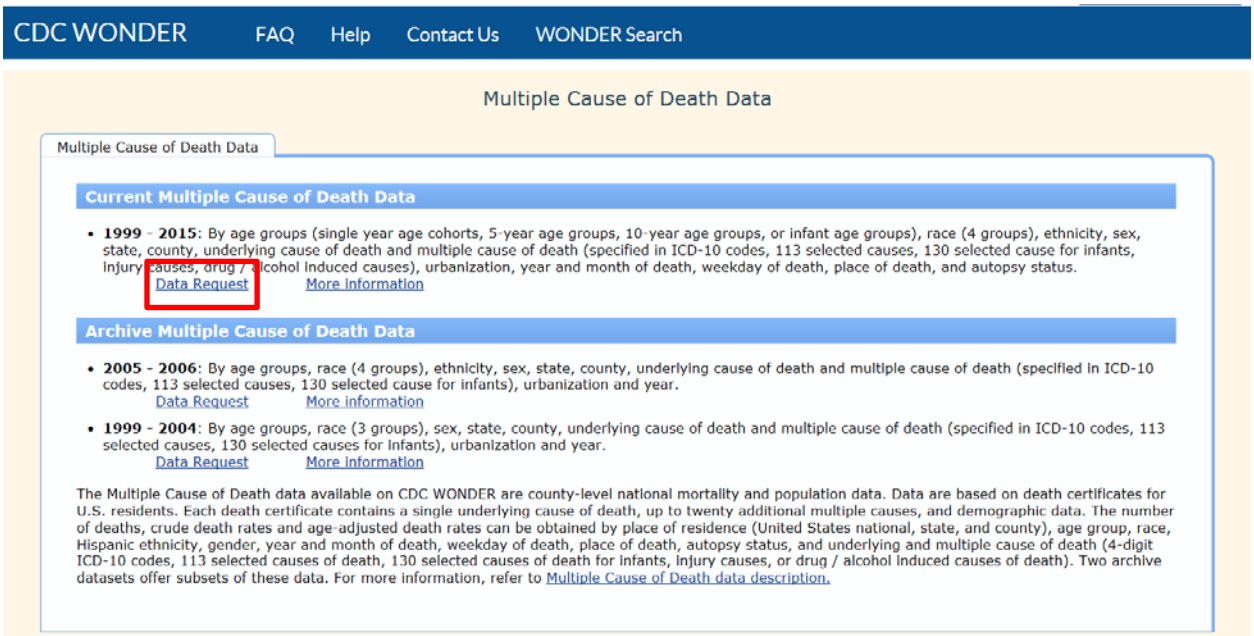
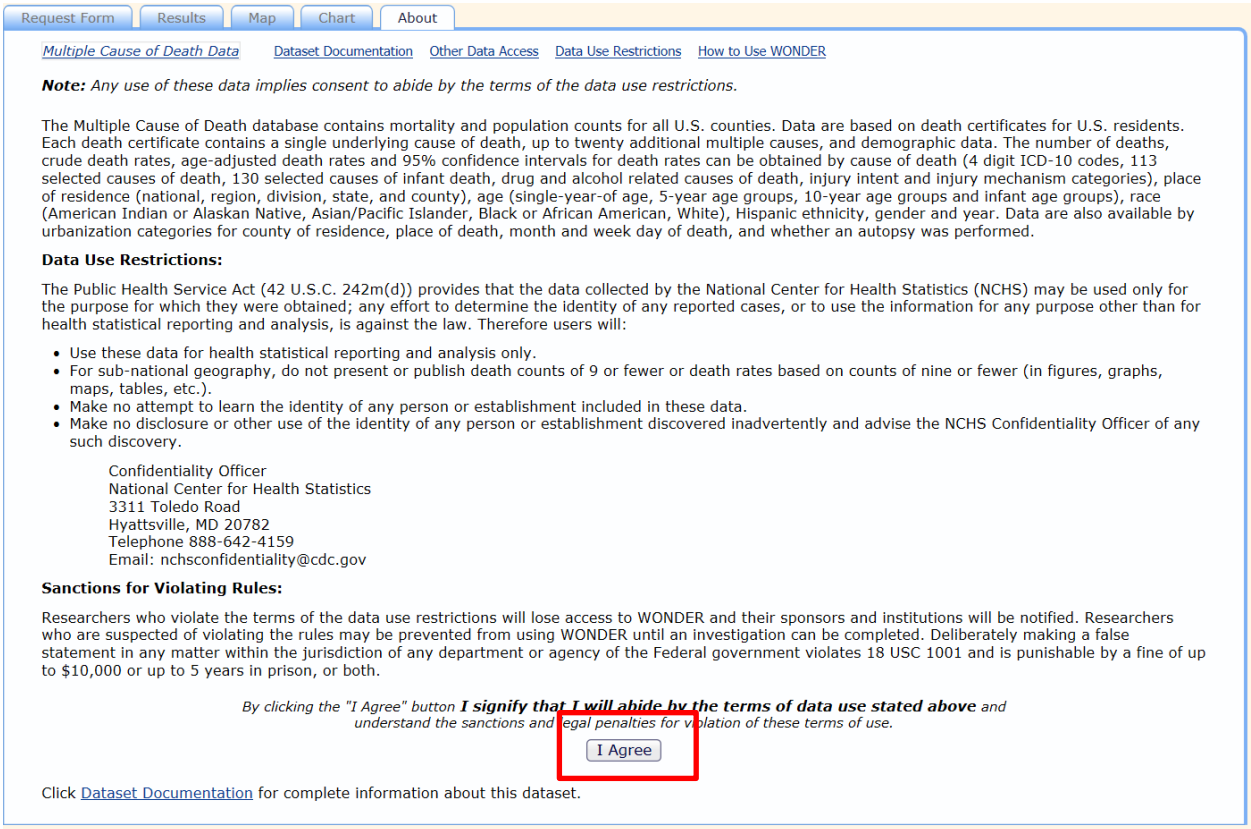
Prescription Opioid related mortality rates and how to obtain them

1. Go to the CDC Wonder website using this link: https://wonder.cdc.gov/
2. Under "WONDER Systems" tab, click on "Multiple cause of death (Detailed Mortality)". See picture below.

