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**ASSIGNMENT 4**  
**Due by December 11, 2019 (Wednesday) at 11:59pm**  
**Maximum of possible points: 20**

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**Instructor information**

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**Purpose**

The purpose of this assignment is to test the knowledge about topics on period mortality, as discussed in the classroom and in the textbook (Wachter, Kenneth W. 2014. **Essential Demographic Methods**. Cambridge: Harvard University Press).

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**Task**

The following questions are related to demographic concepts and methods. Answers to substantive questions should be no more than 150 words and written in Microsoft Word. The Word document should be on US Letter paper size, one-inch margins, Arial font, size 11, 1.5 line spacing. Answers to methods questions should be solved in Microsoft Excel, but the final results and interpretations should be exported and properly formatted in the Word document. Look at examples of how to properly format tables and figures in Word at [http://www.ernestoamaral.com/docs/soci320-19fall/Examples\\_tab\\_fig.pdf](http://www.ernestoamaral.com/docs/soci320-19fall/Examples_tab_fig.pdf).

Questions 7.1 and 7.3 are worth 8 points each. Question 7.2 is worth 4 points.

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**Submission**

Students must email the Excel file to the professor. The Word file should be submitted through Turnitin within eCampus. Turnitin is an online database system designed to help instructors **detect plagiarism**, track citations, facilitate peer reviews, and provide paperless grading markup in written assignments. Students should develop this assignment **individually**.

## Questions – Chapter 7 – Period mortality

7.1. Collect death and population data for two U.S. states in 2017 by sex and five-year age groups. In order to download this data, visit the CDC WONDER data website (<https://wonder.cdc.gov/>), provided by the Centers for Disease Control and Prevention.

a) Under the tab “WONDER Systems,” topic “Mortality,” sub-topic “Underlying Cause of Death,” click on the link “Detailed Mortality”.

b) Under the tab “About,” click on button “I Agree.”

c) Under the tab “Request Form:”

c.1) Indicate table layout:

### 1. Organize table layout:

<b>Group Results By</b>	State	⌵
<b>And By</b>	Year	⌵
<b>And By</b>	Gender	⌵
<b>And By</b>	Age Groups	⌵
<b>And By</b>	None	⌵

c.2) Select two states. You can repeat these steps for one state at a time. Or you can use Ctrl+Click to select multiple states. When you click on the left window, the state will appear on the right window:

### 2. Select location:

Click a button to choose locations by State, Census Region or HHS Region.

**States**  **Census Regions**  **HHS Regions**

**Browse** or **search** to find items in the States Finder Tool, then **highlight** the items to use for this request. (The *Currently selected* box displays all current request items.)

[Finder Tool Help](#)   [Advanced Finder Options](#)

Browse
Search
Details

**States**

- + 40 (Oklahoma)
- + 41 (Oregon)
- + 42 (Pennsylvania)
- + 44 (Rhode Island)
- + 45 (South Carolina)
- + 46 (South Dakota)
- + 47 (Tennessee)
- + 48 (Texas)
- + 49 (Utah)
- + 50 (Vermont)

*Currently selected:*

06 (California)  
 48 (Texas)

Open
Close
Close All

**Browse** the list by opening and closing items.  
**Use** Ctrl+Click to multiple select, Shift+Click for a range.

c.3) Select “five-year age groups” and keep “all ages,” “all genders,” “all origins,” “all races:”

### 3. Select demographics:

**Hint:** Use Ctrl + Click for multiple selections, or Shift + Click for a range.

**Pick between:**

- Ten-Year Age Groups
- Five-Year Age Groups
- Single-Year Ages
- Infant Age Groups

**Five-Year Age Groups**

All Ages  
 < 1 year  
 1-4 years  
 5-9 years  
 10-14 years  
 15-19 years  
 20-24 years  
 25-29 years  
 30-34 years  
 35-39 years  
 40-44 years  
 45-49 years

Default rates per 100,000

**Gender**

All Genders  
 Female  
 Male

**Hispanic Origin**

All Origins  
 Hispanic or Latino  
 Not Hispanic or Latino  
 Not Stated

**Race**

All Races  
 American Indian or Alaska Native  
 Asian or Pacific Islander  
 Black or African American  
 White

c.4) Select year 2017. When you click on the left window, the year will appear on the right window:

**4. Select year and month:**

**Browse** or **search** to find items in the Year/Month Finder Tool, then **highlight** the items to use for this request.  
(The *Currently selected* box displays all current request items.)

