

Real World Graduation: Question 60: Causes of Death

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Question 60

The U. S. Government published a report [1] summarizing the causes of death among Americans in 2004. A total of 2,397,615 deaths occurred in that year, broken down by cause as follows. The text in parentheses appears in the original; that in square brackets is editorial explanation.

- a. Diseases of the heart: 652,486
- b. Malignant neoplasm [cancers]: 553,486
- c. Cerebrovascular diseases [stroke]: 150,074
- d. Chronic lower respiratory diseases: 121,987
- e. Accidents (unintentional injuries): 112,012
- f. Diabetes mellitus: 73,138
- g. Alzheimer's disease: 65,965
- h. Influenza and pneumonia: 59,664
- i. Nephritis, nephritic syndrome, and nephrosis [kidney diseases]: 42,480
- j. Septicemia [blood poisoning]: 33,373
- k. Intentional self-harm (suicide): 32,439
- l. Chronic liver disease and cirrhosis: 27,013
- m. Essential hypertension [high blood pressure] and hypertensive renal [kidney] disease: 23,076
- n. Parkinson's disease: 17,989
- o. Assault (homicide): 17,357
- p. All other causes: 414,674

[1] A. M. Minino, M. P. Heron, S. L. Murphy, K. D. Kochanek, *National Vital Statistics Report*, Vol. 55, No. 19 (21 Aug 07), Hyattsville, MD: National Center for Health Statistics (U. S. Department of Health & Human Services)

Consuming too much salt (also known as dietary sodium) is known to cause an increase in blood pressure (hypertension). Increased blood pressure is known to be a contributing cause of strokes, kidney disease, and some heart attacks. There is a sub-category of "Accidents" that deals with poisoning, but none of those deaths are listed as sodium or salt poisoning. None of the 414,674 residual deaths from accidents are related to stroke, heart disease, or kidney disease. Also, none of the 414,674 residual deaths are called out as being due specifically to salt intake. Based on these facts and statistics, how many of these deaths can be attributed directly or indirectly to the intake of salt?

- a. The sum of those due to stroke (150,074) and nephritis/nephritic syndrome/nephrosis (42,480), which totals to 192,554
- b. The sum of those due to stroke (150,074) and essential hypertension/renal disease (23,076), which total to 173,150
- c. The sum of those due to stroke (150,074), nephritis/nephritic syndrome/nephrosis (42,480), and essential hypertension/renal disease (23,076), which totals to 215,630.
- d. The sum of those due to stroke (150,074), nephritis/nephritic syndrome/nephrosis (42,480), and essential hypertension/renal disease (23,076), plus some unknown portion of those due to heart disease (652,486), in which the total is somewhere between 215,630 and 868,116.
- e. All 2,397,615 (except the 414,674 residual deaths) were caused by salt because a) all of them are dead, and b) all of them had to have eaten some salt at some point in their life.

Answer to Question 60

This is a trick question. The correct answer is none of the above: since the report does not list salt intake as a cause of death, the number of deaths due to salt is zero. It is true that salt intake may be a contributing factor to a number of health issues such as kidney failure, but it would be impossible, except in the case of salt poisoning, to claim that salt per se was the primary cause of any deaths from those causes. The most that can be said is excessive salt may increase the risk of some health hazards, which in turn may be a contributing factor to death. This does not mean that salt caused any deaths. Be careful, therefore, when an activist claims that "trans-fats are the fourth leading cause of death", or "smoking cigarettes kills over a million Americans per year". To make such claims, the activist would have to attribute some fraction of categories of death unambiguously to these particular causes. But, there are exactly zero death certificates that read "Died of excessive intake of fatty acids". Keep in mind that a large number of people die of "old age", which means they lived so long that the body degraded and a cancer developed, or the heart gave out. The primary cause of those deaths is actually old age, and the heart attack or cancer was simply the consequence of old age.

Be careful of those activists who also claim that "guns kill more people than ...". The same report mentions (Table 10, p. 33) that there were 649 deaths due to accidental discharge of firearms, 16,750 deaths by suicide by self-inflicted firearms discharge, and 11,624 homicides by discharge of firearms. There were 15,689 suicides by other means, and 5,783 homicides by other means. How dangerous is America due to the presence of guns? Note that the number of suicides with and without firearms is nearly the same, which proves that a person determined to commit suicide is going to find a way. The absence of guns would have little effect on the suicide rate. It is interesting to note also that the suicide rate in South Korea, a nation in which privately-owned firearms are exceedingly rare, is more than three times higher than the suicide rate in the U. S [1, 2]. This proves that suicide is a societal and cultural problem, not a gun problem.

It has been estimated that a significant fraction of homicides are professional criminals killing other professional criminals (in Chicago, about 65%). (There would be a net gain to society if professional criminals killed even more professional criminals.) If even half fall into this category (which would be easy to track), the number of firearm-related homicides that matter (i.e., those in which the victim is not a criminal) is down to 5,812. Combined with the 649 deaths due to accidental discharge, the actual number of relevant deaths involving firearms is down to 6,461; or put another way, constitutes 0.000215 of the cited population of the U. S. This fraction is equivalent to 0.0215%. It is odd that no statistics are kept on how many criminals are killed by citizens, or how many crimes are prevented or pre-empted by citizens with guns.

[1] Small Arms Survey 2007 Part 2 (http://www.smallarmssurvey.org/files/sas/publications/year_b_pdf/2007/2007SAS_English_press_kit/2007SASCh2_summary_en.pdf); summarized on wikipedia at <http://en.wikipedia.org/w/index.php?oldid=547789057>

[2] <http://en.wikipedia.org/w/index.php?oldid=547795916>