3. Under "Current Multiple Cause of Death Data" select "Data Request". See picture below.



4. Read through the data use restrictions, and select "I agree" at the bottom of the page.



Request Form | Results | Map | Chart | About

Multiple Cause of Death Data Dataset Documentation Other Data Access Data Use Restrictions How to Use WONDER

Note: *Any use of these data implies consent to abide by the terms of the data use restrictions.*

The Multiple Cause of Death database contains mortality and population counts for all U.S. counties. Data are based on death certificates for U.S. residents. Each death certificate contains a single underlying cause of death, up to twenty additional multiple causes, and demographic data. The number of deaths, crude death rates, age-adjusted death rates and 95% confidence intervals for death rates can be obtained by cause of death (4 digit ICD-10 codes, 113 selected causes of death, 130 selected causes of infant death, drug and alcohol related causes of death, injury intent and injury mechanism categories), place of residence (national, region, division, state, and county), age (single-year-of age, 5-year age groups, 10-year age groups and infant age groups), race (American Indian or Alaskan Native, Asian/Pacific Islander, Black or African American, White), Hispanic ethnicity, gender and year. Data are also available by urbanization categories for county of residence, place of death, month and week day of death, and whether an autopsy was performed.

Data Use Restrictions:

The Public Health Service Act (42 U.S.C. 242m(d)) provides that the data collected by the National Center for Health Statistics (NCHS) may be used only for the purpose for which they were obtained; any effort to determine the identity of any reported cases, or to use the information for any purpose other than for health statistical reporting and analysis, is against the law. Therefore users will:

- Use these data for health statistical reporting and analysis only.
- For sub-national geography, do not present or publish death counts of 9 or fewer or death rates based on counts of nine or fewer (in figures, graphs, maps, tables, etc.).
- Make no attempt to learn the identity of any person or establishment included in these data.
- Make no disclosure or other use of the identity of any person or establishment discovered inadvertently and advise the NCHS Confidentiality Officer of any such discovery.

Confidentiality Officer
National Center for Health Statistics
3311 Toledo Road
Hyattsville, MD 20782
Telephone 888-642-4159
Email: nchsconfidentiality@cdc.gov

Sanctions for Violating Rules:

Researchers who violate the terms of the data use restrictions will lose access to WONDER and their sponsors and institutions will be notified. Researchers who are suspected of violating the rules may be prevented from using WONDER until an investigation can be completed. Deliberately making a false statement in any matter within the jurisdiction of any department or agency of the Federal government violates 18 USC 1001 and is punishable by a fine of up to $10,000 or up to 5 years in prison, or both.

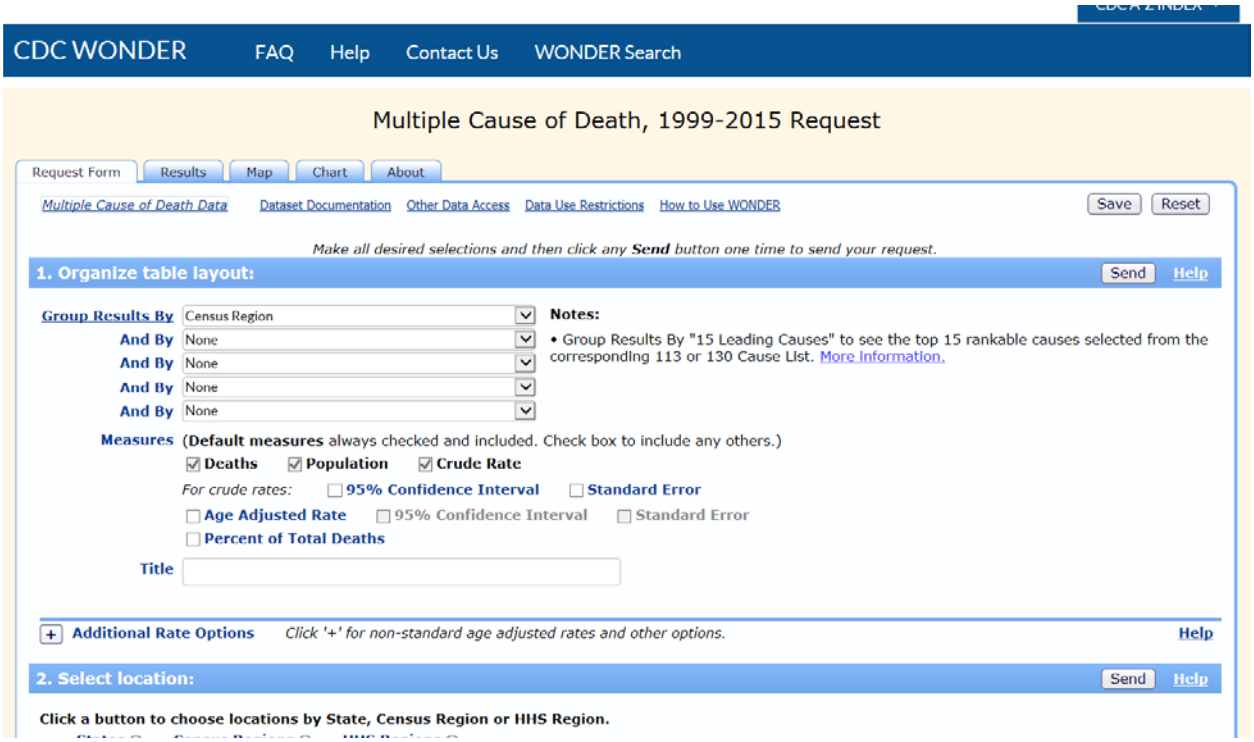
By clicking the "I Agree" button ***I signify that I will abide by the terms of data use stated above*** *and understand the sanctions and legal penalties for violation of these terms of use.*

I Agree

Click Dataset Documentation for complete information about this dataset.