[Finder Tool Help](#)   [Advanced Finder Options](#)



c.5) Keep “all weekends,” “all values,” “all places” selected:

**5. Select weekday, autopsy and place of death:**

**Hint:** Use Ctrl + Click for multiple selections, or Shift + Click for a range.

**Weekday**

- All Weekdays
- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Unknown

**Autopsy**

- All Values
- No
- Yes
- Unknown

**Place of Death**

- All Places
- Medical Facility - Inpatient
- Medical Facility - Outpatient or ER
- Medical Facility - Dead on Arrival
- Medical Facility - Status unknown
- Decedent's home
- Hospice facility
- Nursing home/long term care
- Other

c.6) Keep “all causes of death” selected:

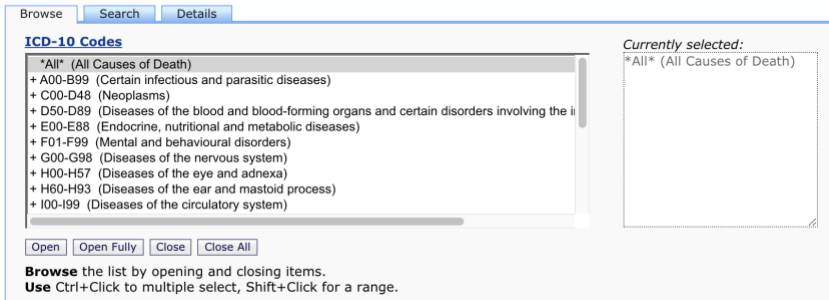
**6. Select cause of death:**

Click a button to select ICD codes by Chapters or by Groups.

- [ICD-10 Codes](#)
- [ICD-10 130 Cause List \(Infants\)](#)
- [Drug/Alcohol Induced Causes](#)
- [ICD-10 113 Cause List](#)
- [Injury Intent and Mechanism](#)

**Browse** or **search** to find items in the ICD-10 Codes Finder Tool, then **highlight** the items to use for this request.  
(The *Currently selected* box displays all current request items.)

[Finder Tool Help](#)   [Advanced Finder Options](#)



c.7) Select “Export Results” and “Show Totals:”

**7. Other options:**

- Export Results**  (Check box to download results to a file)
- Show Totals**
- Show Zero Values**
- Show Suppressed Values**
- Precision**  decimal places
- Data Access Timeout**  minutes

c.8) Click on the “Send” button at the bottom of the page to save the table as a TXT file. You can also check the results of your selection by going back to the top of the window and clicking on the tab “Results.” You can also click on the “Export” button to save the table as a TXT file. Columns are separated by tabs, a format that allows this file to be imported into a wide variety of programs, such as Excel.

**Messages:**  
 ▶ Totals are not available for these results due to suppression constraints. [More Information.](#)  
 ▶ Rows with suppressed Deaths are hidden. Use Quick Options above to show suppressed rows.

State	Year	Gender	Five-Year Age Groups	Deaths	Population	Crude Rate Per 100,000
California (06)	2017	Female	< 1 year	863	238,625	361.7
California (06)	2017	Female	1-4 years	130	968,178	13.4
California (06)	2017	Female	5-9 years	107	1,229,425	8.7
California (06)	2017	Female	10-14 years	123	1,245,910	9.9
California (06)	2017	Female	15-19 years	267	1,254,099	21.3
California (06)	2017	Female	20-24 years	497	1,338,452	37.1
California (06)	2017	Female	25-29 years	606	1,513,117	40.0
California (06)	2017	Female	30-34 years	808	1,405,834	57.5
California (06)	2017	Female	35-39 years	1,075	1,337,511	80.4
California (06)	2017	Female	40-44 years	1,428	1,255,619	113.7
California (06)	2017	Female	45-49 years	2,309	1,306,528	176.7
California (06)	2017	Female	50-54 years	3,626	1,285,223	282.1
California (06)	2017	Female	55-59 years	5,669	1,288,876	439.8
California (06)	2017	Female	60-64 years	7,532	1,161,996	648.2
California (06)	2017	Female	65-69 years	9,334	968,879	963.4
California (06)	2017	Female	70-74 years	10,907	740,010	1,473.9
California (06)	2017	Female	75-79 years	12,777	516,095	2,475.7
California (06)	2017	Female	80-84 years	16,515	372,246	4,436.6
California (06)	2017	Female	85-89 years	20,506	Not Applicable	Not Applicable
California (06)	2017	Female	90-94 years	21,099	Not Applicable	Not Applicable
California (06)	2017	Female	95-99 years	10,865	Not Applicable	Not Applicable

