 48,031	Influenza/ Pneumonia 56,979	MV Traffic Crashes 3% (1,286,129)
8	Nephritis/ Nephrosis 86	MV Nontraffic Crashes ⁴ 86	Influenza/ Pneumonia 53	CLRD⁵ 135	Congenital Anomalies 168	Congenital Anomalies 159	Chronic Liver Disease 676	Diabetes 1,952	Suicide 15,756	Nephritis/ Nephrosis 39,080	Nephritis/ Nephrosis 47,112	Diabetes 3% (1,152,146)
9	MV Traffic Crashes 66	Influenza/ Pneumonia 86	CLRD⁵ 43	Influenza/ Pneumonia 107	MV Nontraffic Crashes ⁴ 83	Pregnancy, Child Birth 120	HIV 631	Stroke 1,687	MV Traffic Crashes 9,584	Septicemia 28,815	Suicide 41,149	Perinatal Period 2% (948,767)
10	Malignant Neoplasms 64	CLRD⁵ 54	MV Nontraffic Crashes ⁴ 39	MV Nontraffic Crashes ⁴ 83	Accidental Falls 78	Accidental Falls 120	Stroke 508	HIV 1,246	Septicemia 7,790	Hypertension Renal Disease 25,556	Accidental Poisoning 38,851	Chronic Liver Disease 2% (823,648)
ALL ³	23,440	3,423	2,153	4,878	11,706	15,734	45,463	69,573	515,851	1,904,640	2,596,993	All Causes 100% (39,452,779)

¹Overall, motor vehicle crashes are the 13th leading cause of death. When ranked by specific ages they are the leading cause of death for ages 4 and 16 to 24.

²Number of years calculated based on remaining life expectancy (2010 data from CDC) at time of death; percentages 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 a crash that occurs at a location other than a public traffic way.

⁵CLRD stands for Chronic Lower Respiratory Disease.

Data Source: National Center for Health Statistics (NCHS) CDC, Mortality Data 2013.

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 in 2014, by Age Group¹

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

R	Cause and Number of Deaths											Years
A N	Infants	Toddlers	Young Children	Children	Youth	Young Adults	Other Adults			Elderly		of Life
K	Under 1	1-3	4–7	8–15	16-20	21–24	25–34	35–44	45–64	65+	All Ages	Line Lost ²
1	Perinatal Period 11,794	Congenital Anomalies 361	Malignant Neoplasms 356	Malignant Neoplasms 692	MV Traffic Crashes 3,027	MV Traffic Crashes 3,324	Accidental Poisoning 9,334	Malignant Neoplasms 11,267	Malignant Neoplasms 160,116	Heart Disease 489,722	Heart Disease 614,348	Malignant Neoplasms 23% (9,350,085)
2	Congenital Anomalies 4,746	Homicide 327	MV Traffic Crashes 305	MV Traffic Crashes 689	Suicide 2,122	Suicide 2,713	Suicide 6,569	Heart Disease 10,368	Heart Disease 109,264	Malignant Neoplasms 413,885	Malignant Neoplasms 591,699	Heart Disease 19% (7,528,977)
3	Heart Disease 317	Accidental Drowning 319	Congenital Anomalies 156	Suicide 672	Homicide 1,826	Accidental Poisoning 2,541	MV Traffic Crashes 5,856	Accidental Poisoning 9,116	Chronic Liver Disease 21,419	CLRD⁵ 124,693	CLRD⁵ 147,101	CLRD⁵ 4% (1,787,995)
4	Homicide 249	Malignant Neoplasms 225	Accidental Drowning 153	Homicide 296	Accidental Poisoning 935	Homicide 2,217	Homicide 4,159	Suicide 6,706	CLRD⁵ 20,894	Stroke 113,308	Stroke 133,103	Accidental Poisoning 4% (1,598,329)
5	Influenza/ Pneumonia 186	MV Traffic Crashes 208	Homicide 121	Congenital Anomalies 251	Malignant Neoplasms 682	Malignant Neoplasms 787	Malignant Neoplasms 3,624	MV Traffic Crashes 4,308	Diabetes 19,404	Alzheimer's 92,604	Alzheimer's 93,541	Suicide 4% (1,487,781)
6	Septicemia 159	Heart Disease 127	Exposure to Smoke/Fire 84	Heart Disease 195	Heart Disease 369	Heart Disease 536	Heart Disease 3,341	Homicide 2,588	Accidental Poisoning 18,022	Diabetes 54,161	Diabetes 76,488	Stroke 4% (1,464,106)
7	Stroke 93	Influenza/ Pneumonia 96	Heart Disease 66	Accidental Drowning 178	Accidental Drowning 268	Accidental Drowning 207	Chronic Liver Disease 725	Chronic Liver Disease 2,582	Stroke 17,076	Influenza/ Pneumonia 44,836	Influenza/ Pneumonia 55,227	MV Traffic Crashes 3% (1,280,900)
8	Nephritis/ Nephrosis 89	MV Nontraffic Crashes ⁴ 91	MV Nontraffic Crashes ⁴ 55	CLRD⁵ 112	Congenital Anomalies 192	Congenital Anomalies 164	Diabetes 709	Diabetes 1,999	Suicide 16,294	Nephritis/ Nephrosis 39,957	Nephritis/ Nephrosis 48,146	Diabetes 3% (1,176,682)
9	MV Traffic Crashes 61	Exposure to Smoke/Fire 73	Influenza/ Pneumonia 52	Exposure to Smoke/Fire 84	MV Nontraffic Crashes ⁴ 75	Diabetes 131	HIV 583	Stroke 1,745	MV Traffic Crashes 9,578	Septicemia 29,124	Suicide 42,773	Perinatal Period 2% (934,755)
10	Malignant Neoplasms 52	Septicemia 44	CLRD⁵ 50	MV Nontraffic Crashes ⁴ 76	Influenza/ Pneumonia 75	Influenza/ Pneumonia 116	Stroke 579	HIV 1,174	Septicemia 8,223	Accidental Falls 27,044	Accidental Poisoning 42,032	Chronic Liver Disease 2% (886,318)
ALL ³	23,215	3,188	2,109	4,804	11,754	16,016	47,177	70,996	524,725	1,922,271	2,626,418	All Causes 100% (40,022,632)

¹Overall, motor vehicle crashes are the 13th leading cause of death. When ranked by specific ages they are the leading cause of death for ages 11 and 16 to 24.

²Number of years calculated based on remaining life expectancy (2010 data from CDC) at time of death; percentages 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 a crash that occurs at a location other than a public traffic way.

⁵CLRD stands for Chronic Lower Respiratory Disease.

Data Source: National Center for Health Statistics (NCHS) CDC, Mortality Data 2014.

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.

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