Distracted Drivers

By

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In Collaboration with
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Centers for Disease Control and Prevention (CDC)
2010 Science Ambassador Program

DISTRACTED DRIVING

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Summary
This lesson is geared towards high school students. Students will generate a list of behaviors that may distract drivers. Students will be given simple tasks to perform with and without distractions to simulate driving and the ability to focus on one task while distracted by something else will be measured. Students will investigate leading causes of death among teenage children using WISQARS™. This data will open students' eyes to the impact motor vehicle accidents have on the teen population. Students will create banners and slogans encouraging safe driving and raise awareness of the problem. Students will be able to make connections between motor vehicle injury data, brain development and mortality rates. These lessons include basic math and graphing, computer simulations, teacher lectures, and activities.

Learning Outcomes
- Students will be able to describe the impact of distractions on safe driving ability.
- Students will be able to recognize common activities that distract drivers.
- Students will be able to identify teenage risk factors that contribute to fatal traffic accidents.

Materials
- Two short reading passages with follow up questions for Step 2 (provided)
- Two simple math worksheets for Step 3 (provided)
- Two sets of small items to sort for Step 1 and small food items to be use as a distractor
- One stopwatch for each group of 3-4 students for Step 2
- Computers for online driving simulations and WISQAR access
- It is assumed students will have their own cell phones. Check with school administration to make sure such an activity is permitted, and instruct students to bring their phones to class.
- Graph paper and rulers

* *Use of trade names and commercial sources is for identification only and does not imply endorsement by the Science Education and Professional Development Program Office, Centers for Disease Control and Prevention or the United States Department of Health and Human Services.*

Total Duration: 2 hours 20 min.

Procedures

Teacher Preparation
- Print out and make copies of the provided reading selections or ones of your own choice. Students will read these articles and go through a timed answering of questions about the content. They will do this twice (once with and once without distractions). They will then compare their times to see if being distracted affects their reaction time.

- Print out and make copies of either the provided math worksheets or your own.
- Gather items to be sorted (examples include deck of cards, laminated colored paper cut into different shapes (template provided), game pieces, or tokens).
- Gather food for students to eat during distraction activity. These could include bagged or boxed snacks such as chips, crackers, peanuts, or hard candies.
- Preview the driving simulation and WISQARS websites so you will be prepared to help students.

Step 1 (Introduction) **Duration: 60 minutes**

- Ask students to give examples of things that might be going on in a car that could distract the driver. The class should generate a list and then tease out which are driver activities and which are passenger activities. Have a student record these on board.
- Ask students if they have ever texted while driving and if they have ever been a passenger in a car when the driver was texting.
- Show the below attention-grabbing accident video online. Follow this with a student question-and-answer session. Ask students questions like "What does this make you think of?" or "How does this make you feel?"

Web Resources

Title: ATT Don't Text While Driving Documentary
URL: http://www.att.com/gen/press-room?pid=2964
Description: 11 minute ATT video featuring moving vignettes of persons whose lives were drastically changed by texting while driving (extremely powerful).

Title: PSA Texting and Driving U.K.
URL: http://www.nydailynews.com/lifestyle/health/2009/08/19/2009-08-19_police_in_gwent_wales_hope_video_will_change_minds_about_texting_and_driving.html
Description: 4 minute British police video about the dangers of texting while driving (rather gruesome but well worth watching)

Step 2 **Duration: 60 minutes**

Set up 6 stations (2 for each activity — reading, sorting, and basic math) around the room. At each station students will complete a simple task. Student worksheets for each task are provided. Students should be timed for each activity to record a baseline, and then need to perform a similar activity with the appropriate distraction (see note below). Students will work in groups of 3 or 4 (one to time the activity, one or two to help create the distraction, and one to perform the activity).

- Activity #1 = read a short passage and answer questions. Distraction = loud friends.
- Activity #2 = Sorting items. Distraction = Texting on cell phone.
- Activity #3 = Basic math worksheet. Distraction = eating small snacks. (Snacks should be placed at arms length away so that students will have to reach out for them.)