c.9) Open Excel and open the TXT file. On step 1, indicate that the file has “delimited” columns:

**Text Import Wizard - Step 1 of 3**

The Text Wizard has determined that your data is **Delimited**.

If this is correct, choose Next, or choose the Data Type that best describes your data.

Delimited - Characters such as commas or tabs separate each field.  
 Fixed width - Fields are aligned in columns with spaces between each field.

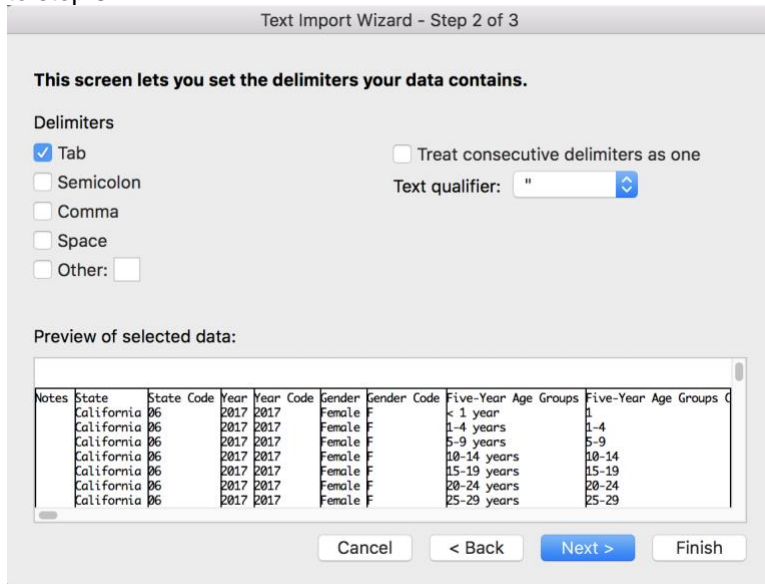
Start import at row:  File origin:

Preview of selected data:

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Preview of file /Users/amaral/Desktop/Underlying Cause of Death, 1999-2017 (5).txt
1 "Notes" "State" "State Code" "Year" "Year Code" "Gender" "Gender Code" "Five-Year Age Groups" "Five-Year
2 "California" "06" "2017" "2017" "Female" "F" "< 1 year" "1" 863 238625 361.7
3 "California" "06" "2017" "2017" "Female" "F" "1-4 years" "1-4" 130 968178 13.4
4 "California" "06" "2017" "2017" "Female" "F" "5-9 years" "5-9" 107 1229425 8.7
5 "California" "06" "2017" "2017" "Female" "F" "10-14 years" "10-14" 123 1245910 9.9
6 "California" "06" "2017" "2017" "Female" "F" "15-19 years" "15-19" 267 1254099 21.3
7 "California" "06" "2017" "2017" "Female" "F" "20-24 years" "20-24" 497 1338452 37.1
8 "California" "06" "2017" "2017" "Female" "F" "25-29 years" "25-29" 606 1513117 40.0
```

Buttons: Cancel, < Back, Next >, Finish

c.10) On step 2, indicate that columns are delimited by tabs. Then click on “Finish.” You do not have to go to step 3.



c.11) Your data will appear in an Excel spreadsheet. For this assignment, you will use data from columns “Deaths” and “Population” (not from “crude rate”).

You will notice that the “Population” column does not have information for the 85–89, 90–94, 95–99, and 100+ age groups (it ends on 80–84, which is actually 80+ for population counts). Thus, in the “Deaths” column, you should add rows for the 80–84, 85–89, 90–94, 95–99, and 100+ age groups. This information will become the 80+ age group (the final age group in your life table).

Organize death and population counts in a table by five-year age groups (ending on 80+ age group), state, and sex, such as illustrated below. Generate age pyramids for the 2017 population for each state. Interpret the results.

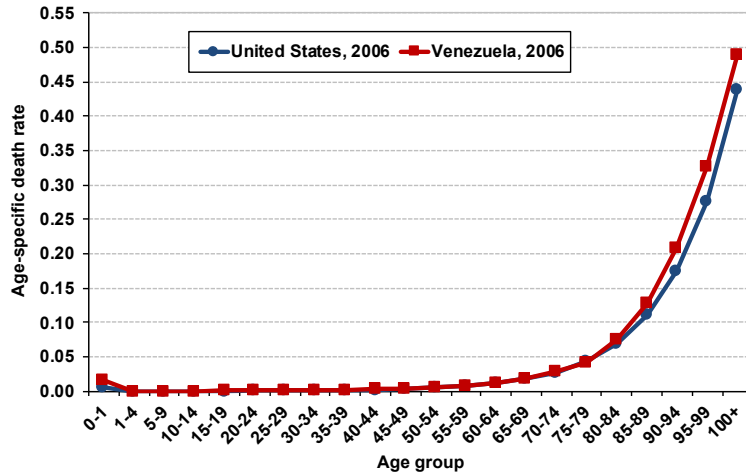
**Table 1. Total deaths and population by age group and sex for State 1 and State 2, 2017**

Age group	Width	State 1				State 2			
		Females		Males		Females		Males	
		Deaths	Population	Deaths	Population	Deaths	Population	Deaths	Population
0	1								
1-4	4								
5-9	5								
10-14	5								
15-19	5								
20-24	5								
25-29	5								
30-34	5								
35-39	5								
40-44	5								
45-49	5								
50-54	5								
55-59	5								
60-64	5								
65-69	5								
70-74	5								
75-79	5								
80+	∞								

Source: CDC WONDER data website (<https://wonder.cdc.gov/>), provided by the Centers for Disease Control and Prevention.

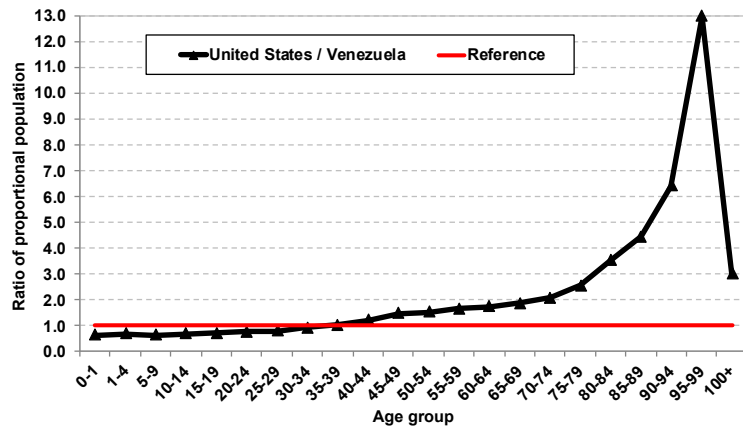
7.2. Calculate crude death rates for each state using data organized on question 7.1 (both sexes combined and up to 80+ age group). Provide a graph with age-specific death rates (such as Figure 1) and a graph with ratio of proportion population between the two states (such as Figure 2) for the selected states. Figures 1 and 2 were used as examples during lectures. Taking the population counts of one state as a standard, calculate an age-standardized death rate for the other state. Interpret the results.

**Figure 1. Age-specific death rates for the United States and Venezuela, 2006**



Source: Poston and Bouvier (2017).

**Figure 2. Ratio of proportional population of the United States to Venezuela, 2006**



Source: Poston and Bouvier (2017).

7.3. Calculate all the columns of a period life table by sex for the two states for the data organized on question 7.1 (up to 80+ age group). Use the formula specifications provided by the course textbook (Wachter, 2014). Interpret the results for each sex and state. Generate age pyramids for the stationary population based on the life table calculations for each state. Interpret these age pyramids, comparing to the age pyramids with observed population counts from question 7.1.