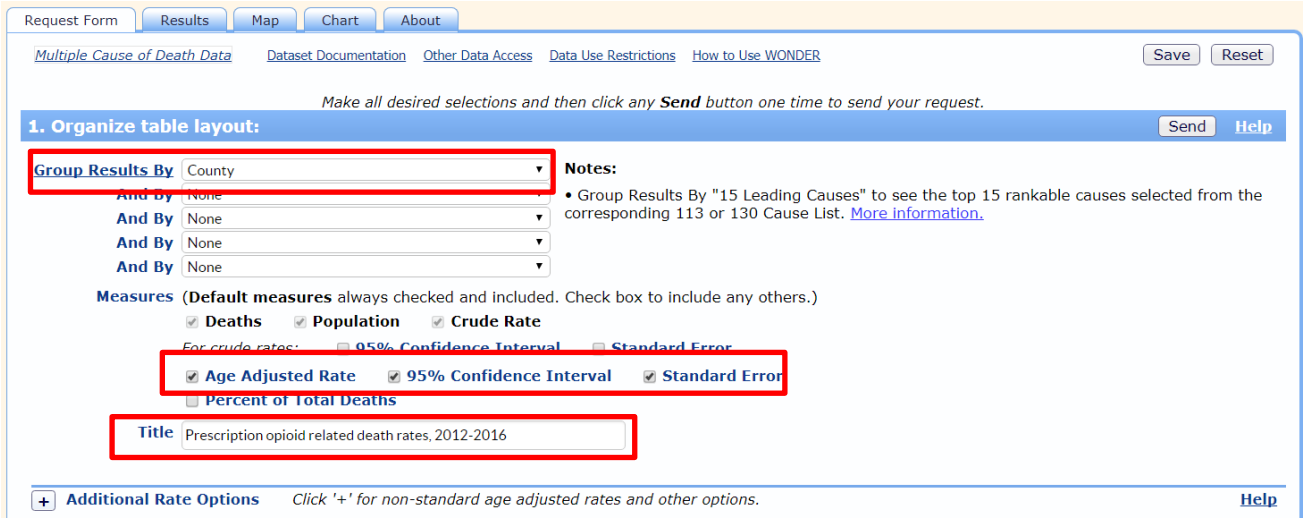
5. This will open up the query request form. Let's use an example to fully understand how to use this system. Example: **How many prescription opioid related deaths occurred in Oklahoma County in the past 5 years for all ages?** Keep in mind that usually it is best to use the fewest amount of years possible, however due to the suppression rules within the CDC Wonder database, sometimes we must combine a few years together to get a count and rate of death. Additionally, you are also able to ask the system to specify these death rates to a certain age group. Again, while this is ideal for most purposes, sometimes the count and rate of death is suppressed due to low numbers. Furthermore, IF you choose to use a specific age range, it is NOT possible to acquire an age-adjusted death rate. Therefore, you will only get a crude death rate if you use a specific age range. These are all things to consider as you go forward trying to find the best data to use. At times, you will need to try different versions/select different

ages/years etc. to acquire the best data points to use to prove your point. See picture below.

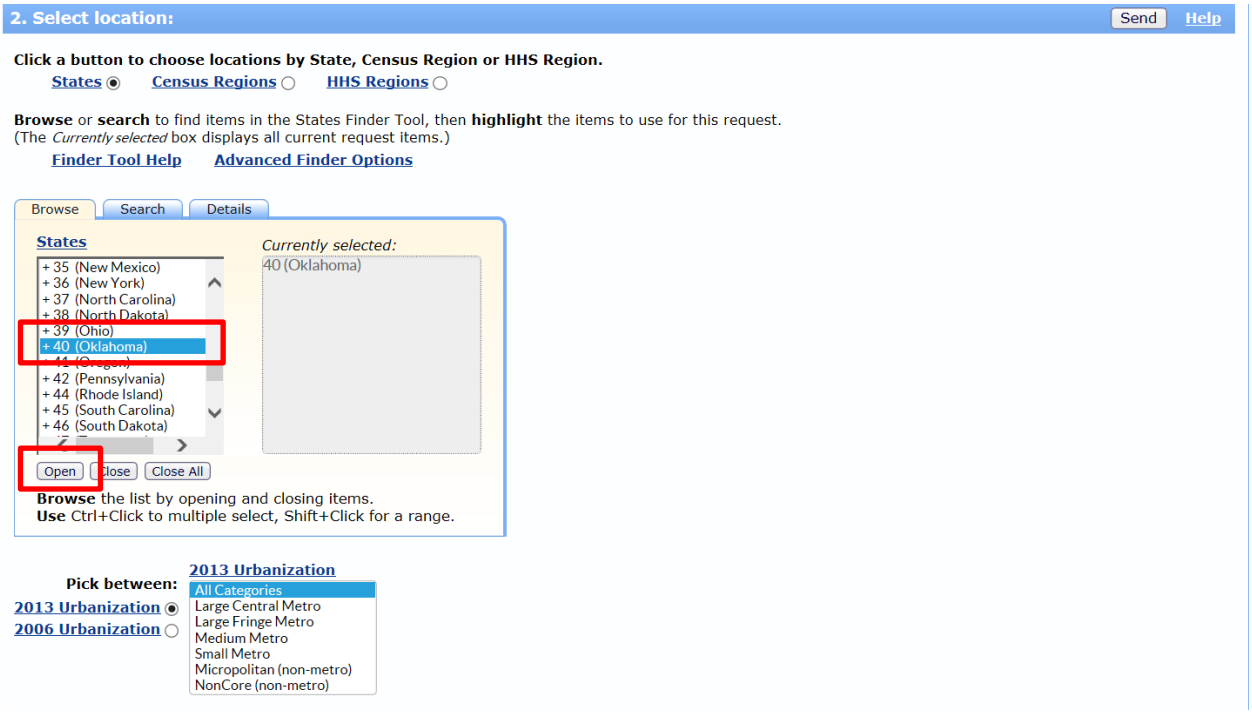


6. Let's start with the example situation above. Under the "Request Form" tab, look under "1. Organize table layout:" and you can select how you want to categorize your data needs. In this example, we are categorizing by county (Oklahoma). Thus click on the drop down arrow next to the "Group Results by" field and populate the contents with "County" (see below). Furthermore, since we are looking at all ages check the boxes for "age adjusted rate" and the corresponding "95% Confidence Interval" and "standard error" next to "age adjusted rate". Finally, in the text

box labeled “title” insert the preferred title for the table.