Students will rotate within each station so each student has a chance to complete all activities, and will move around the room so they have an opportunity to complete all the tasks. Students should create a table to record times for each person in the group. They should compile the complete class data and then create a bar graph showing the time differences for each activity.

(Note: This exercise can be used to teach principals of experimental design. For example, one way to do this would be to have each student first do the task without distraction and then do the task with distraction. However, the learning effect from the first trial may affect the second. The effect of the distraction could be reduced or performance even improved for the second trial since students would be more familiar with the activity the second time. This could be overcome by randomizing; having some students first do the task with the distraction and others first do the task without the distraction. The differences should be analyzed using a paired analysis. Another would be to randomly assign students to do the task with or without the distraction and compare the group means.)

Web Resource:

Title: Science A Gogo, Interesting science news, research tidbits and science discussion
URL: http://www.scienceagogo.com/
Description: source for alternate science articles to be used for distracted reading task

Text Resource:

- Provided document with instructions for each station
- Provided documents with articles, questions and answer key
- Provided document with math problems

Step 3 **Duration: 60 minutes**

Students will use online driving games and simulations to learn that driving is a skill that must be practiced, and that driving skill is affected by the driver's attentiveness. Students should be directed to access each of the three websites below. Each game or simulation asks them to complete a different task.

Students should go directly to the "driving test" portion of the first simulation, http://www.learn4good.com/games/simulation/driverseducation.htm, and record their performance with the distraction of loud passengers. The simulation should be repeated without the distraction and their performance recorded for comparison.

For the second website, http://www.stoppingdistances.org.uk/, have students input different speeds and distractions and then see if the driver can stop in time. Results should be recorded for the outcomes at various speeds and distractions.

The third website, http://www.nytimes.com/interactive/2009/07/19/technology/20090719-driving-game.html, has a built-in texting distraction and will give students a graph of their response times and performance at the end of the task. Students should print out their results when they finish this task.

Students may be required to write one to two paragraphs summarizing their results from these activities and describe how this experience may affect their actions as drivers and as passengers in motor vehicles. (The time needed for this step may vary depending on number of students per computer and if the writing is done during class.)

(Note: The above report could take the form of a traditional scientific report with a set of hypotheses, materials and methods, results and conclusions.)

Web Resources

Title: Learn4Good Drivers Ed Game
URL: http://www.learn4good.com/games/simulation/driverseducation.htm
Description: Cartoon driving game. Have students do the driving test right away (give students option of picking a distraction while doing this activity.)

Title: Stopping Distances from the Royal Society for the Prevention of Accidents
URL: http://www.stoppingdistances.org.uk/index.htm
Description: a website that does the work for you by determining if you could stop or hit a pedestrian based on your input of speed and distractions.

Title: *New York Times* Gauging Your Distraction
URL: http://www.nytimes.com/interactive/2009/07/19/technology/20090719-driving-game.html
Description: texting game — choose the correct lane to drive in while texting.

Step 4 **Duration: 60 minutes**

Students brainstorm to answer the question, "What are the leading causes of death among teenagers?" Make a list of their responses on the board. Have students go to WISQARS website. Show them how to navigate the WISQARS site by selecting on "Fatal Injury Data" and generating a table for leading causes of death using the default report options (a copy of the table is provided as an archive document for teacher reference). Have students modify the report options and generate their own tables to answer the following questions:

- For high school age students, what are the three leading causes of death?
- From ages 10–19, how many children died from unintentional injuries?
- List the causes of death for 0–4 years and compare with the causes of death for 15–19 years.
- Why do you think the causes of death are different for these age groups?
- What do you think are examples of unintentional injuries?

Once students have answered the questions, instruct them to click on the blue box for "unintentional injury" under the 15–19 year heading to get a breakdown of this category (a copy of the table is provided as an archive document for teacher reference). Have them list the top five unintentional injuries and compare those with their thoughts from the first part of this step.

(Note: Educators may want to develop additional questions that may reflect local or national events at the time this lesson is given.)

