Mortality Worksheet

DEFINITION OF TERM

Mortality refers to death.

Mortality[1]

"Death. Usually the cause (a specific disease, a condition, or an injury) is stated."
"Mortality refers to the number of deaths in a population" (Weiss and Lonnquist)

Mortality rate[2]

"Mortality rate is a measure of the number of deaths (in general, or due to a specific cause) in some population, scaled to the size of that population, per unit time. Mortality rate is typically expressed in units of deaths per 1000 individuals per year; thus, a mortality rate of 9.5 in a population of 100,000 would mean 950 deaths per year in that entire population."

"The **crude death rate**, the total number of deaths per 1000 people."[3]

FRAMING THE CONCEPT

"A crude … mortality (death rate) is one that relates to results for a population taken as a whole, without subdivision or refinement. The crude mortality from lung cancer in men in England and Wales during 1985-89 was 1034/million/year compared with 575/million/year during 1950-54. However, this bald fact masks a more complex pattern of trends in which mortality from lung cancer was declining in younger men while going up in the elderly."[3]

EQUATION

$$\text{Crude Death Rate}^{4} = \frac{\text{Total \# of deaths in a population in a given year}}{\text{Total \# in that population at mid-year}} \times 1{,}000$$

OR

$$\text{Crude Death Rate}^{5} = \frac{\text{Total \# of deaths in a population in a given year}}{\text{Total \# in that population at mid-year}} \times 100{,}000$$

EXAMPLE

In 2003 the (recorded – US Census[6]) total number of deaths in the U.S. was 2,448,000.
U.S. population at mid-year 2003 was 291,428,000

Calculate the death (mortality) rate for **the U.S. in 2003,** per 1,000 people.

$$\text{Crude Death Rate} = \frac{2{,}448{,}000}{291{,}428{,}000} \times 1{,}000$$

$$= 0.0084 \times 1{,}000$$

$$= 8.4 \text{ per } 1{,}000$$

EXAMPLE

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[1] http://www.atsdr.cdc.gov/glossary.html

[2] http://en.wikipedia.org/wiki/Mortality_rate

[3] http://www.bmj.com/epidem/epid.2.html

[4] Weiss and Lonnquist, The Sociology of Health, Healing and Illness (5th ed), 2006

[5] Weiss and Lonnquist, The Sociology of Health, Healing and Illness (5th ed), 2006

[6] http://www.census.gov/compendia/statab/vital_statistics/

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In 2000 the (recorded – US Census[7]) total number of deaths in the U.S. was 2,403,000.
U.S. population at mid-year 2000 was 281,425,000

Calculate the death rate (mortality rate, etc.) for **the U.S. in 2000,** per 1000 people.

$$\text{Crude Death Rate} = \frac{2{,}403{,}000}{281{,}425{,}000} \times 1{,}000$$

$$= 0.0085 \times 1{,}000$$

$$= 8.5 \text{ per } 1{,}000$$

PROBLEM 1

In 2003 the (recorded – US Census) total number of deaths in Washington State was 46,000.
Washington State population in 2003 was 6,131,000

Calculate the death rate for Washington State in 2003, per 1,000 people.

(Answer: 7.5 per 1,000)

PROBLEM 2

In 2000 the (recorded – US Census) total number of male deaths in the U.S. was 1,178,000.
The total number of males in the U.S. population in 2000 was 138,056,000.

Calculate the death rate for U.S. in 2000, per 1,000 people.

(Answer: 8.5 per 1000)

PROBLEM 3

In 2000 the (recorded – US Census) total number of female deaths in the U.S. was 1,226,000.
The total number of females in the U.S. population in 2000 was 143,368,000.

Calculate the death rate for U.S. in 2000, per 1000 people.

(Answer: 8.6 per 1000)

[7] http://www.census.gov/compendia/statab/vital_statistics/