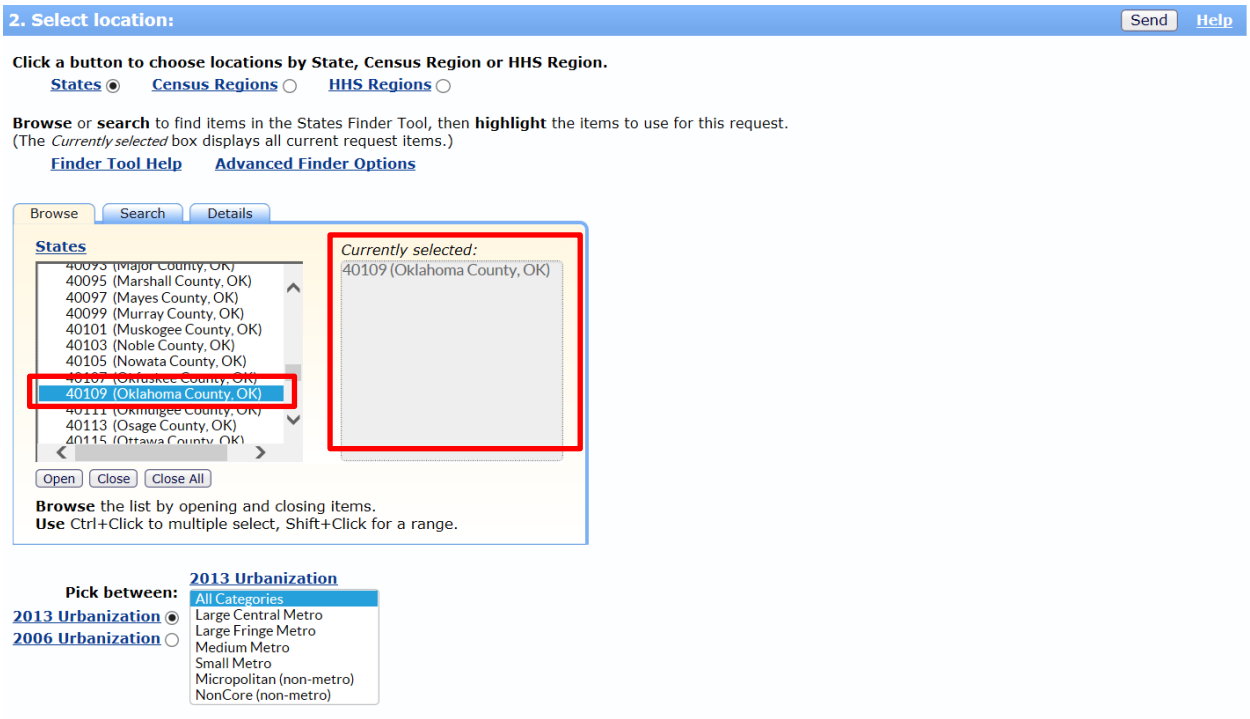


7. Next, under “2. Select location:” scroll down to “Oklahoma” under “States” and select it. Then press “Open” under the box. See picture below.

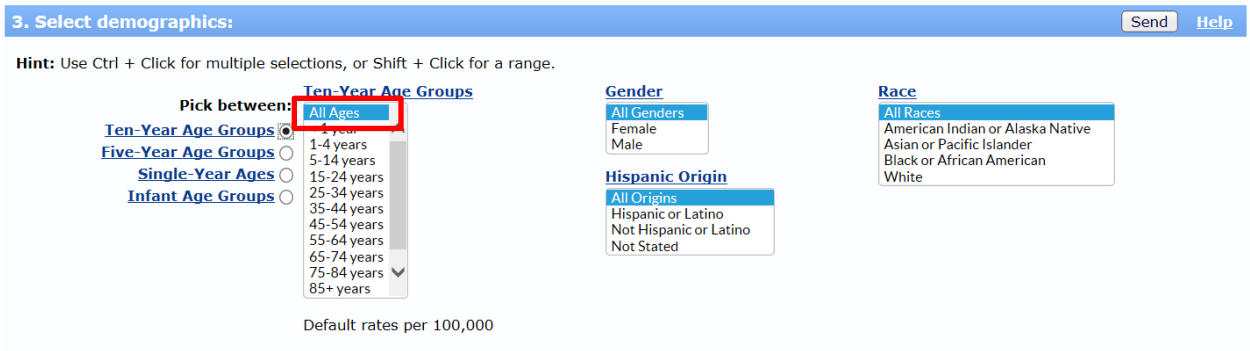


8. Once you select “open”, the screen will show you every county within the state of Oklahoma. Here again, scroll down to “Oklahoma County, OK” and select it by clicking on it. See picture below. Note that the system shows you what you have selected on the right hand side gray box

labeled "Currently selected:".



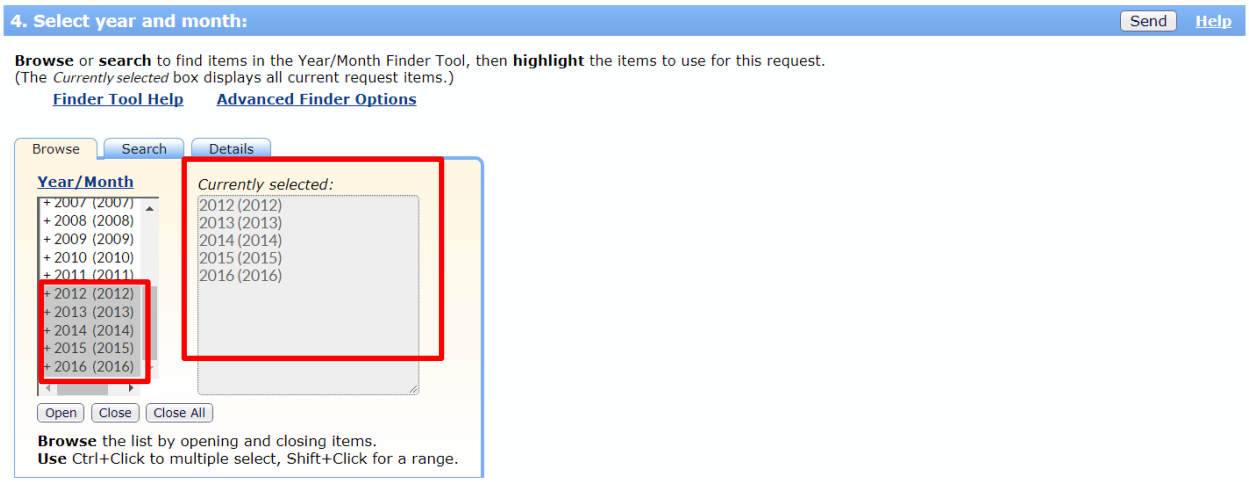
9. Next, scroll down to "3. Select demographics:". In this section, there are choices for age, gender, race, and Hispanic origin. Since the example is for all ages, leave the default setting of "All ages" under the age category. See picture below.



   a. *Notice the age range can be changed between 10 year, 5 year, single year, and infant age groups. I.e. if you were trying to select 12-25 age group, you would select the bubble next to "Single year ages" and then select 12-25 by holding down the "CTRL" key on your key board and clicking on all the ages between AND including 12 through 25.*

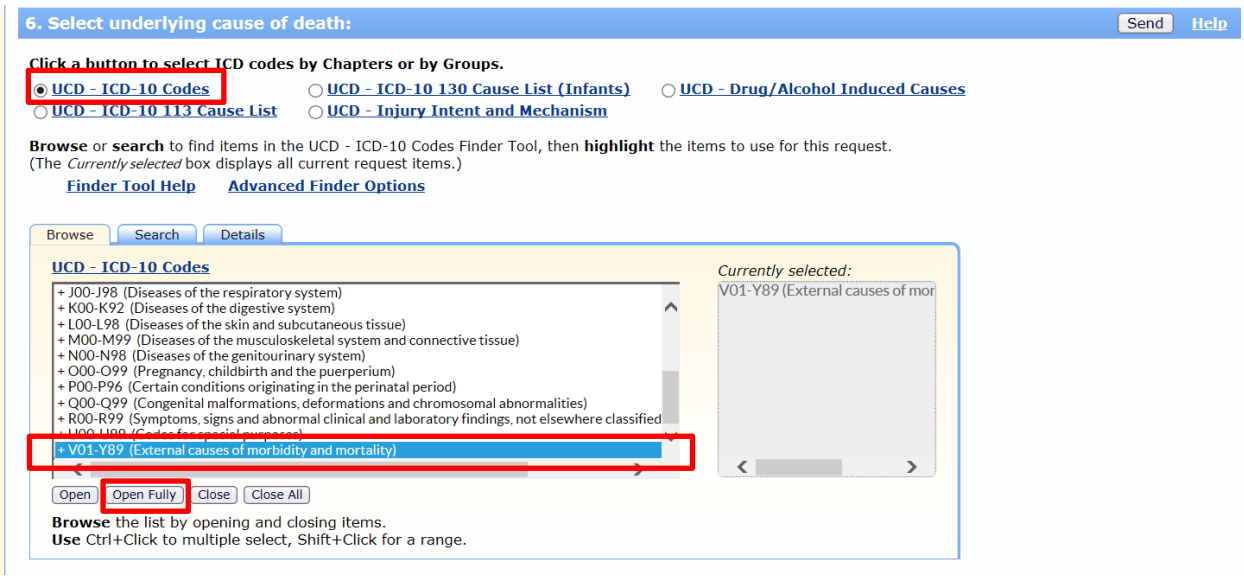
10. Scroll down to "4. Select year and month:" and choose the years desired. In the example, we specified "past 5 years". This translates to 2011-2015. Multiple years can be chosen by holding

down the “CTRL” key on the key board while clicking on the years desired with the mouse. Notice again that the system shows what has been chosen under the “Currently selected:” gray box on the right hand side. See picture below.

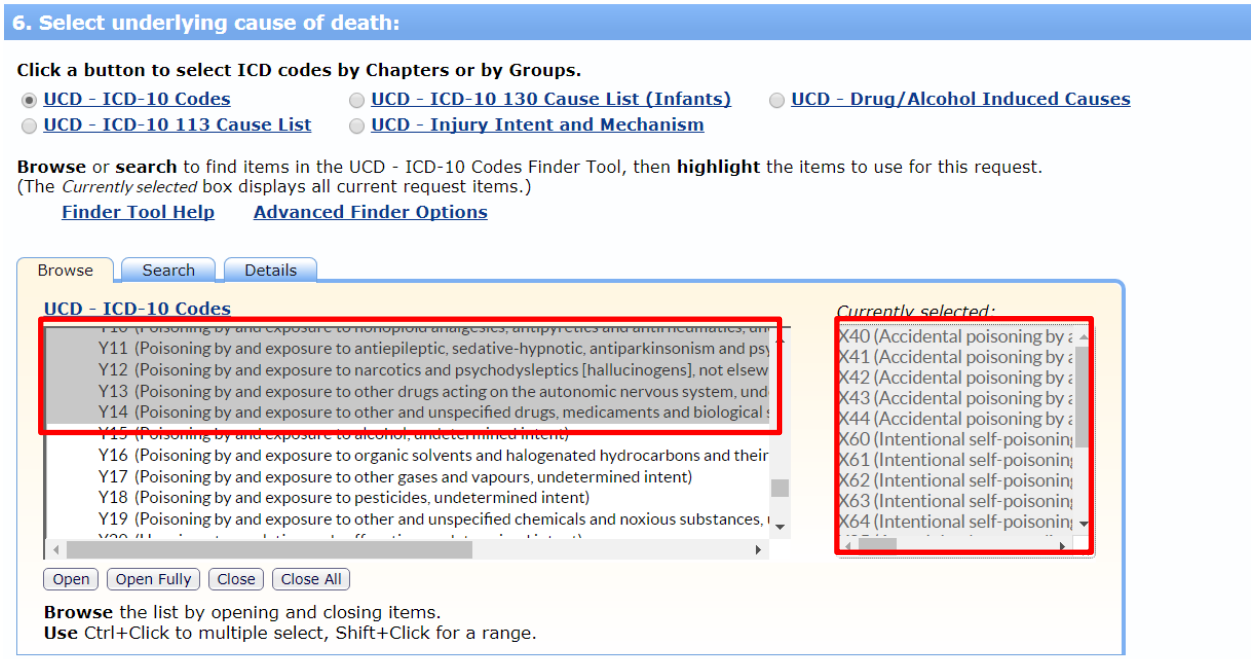


11. Scroll down past “5. Select weekday, autopsy and place of death:” to “6. Select underlying cause of death:”. For the purposes of this exercise, the default settings under section 5 are sufficient.
12. Under “6. Select underlying cause of death:” it is necessary to input ICD 10 codes into the system. The ICD 10 codes for underlying cause of death pertaining to prescription opioid poisoning are as follows: X40, X41, X42, X43, X44, X60, X61, X62, X63, X64, X85, Y10, Y11, Y12, Y13, Y14. In other words, it is necessary to select all of these codes in this section. Again, use the “CTRL” key on the keyboard while clicking on the codes to accomplish this goal.
13. First, make sure that the bubble next to “UCD – ICD-10 Codes” is filled. Then under the “Browse” tab, select “ V01-Y89 (External causes of morbidity and mortality)” [this is the last option] and

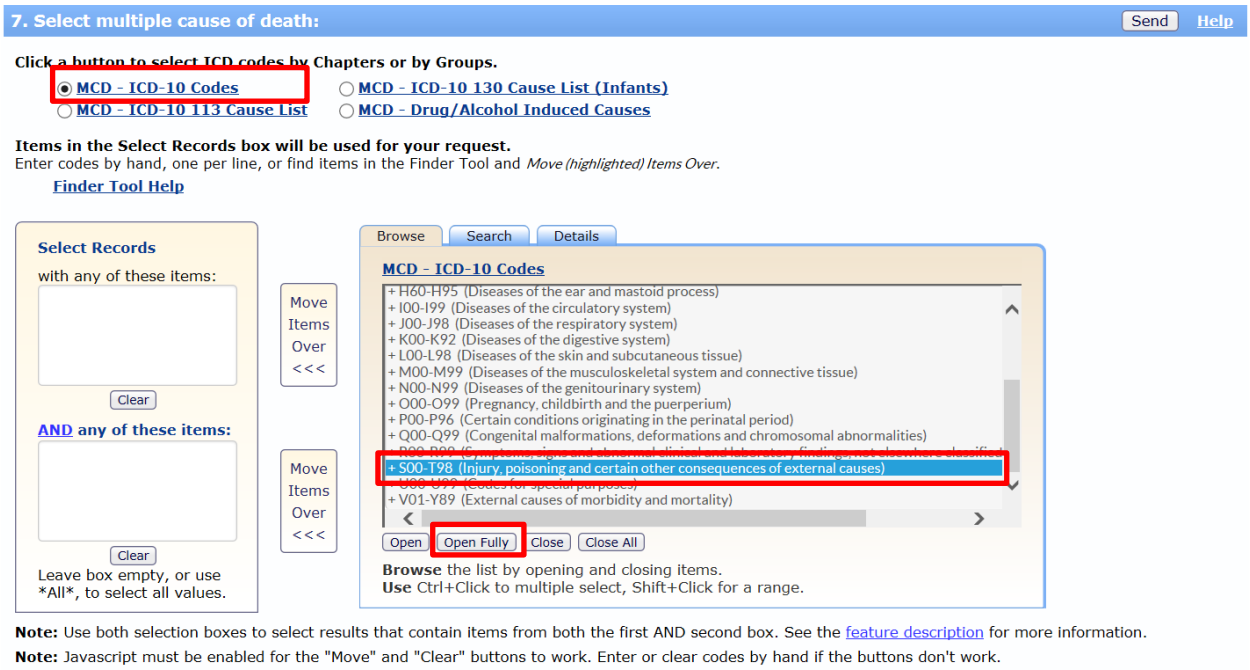
click on “Open Fully” underneath the dialog box. See picture below.



14. After clicking on “Open Fully” all the ICD 10 codes in this category will open. This is categorized in alphabetical AND numerical order. This step requires a little patience. Scroll until the desired ICD 10 codes are found, and then select all the ICD 10 codes mentioned in Step 12 (X40, X41, X42, X43, X44, X60, X61, X62, X63, X64, X85, Y10, Y11, Y12, Y13, Y14). Notice again you can check to ensure all the necessary ICD 10 codes have been selected by scrolling in the “Currently selected:” gray box on the right hand side. See picture below.

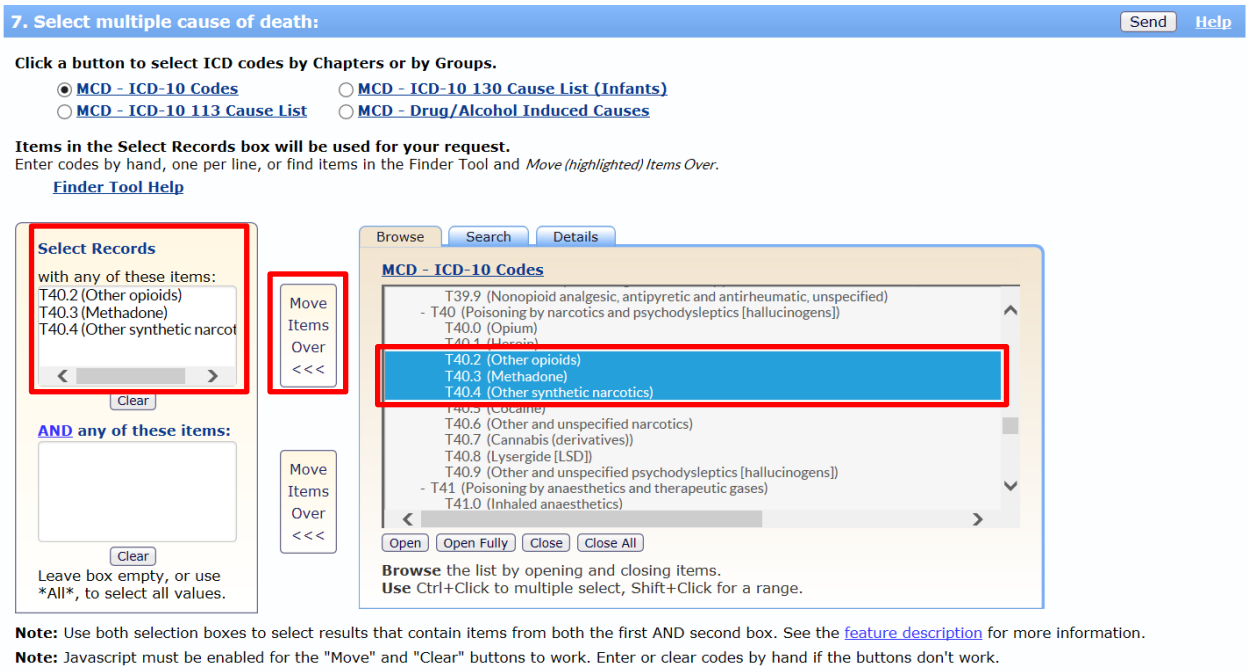


15. Scroll down to “7. Select multiple cause of death:” and again check to ensure that the bubble next to “MCD – ICD-10 Codes” is filled. In this section, the multiple cause(s) of death ICD 10 codes are the following: T40.2, T40.3, T40.4. Again, under the “Browse” tab, scroll down to the bottom of the box and select “S00-T98 (Injury, poisoning and certain other consequences of external causes)”. Then click on “Open Fully” underneath the box. See picture below.

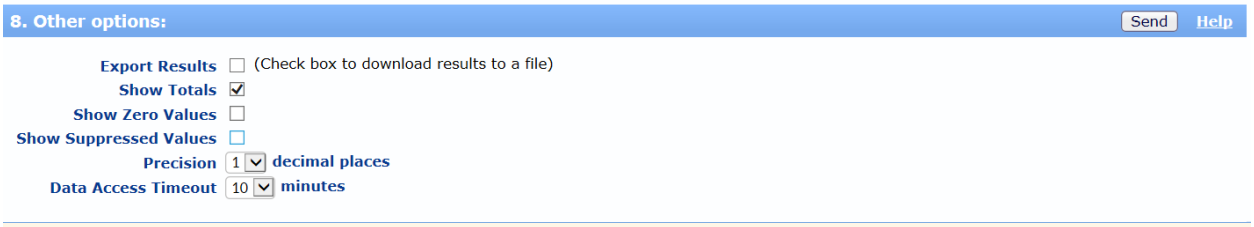


16. After clicking on “Open Fully”, the multiple causes of death will pop up. At this point, scroll to T40 and select the following ICD 10 codes (T40.2, T40.3, T40.4). This is in alphabetical AND numerical order. To select all the codes hold down the “CTRL” key on the keyboard while clicking on the appropriate ICD 10 codes. Once selected, click on the “Move items over <<<” icon placed directly to the left of the “Browse” tab. This will populate the box on the left that reads

"Select Records with any of these items:". See picture below.



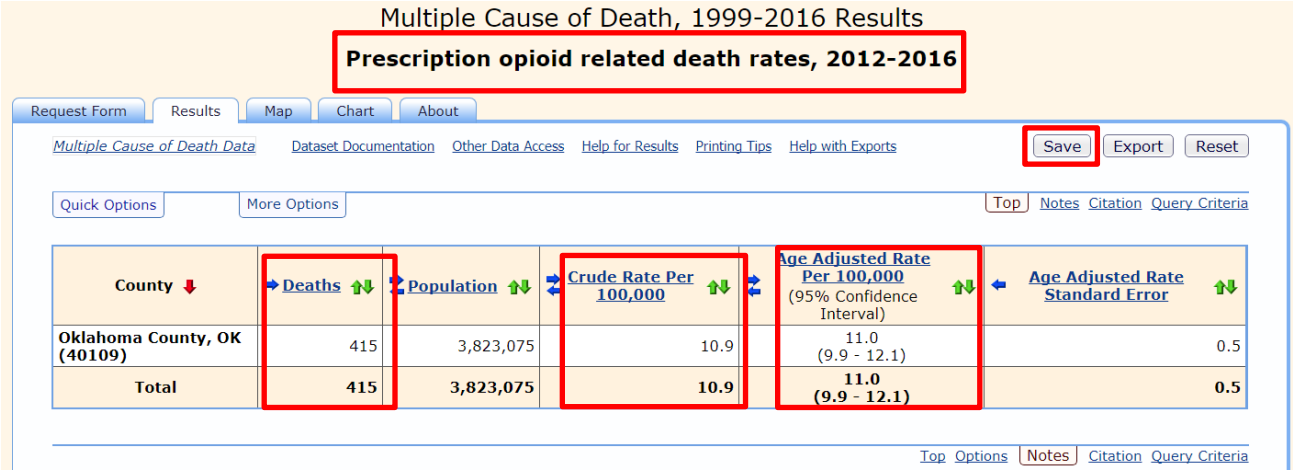
17. In "8. Other options:" the decimal points, totals etc. can be altered. The default settings for this section should be sufficient. See picture below.



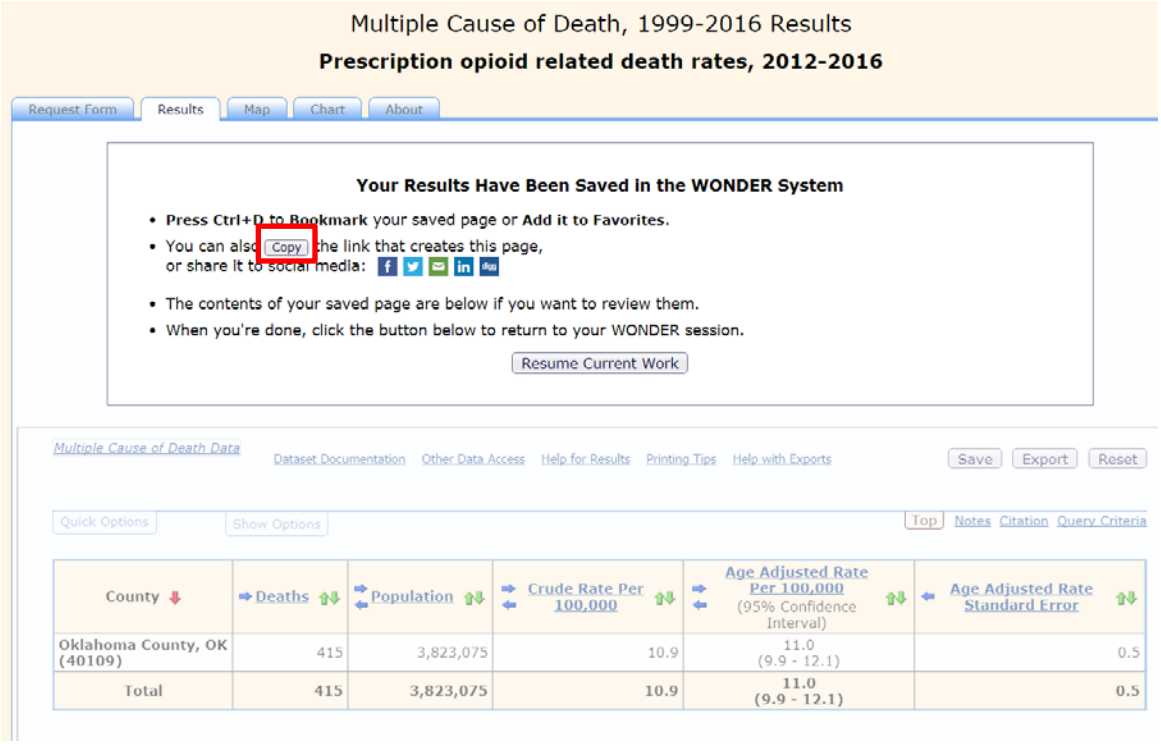
18. Scroll to the bottom of the page and select "Send".

19. The "Send" request will generate a table with the data requests you entered. It will show "Deaths" in a column, which is the number of deaths in that county during that time period. There will also be a "crude rate per 100,000" and an "age adjusted per 100,000 (95% Confidence Interval)" shown. Additionally, the "title" for the table will be present at the top of the table. See

picture below.



a. You can choose to save your work by clicking on "Save" (see above). After this you can bookmark the page, take a screenshot of the table and save it, or copy the link that created the page and send it to yourself or someone else. See picture below.



20. The "Notes" section underneath the table will provide any caveats about the data set. There is also a "Suggested Citation:" that is very useful because it can be copied and pasted into another document if you are using the CDC Wonder database and need to cite the source. See picture

below.

Notes:

Caveats:

As of April 3, 2017, the underlying cause of death has been revised for 125 deaths in 2014. More information.

The populations used to calculate standard age-adjusted rates are documented here: More information.

The method used to calculate age-adjusted rates is documented here: More information.

Deaths for persons of unknown age are included in counts and crude rates, but are not included in age-adjusted rates.

The method used to calculate 95% confidence intervals is documented here: More information.

The method used to calculate standard errors is documented here: More information.

The population figures for year 2016 are bridged-race estimates of the July 1 resident population, from the Vintage 2016 postcensal series released by NCHS on June 26, 2017. The population figures for year 2015 are bridged-race estimates of the July 1 resident population, from the Vintage 2015 postcensal series released by NCHS on June 28, 2016. The population figures for year 2014 are bridged-race estimates of the July 1 resident population, from the Vintage 2014 postcensal series released by NCHS on June 30, 2015. The population figures for year 2013 are bridged-race estimates of the July 1 resident population, from the Vintage 2013 postcensal series released by NCHS on June 26, 2014. The population figures for year 2012 are bridged-race estimates of the July 1 resident population, from the Vintage 2012 postcensal series released by NCHS on June 13, 2013. Population figures for 2011 are bridged-race estimates of the July 1 resident population, from the county-level postcensal Vintage 2011 series released by NCHS on July 18, 2012. Population figures for 2010 are April 1 Census counts. The population figures for years 2001 - 2009, are bridged-race estimates of the July 1 resident population, from the revised intercensal county-level 2000 - 2009 series released by NCHS on October 26, 2012. Population figures for 2000 are April 1 Census counts. Population figures for 1999 are from the 1990-1999 intercensal series of July 1 estimates. Population figures for Infant Age Groups are the number of live births.
Note: Rates and population figures for years 2001 - 2009 differ slightly from previously published reports, due to use of the population estimates which were available at the time of release.

The population figures used in the calculation of death rates for the age group 'under 1 year' are the estimates of the resident population that is under one year of age. More information.

Changes to cause of death classification affect reporting trends. More information.

Help: See Multiple Cause of Death, 1999-2016 Documentation for more information.

Query Date: Jan 23, 2018 4:06:16 PM

Top Options Notes Citation Query Criteria

Suggested Citation:

Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/mcd-icd10.html on Jan 23, 2018 4:06:16 PM

21. The “Query Criteria” located underneath the suggested citation is very useful because it shows all the details of the table created. If there are any concerns about whether the right things were selected for the table, simply check the “Query Criteria”. This shows all the categories

available and what was selected for each. See picture below.

Query Criteria:

Title:	Prescription opioid related death rates, 2012-2016
2013 Urbanization:	All
Autopsy:	All
Gender:	All
Hispanic Origin:	All
MCD - ICD-10 Codes:	T40.2 (Other opioids), T40.3 (Methadone), T40.4 (Other synthetic narcotics)
Place of Death:	All
Race:	All
States:	Oklahoma County, OK (40109)
Ten-Year Age Groups:	All
UCD - ICD-10 Codes:	X40 (Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics), X41 (Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified), X42 (Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified), X43 (Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system), X44 (Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances), X60 (Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics), X61 (Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified), X62 (Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified), X63 (Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system), X64 (Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances), X85 (Assault by drugs, medicaments and biological substances), Y10 (Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent), Y11 (Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent), Y12 (Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent), Y13 (Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent), Y14 (Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent)
Weekday:	All
Year/Month:	2012, 2013, 2014, 2015, 2016
Group By:	County
Show Totals:	True
Show Zero Values:	False
Show Suppressed:	False
Standard Population:	2000 U.S. Std. Population
Calculate Rates Per:	100,000
Rate Options:	Default intercensal populations for years 2001-2009 (except Infant Age Groups)

22. Congratulations! You have successfully used the CDC Wonder database to obtain pertinent data for your county/state about prescription opioid related mortality rates!