Web Resources:

Title: CDC Injury Prevention and Control/ Data and Satatistics - WISQARS
URL:http://www.cdc.gov/injury/wisqars/index.html
Description: CDC website for Web-based Injury Statistics Query and Reporting System. This site has several features that allow users to examine varied statistics on fatal injuries. Teachers will need to famiiarize themselves with the site before asking students to naviagate through it.

Text Resource:
- Provided document to navigate WISQARS website

- Provided archive docments of fata injuries data tables

Step 5 **Duration: 15 minutes**

Students use WISQARS map function to compare motor vehicle fatalities among teens in different parts of the country (see provided document for detailed instructions on how to navigate this website). Students should:

- List three states with highest death rates (students can select individual states to identify them).
- List three states with lowest death rates.
- Identify the death rate per 100,000 for your state.

Teacher should probe students to suggest reasons for this disparity. See provided PowerPoint® for background information on Teen Driving. Teachers may choose to use the PowerPoint in its entirety, some portion, or to create their own activity using the information it provides.

Web Resources:
Title: CDC Injury Prevention and Control/ Data and Statistics — WISQARS
URL: http://www.cdc.gov/injury/wisqars/index.html
Description: CDC website for Web-based Injury Statistics Query and Reporting System. This site has several features that allow users to examine varied statistics on fatal injuries. Teachers will need to familiarize themselves with the site before asking students to navigate through it.

Text Resources:
Provided document to navigate WISQARS website
Provided "Teen Driving: What We Know and What's on the Horizon" PowerPoint by Ruth A. Shults, CDC

Step 6 **Duration: 60 minutes**

Teacher should discuss the basics of brain development and point out that our brains have different structure and chemistries as we age. There are also age-based differences in how we use experience vs. reflexes that affects our judgment at different ages. See provided document for background information on brain development or use any other resources at your disposal for basic information on brain structure and function.

Web Resource:
Title: The Teen Brain: Behind the Wheel, Wilkie Wilson
URL: www.lifesaversconference.org/handouts2010/**Wilson**.pdf
Description: a PowerPoint explaining brain development and its affect on teen driving. (Text version also provided, see below.)

Text Resource:
Provided document "The Teen Brain Behind the Wheel" PowerPoint by Wilkie Wilson from the Lifesavers Conference
Provided document "Driving Wisdom: Improving Risk Assessment in Young Drivers" PowerPoint by Dr. Noelle LaVoie

Conclusion **Duration: 10 minutes**

Students are asked to work as a class to create a contract to adopt safe driving behaviors.

Assessment

Formative assessment: Teacher should review student worksheets and graph from Step 2 and student response paragraph from Step 3. Cumulative assessment: Students are given an assignment to create posters, banners and slogans to encourage the school community to adopt safe driving practices. Finished products must use accurate data, be informative, creative, neat, easily read, and understood.

Modifications

Extensions

1) In depth discussion of brain anatomy and physiology. Discussion of the different areas of the brain, what each part controls, and how injury affects specific brain function.

2) Homework assignment to drive with parents using commentary driving, a practice where parents narrate everything they see and do while driving to model appropriate behaviors for their new teen drivers. See websites below for complete explanation. As an alternative, teens can do the commentary instead of the parents and they can compare what an experienced driver observes vs. a young driver.

3) Step 2 could be expanded to include a formal report. Different groups could analyze their data differently (or pull data from class). Examples: paired T- before and after, H_o diff = 0, different exercises, different groups of students, e.g., boys vis a vis girls. This is good science, consider bringing math trends into this.

4) Consider using a video on drinking and driving as an alternative attention grabber. Too many teens have lost their lives as a result of driving under the influence of alcohol or drugs.

