- 1. Go to the CDC Wonder website using this link: <u>https://wonder.cdc.gov/</u>
- 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.



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.

CDC WONDER	FAQ Help Contact Us WONDER Search						
	Multiple Cause of Death, 1999-2015 Request						
Request Form Re	Its Map Chart About						
Multiple Cause of Dea	Data Dataset Documentation Other Data Access Data Use Restrictions How to Use WONDER Save Reset						
	Make all desired selections and then click any Send button one time to send your request.						
1. Organize tabl	layout: Send Help						
Group Results By And By And By And By Measures Title	Census Region Notes: None • Group Results By "15 Leading Causes" to see the top 15 rankable causes selected from the corresponding 113 or 130 Cause List. More Information. None • None • Default measures always checked and included. Check box to include any others.) • Ø Deaths Ø Population Ø Crude Rate for crude rates: 95% Confidence Interval Standard Error Age Adjusted Rate 95% Confidence Interval Standard Error Percent of Total Deaths • •						
+ Additional Rat	Options Click '+' for non-standard age adjusted rates and other options. Help						
2. Select locatio	: Send Help						
Click a button to c	oose locations by State, Census Region or IIIIS Region.						

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

Request Form Results Map Chart About Multiple Cause of Death Data Save Reset Dataset Documentation Other Data Access Data Use Restrictions How to Use WONDER Make all desired selections and then click any Send button one time to send your request **1.** Organize table layout: Send Help Group Results By County • Notes: Group Results By "15 Leading Causes" to see the top 15 rankable causes selected from the corresponding 113 or 130 Cause List. More information. And By None • And By None And By None Measures (Default measures always checked and included. Check box to include any others.) Deaths Population Crude Rate Age Adjusted Rate 95% