# Viruses: Tiny But Deadly

Today the health-conscious world is concerned with such killers as cancer, heart disease, and AIDS. The viral diseases of polio and chicken pox seem like a distant memory, and the flu (influenza virus) seems like an annoyance more than a danger. Even war seems like a major killer in a completely different ballpark from the flu. However, in the early part of the 20th century, war and the flu went hand in hand, and you would be surprised which was the mightiest killer.

World War I claimed the lives of approximately 10 million people during the years 1914 to 1918. However, as the war was winding down, an influenza (flu) epidemic broke out worldwide. In one year alone, this tiny virus killed at least 25 million people, with some estimates as high as 70 million! How does this number compare with today's worldwide death rate, and specifically to deaths caused by heart disease and HIV/AIDS?

| Death Rates Estimated to the Nearest Million | |
|---|---|
| Worldwide deaths, TODAY | 57 million per year |
| USA deaths, TODAY | 2 million per year |
| Worldwide deaths due to heart disease, TODAY | 17 million per year |
| Worldwide deaths due to HIV/AIDS TODAY | 3 million per year |
| Worldwide deaths due to the Black Death, 1347-1400 | 2 million per year |
| Worldwide deaths due to World War I, 1914-1918 | 2 million per year |
| Worldwide deaths due to Influenza epidemic, 1918 | 25 million in 1 year |

**How to prevent the flu, from *News of the World*, November 3rd, 1918:**

"Wash inside nose with soap and water each night and morning; force yourself to sneeze night and morning, then breathe deeply; do not wear a muffler; take sharp walks regularly and walk home from work; eat plenty of porridge."

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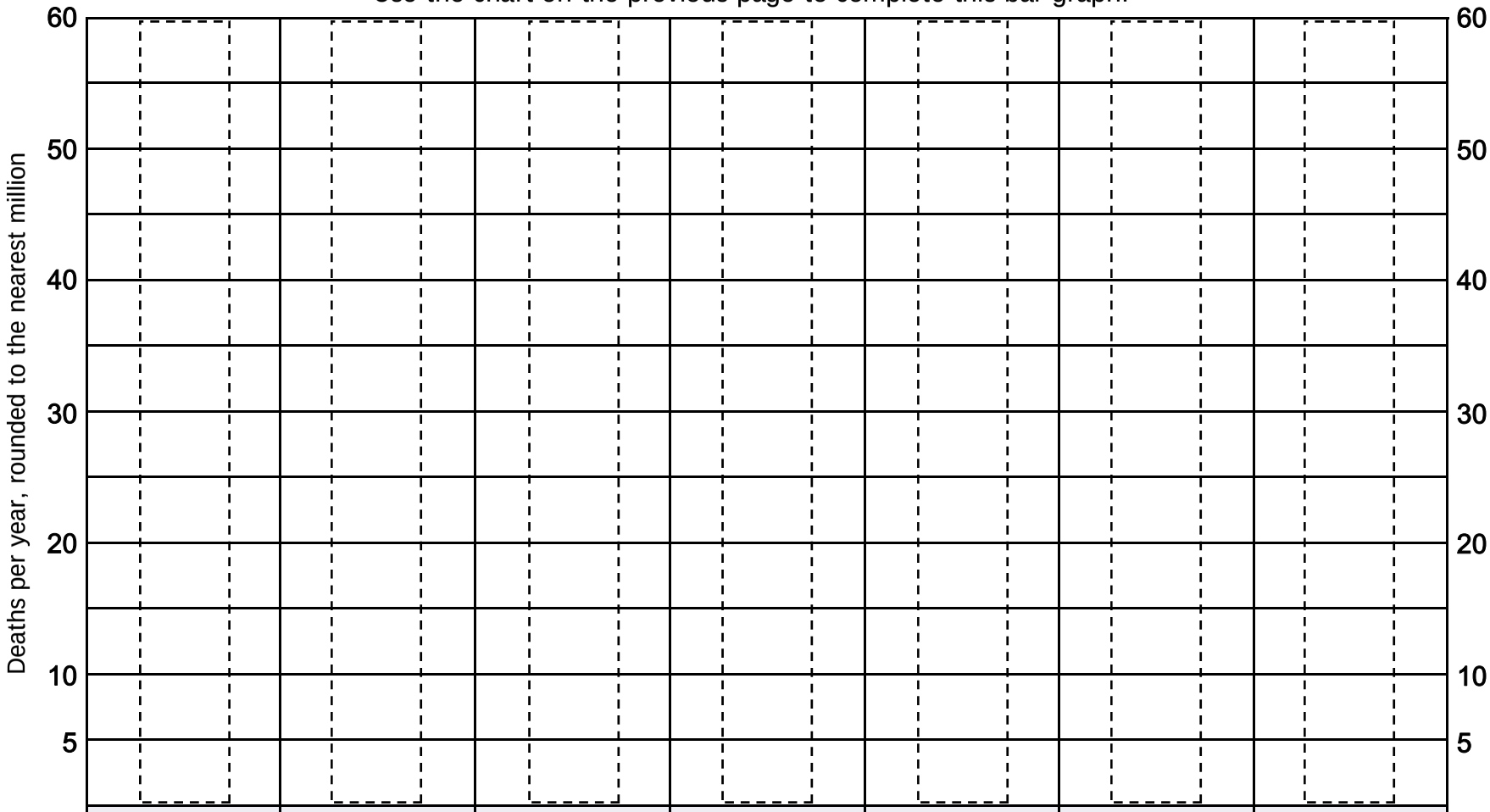
Use the chart on the previous page to complete this bar graph.



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Now answer the following questions, using the information you have learned.

**REMINDER:** To find the percent of a total, simply divide the smaller number by the larger (removing any extra zeros), and move the decimal over two places. For example:

**12 million ÷ 2 billion = 12 ÷ 2000 = 0.006**

**So, 12 million is 0.6 % of 2 billion**

1. If the current world population is 6 billion (6000 million), what percent dies each year?

2. What percent of the world population dies of HIV/AIDS (caused by a virus) each year?

3. What percent of the world population dies of heart disease each year?

4. The world population in 1917 was approximately 1.8 billion (1800 million). What percent of the population died from the influenza virus the following year?

5. The world population in 1340, before the start of the Black Plague, was approximately 440 million. What percent of the population died of the Plague each year?

6. Write the percent of population mortality above each killer:

| _____ | _____ | _____ | _____ | _____ |
|---|---|---|---|---|
| ALL deaths now | HIV/AIDS | heart disease now | flu of 1918 | Black Plague |

7. You have probably heard of heart disease, HIV/AIDS, and the Black Plague. Had you ever heard of the influenza epidemic of 1918 before this? Probably not. How could this be, in light of these startling facts? Write down a few possible explanations. Be creative!

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## Sources

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http://www.infoplease.com

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http://www.britannica.com

National Center for Health Statistics:
http://www.cdc.gov/nchs/fastats/deaths.htm

Influenza in the First World War:
http://www.spartacus.schoolnet.co.uk/FWWinfluenzia.htm

Historical Estimates of World Population:
http://www.census.gov/ipc/www/worldhis.html

## More on the Influenza Epidemic of 1918

http://www.pbs.org/wgbh/amex/influenza/

http://virus.stanford.edu/uda/

http://en.wikipedia.org/wiki/Spanish_flu

http://www.ninthday.com/spanish_flu.htm

http://www.vortex.is/sigrun/

http://www.cnn.com/2004/HEALTH/02/05/historic.flu.ap/

http://history1900s.about.com/od/influenzaepidemic/