Web Resources

- http://www.drivingschoolofnorthtexas.com/toppage1.htm (1-page instructions for pare nts to do commentary driving with teens.)
- http://www.smartdriving.co.uk/Better_driving_online/Week_2/commentary_s2.html (another website with instructions for commentary driving)
- http://www.cdc.gov/ParentsAreTheKey/socialmedia/video-ipledge.html (touching 1-minute video where parents pledge to help keep their young drivers safe by enforcing key driving restrictions)
- http://www.cdc.gov/ParentsAreTheKey/agreement/index.html (CDC site with an example teen/parent driving contract)
- http://www.teendriversource.org/ (The Children's Hospital of Philadelphia's teen driver website with resources for young drivers, eductors, parents, and researchers)
- http://www.cdc.gov/MotorVehicleSafety/Teen_Drivers/teendrivers_factsheet.html CDC's teen driver fact sheet provides information on risks for teen driver crashes

Education Standards

Science as Inquiry, Content Standard A: as a result of activities in grades 9–12, all students should develop the following:

- Abilities necessary to do scientific inquiry
- Understandings of scientific inquiry.

Life Science, Content Standard C: as a result of activities in grades 9–12, all students should develop understandings of the following:

- Behavior of organisms

Science and Technology, Content Standard E: as a result of activities in grades 9–12, all students should develop the following:

- Understanding about science and technology

Science in Personal and Social Perspectives, Content Standard F: as a result of activities in grades 9–12, all students should develop understandings of the following:

- Personal and community health
- Population growth
- Natural and human-induced hazards

Distracted Driving PreTest

Linda Hodges, Rosary High School, Fullerton, California and
Robin Shemesh, Harry S Truman High, School, Levittown, Pennsylvania

CDC's 2010 Science Ambassador Program

1. What is the leading cause of death among 16 to 19 year olds (in the USA)?
   Motor vehicle crashes

2. What things affect drivers ability to pay attention to the road?
   Possible answers: music, talking on phone, eating, drinking, passengers are loud, etc.

3. In your opinion, at what age should people be allowed to drive?
   Answers will vary, accept any well thought-out response

4. Why do you feel this way?
   Answers will vary, accept any well thought-out response

5. How affected do you think you would be if someone tried to distract you while reading an article?
   Answers will vary

6. How much longer will it take you?
   Answers will vary

[Note: Discussion questions can also include graphs, diagrams, or other elements useful for clear and creative explanations.]

References [Refer to *Best Practices and Editorial Recommendations for Writing Lesson Plans*]

1. http://www.distraction.gov/
2. http://www.nsc.org/safety_road/distracted_driving/pages/distracted_driving.aspx
3. http://www.fcc.gov/cgb/driving.html

Template Sample: Rubric #2

Distracted Driving Final Rubric

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Student's Name:
_____

Criteria	0 or Emerging	1 or Needs Improvement	3 or Good	4 or Very Good	5 or Excellent
Did the information target the audience (it was designed to reach)?					
Did the final product have a professional look?					
Quality of communication included with project (spelling, grammar, etc.)					
Was there an appropriate "call-to-action"?					
Was the product submitted on time?					

What is a Rubric?

Heidi Goodrich, a rubrics expert, defines a rubric as "a scoring tool that lists the criteria for a piece of work or 'what counts.'" A rubric for a multimedia project will list the things the student must have included to receive a certain score or rating.

Rubrics help the student figure out how their project will be evaluated. Generally rubrics specify the level of performance expected for several levels of quality. These levels of quality may be written as different ratings (e.g., Excellent, Good, Needs Improvement) or as numerical scores (e.g., 4, 3, 2, 1) which are then added up to form a total score which then is associated with a grade (e.g., A, B, C, etc.).

Rubrics can help students and teachers define "quality." Rubrics can also help students judge and revise their own work before handing in their assignments.

From: http://rubistar.4teachers.org/index.php?screen=WhatIs&module=Rubistar

Articles for students to read in Step 2:

Synthetic antibodies successfully tested in mammals by Kate Melville

Researchers from the University of California/Irvine (UCI) have created the first "plastic antibodies" to be successfully employed in live organisms — stopping the spread of bee venom through the bloodstream of mice.

The tiny polymeric particles - just 1/50,000th the width of a human hair were designed to match and encase melittin, a peptide in bee venom that causes cells to rupture. Large quantities of melittin can lead to organ failure and death.

The polymer nanoparticles were prepared by molecular imprinting, a technique similar to plaster casting. UCI chemistry professor Kenneth Shea and project scientist Yu Hoshino linked melittin with small molecules called monomers, solidifying the two into a network of long polymer chains. After the plastic hardened, they removed the melittin, leaving nanoparticles with minuscule melittin-shaped holes.

When injected into mice given high doses of melittin, these imprinted nanoparticles enveloped the matching melittin molecules, capturing them before they could disperse and wreak havoc, greatly reducing fatalities among the rodents.

"Never before have synthetic antibodies been shown to effectively function in the bloodstream of living animals," noted Shea. "This technique could be utilized to make plastic nanoparticles designed to fight more lethal toxins and pathogens."

Unlike natural antibodies produced by live organisms and harvested for medical use, synthetic antibodies can be created in laboratories at a lower cost and have a longer shelf life. "The bloodstream includes a sea of competing molecules, such as proteins, peptides, and cells, and presents considerable challenges for the design of nanoparticles," Shea explained. "The success of this experiment demonstrates that these challenges can be overcome."

Autism risk tripled with IVF by Kate Melville

IVF and other assisted fertility treatments may be solving one problem by creating another, suggests a researcher from Tel Aviv University who found a strong link between IVF and mild-to- moderate cases of autism. IVF has been in the spotlight recently with another study linking assisted reproduction technologies, such as IVF, to congenital malformations.

Dr. Ditza Zachor says her new research at the Assaf Harofeh Autism Center found 10.5 percent of children diagnosed with a disorder on the autism spectrum were conceived using IVF, a significantly higher number than the 3.5 percent autism rate in the general Israeli population.

Zachor is reluctant to draw any definitive conclusions, but she believes the finding poses some urgent questions. "It's too early to make a serious deduction based on that evidence alone," she says, citing other birth-related factors in her study, such as low birth rate and prematurity. Zachor now plans to separate out these risk factors to come up with more precise numbers for autism in IVF.

Zachor speculates that the key may be "imprinting," a biochemical procedure during cell division which determines which genes will be selected or "expressed" in the embryo. Research into epigenetics — changes in gene expression that occur without a change in the DNA sequence — suggest that the malformations may be caused by imprinting abnormalities introduced into the embryo while it's in a test tube environment.

"Many infertile couples choose this procedure [IVF], and they need to know whether there is a risk of autism," concludes Zachor. "However, most women who undergo fertility treatments should not be scared away from IVF procedures; the majority of children born using IVF do not have autism."

Mars' missing water by Kate Melville

University of Colorado at Boulder scientists have uncovered new evidence for a massive ocean that covered a third of Mars' surface some 3.5 billion years ago. And now they want to know; "where did all the water go?"

"While the idea of a large, ancient ocean on Mars has been repeatedly proposed and challenged over the past two decades, the new study provides further support for the idea of a sustained sea during the Noachian era more than 3 billion years ago," said CU-Boulder researcher Gaetano Di Achille. The new study is the first to combine the analysis of water-related features including scores of delta deposits and thousands of river valleys to test for the occurrence of an ocean sustained by a global hydrosphere on early Mars.

In the study, published in *Nature Geoscience*, Di Achille and co-researcher Brian Hynek contend that the 50-plus river delta deposits they identified likely marked the boundaries of the proposed ocean, since all were at about the same elevation. Twenty-nine of the 52 deltas were connected either to the ancient Mars ocean or to the groundwater table of the ocean and to several large, adjacent lakes, Di Achille explained.

The study is the first to integrate multiple data sets of deltas, valley networks and topography from NASA and European Space Agency orbiting missions of Mars dating back to 2001. The study implies that ancient Mars probably had an Earth-like global hydrological cycle, including precipitation, runoff, cloud formation, and ice and groundwater accumulation.

Di Achille and Hynek used a geographic information system to map the Martian terrain and conclude the ocean likely would have covered about 36 percent of the planet and contained about 30 million cubic miles (124 million cubic kilometers) of water. The volume of the ancient Mars ocean would have been about 10 times less than current volume of Earth's oceans.

"The average elevation of the deltas on the edges of the proposed ocean was remarkably consistent around the whole planet," notes Di Achille. In addition, the large, ancient lakes upslope from the ancient Mars ocean likely formed inside impact craters and would have been filled by the transport of groundwater between the lakes and the ancient sea, according to the researchers.

