

PH 384: Epidemiology:
Assignment 2 (100 points possible)

1. Assume for a given year there is a population of 1,725,000 people, 345,000 of whom are 65 years and older. There are 22,425 live births, 13,800 deaths in all age groups from all causes, 10,350 deaths for those 65 and above, 4000 deaths from heart disease, 6000 death from cancers, 95 deaths among infants less than 28 days, 140 deaths among infants less than one year (including those < 28 days), and 6 deaths among pregnant mothers. Assume that there 40,000 new cases of influenza, 45,000 people have influenza at some point in time during the year. Calculate the following rates to one decimal place. (30 points)
 - a. crude mortality rate (per 100,000)
 - b. age-specific mortality rate among those 65 and above (per 100,000)
 - c. proportionate mortality rate for cancer

2. Consider the table below. We know that transport deaths¹ (motor vehicle, ATV, pedestrian, etc.) are higher for males than for females. But how do states compare? Here, we provided you data for two states, Florida and Kentucky for 2010. Included are age breakdowns, population for the specific age categories and the total number of deaths for that age group. (70 points)

- a. Complete the table below by calculating the age-specific and crude mortality rates for each population in both states.

Transport Deaths for Males in Florida and Kentucky (2010)						
	Florida			Kentucky		
Age	Population	Deaths	Mortality Rate per 100,000	Population	Deaths	Mortality Rate per 100,000
18 - 29	1,483,983	550		353,630	149	
30 - 45	1,902,385	412		463,753	123	
46 - 59	1,771,702	473		424,081	135	
60 +	1,984,294	423		369,021	173	
Total	7,142,364	1858		1,610,485	580	

- b. Provide a summary crude mortality rate for each of the two states and compare them. Which is higher?

Crude Mortality Rate Florida:

¹ Source: <http://www.cdc.gov/injury/wisqars/index.html>

Crude Mortality Rate Kentucky: Which is higher?

Which is higher?

c. Next, let's standardize this information to sum of total population in Florida and Kentucky, to see if this changes what we know about these two populations. Complete the following table using direct standardization

Transport Deaths for Males in Florida and Kentucky (2010)					
Age	Florida Age Specific Mortality Rate per 100,000	Kentucky Age Specific Mortality Rate per 100,000	Reference Population US 2010* ²	Expected Deaths Florida	Expected Deaths Kentucky
18 - 29			1,837,613		
30 - 45			2,366,138		
46 - 59			2,957,783		
60 +			2,353,315		
Total			8,752,849		

Your answer under “expected deaths” tells us how many males within each age category in the U.S. would die if they were dying at the rate of Florida and Kentucky, respectively.

Age-adjusted mortality rate (per 100,000) for Florida?

Age-adjusted mortality rate (per 100,000) for Kentucky?

Which is higher?

² We used the 2010 U.S. Population because of convenience – this data was from the CDC WISQARs system so we compared Kentucky and Florida in 2010 against the same information from the U.S. in 2010. All data included only males, all races and ethnicities.