A second study headed by Hynek detected roughly 40,000 river valleys on Mars. That is about four times the number of river valleys that have previously been identified by scientists. "The river valleys were the source of the sediment that was carried downstream and dumped into the deltas adjacent to the proposed ocean," said Hynek. "The abundance of these river valleys required a significant amount of precipitation. These results support the existing theories regarding the extent and formation time of an ancient ocean on Mars and imply the surface conditions during the time probably allowed the occurrence of a global and active hydrosphere integrating valley networks, deltas and a vast ocean as major components of an Earth-like hydrologic cycle. One of the main questions we would like to answer is where all of the water on Mars went."

Future Mars missions — including NASA's Mars Atmosphere and Volatile Evolution mission

(MAVEN) which is slated to launch in 2013 — should help to answer such questions and provide new insights into the history — and mystery — of Martian water.

QUESTIONS FOR ARTICLES AT THE READING STATION:

Mars' missing water

1. According to this article, how long ago did a massive ocean cover a third of Mar's surface?
2. What kind of hydrological system did Mars have?
3. How many river valleys did Hynek's study detect on Mars?
4. What future Mars missions are planned by NASA and in what year?

Synthetic antibodies successfully tested in mice

1. At what university were these antibodies discovered?
2. What is the size of the polymeric nanoparticles produced in this study?
3. Where is this peptide melittin found in nature?
4. Where in the human body do these antibodies work?

Autism risk tripled with IVF

1. Where was this research conducted?
2. What percent of children diagnosed with autism were conceived using IVF (in vitro fertilization)?
3. What percent of children in the general Israeli population have autism?
4. Is it possible to draw definitive conclusions regarding autism from this study? Why?

Directions to navigate the WISQARS website

1. Go to the CDC WISQARS website.
2. Select: “Fatal Injury Data.”
3. Select: “Leading Causes of Death under Reports, Charts, and Maps section.”
4. In Age Group Formatting select the second option(1–24 in five year groups).
5. Select: “Submit Request.”
6. You should then see the table of 10 Leading Causes of Death, United States.

Students should use this table to answer the questions in this lesson plan. After answering the questions, students should click on the blue box under the 15–19 age group to see a bar graph of the main types of unintentional injuries.

Directions to use the WISQARS New Mapping Module

1. Go to the CDE WISQARS website.
2. Scroll down and click on the picture of the Map.
3. Under Injury Type Options, change the Intent of Injury from All Intents to Unintentional.
4. Change Mechanism of Injury from All Mechanisms to Motor Vehicle Traffic.
5. Under Scope of Map change years of report to 2004–2006.
6. Under Demographic Subsetting Options select custom age range for 13–20 or the age group of your choice.
7. Select “Submit.”
8. Scroll down to see the map.

Instructions for Student Stations:

Station 1: READING
Step 1: Read the article provided and answer the four questions on a separate sheet of paper. Remember, you are being timed to see how long it takes you to read, understand, and answer. 60 seconds per question will be added to your time for incorrect or incomplete answers!

Step 2: Now that you have established a baseline measure, read the other article and answer the four questions, but this time your friends will make noise, talk and try to distract you while you perform this task! 60 seconds per question will be added to your time for incorrect or incomplete answers. 5 minutes maximum time allowed.

Station 2: SORTING
Step 1: Take a bag of items and sort them into the identified groups

- Playing cards need to be sorted into 4 piles by suit
- Colored papers need to be sorted into piles by shape
- Tokens need to be sorted into piles by size

Keep track of your baseline time for this activity.

Step 2: Now use a different group of items to sort, but this time you will need to text messages back and forth to one of your classmates. Record your time.

Station 3: MATH WORKSHEET
Step 1: Complete the “Math Worksheet #1.” No Calculators are allowed! Nor can you use your cell phone as a calculator! Use your pencil and your brain. Keep track of your baseline time. Be aware of the 5-minute time limit and penalty for wrong or skipped answers.

Step 2: Now complete “Math Worksheet #2,” but this time you get to have a snack. Munch on the provided food items while working on the math problems. You need to continually reach for or be eating the snack.

Math worksheets are attached as a separate document — they are in landscape format and cannot be incorporated into the main lesson. Below is a section of one of the worksheets

127 + 332	27 x 5	5,467 - 1,758	108 / 4
312 / 6	30 x 5	22 x 6	49 + 33
317,006 - 24,509	235 x 11	605 / 55	9 x 6

10 Leading Causes of Death by Age Group, United States – 2007

	Age Groups										
Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	Total
1	Congenital Anomalies 5,785	Unintentional Injury 1,588	Unintentional Injury 965	Unintentional Injury 1,229	Unintentional Injury 15,897	Unintentional Injury 14,977	Unintentional Injury 16,931	Malignant Neoplasms 50,167	Malignant Neoplasms 103,171	Heart Disease 496,095	Heart Disease 616,067
2	Short Gestation 4,857	Congenital Anomalies 546	Malignant Neoplasms 480	Malignant Neoplasms 479	Homicide 5,551	Suicide 5,278	Malignant Neoplasms 13,288	Heart Disease 37,434	Heart Disease 65,527	Malignant Neoplasms 389,730	Malignant Neoplasms 562,875
3	SIDS 2,453	Homicide 398	Congenital Anomalies 196	Homicide 213	Suicide 4,140	Homicide 4,758	Heart Disease 11,839	Unintentional Injury 20,315	Chronic Low. Respiratory Disease 12,777	Cerebro-vascular 115,961	Cerebro-vascular 135,952
4	Maternal Pregnancy Comp. 1,769	Malignant Neoplasms 364	Homicide 133	Suicide 180	Malignant Neoplasms 1,653	Malignant Neoplasms 3,463	Suicide 6,722	Liver Disease 8,212	Unintentional Injury 12,193	Chronic Low. Respiratory Disease 109,562	Chronic Low. Respiratory Disease 127,924
5	Unintentional Injury 1,285	Heart Disease 173	Heart Disease 110	Congenital Anomalies 178	Heart Disease 1,084	Heart Disease 3,223	HIV 3,572	Suicide 7,778	Diabetes Mellitus 11,304	Alzheimer's Disease 73,797	Unintentional Injury 123,706
6	Placenta Cord Membranes 1,135	Influenza & Pneumonia 109	Chronic Low. Respiratory Disease 54	Heart Disease 131	Congenital Anomalies 402	HIV 1,091	Homicide 3,052	Cerebro-vascular 6,385	Cerebro-vascular 10,500	Diabetes Mellitus 51,528	Alzheimer's Disease 74,632
7	Bacterial Sepsis 820	Septicemia 78	Influenza & Pneumonia 48	Chronic Low. Respiratory Disease 64	Cerebro-vascular 195	Diabetes Mellitus 610	Liver Disease 2,570	Diabetes Mellitus 5,753	Liver Disease 8,004	Influenza & Pneumonia 45,941	Diabetes Mellitus 71,382
8	Respiratory Distress 789	Perinatal Period 70	Benign Neoplasms 41	Influenza & Pneumonia 55	Diabetes Mellitus 168	Cerebro-vascular 505	Cerebro-vascular 2,133	HIV 4,156	Suicide 5,069	Nephritis 38,484	Influenza & Pneumonia 52,717
9	Circulatory System Disease 624	Benign Neoplasms 59	Cerebro-vascular 38	Cerebro-vascular 45	Influenza & Pneumonia 163	Congenital Anomalies 417	Diabetes Mellitus 1,984	Chronic Low. Respiratory Disease 4,153	Nephritis 4,440	Unintentional Injury 38,292	Nephritis 46,448
10	Neonatal Hemorrhage 597	Chronic Low. Respiratory Disease 57	Septicemia 36	Benign Neoplasms 43	Three Tied* 160	Liver Disease 384	Septicemia 910	Viral Hepatitis 2,815	Septicemia 4,231	Septicemia 26,362	Septicemia 34,828

*The three causes are: Complicated Pregnancy, HIV, Septicemia
Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC.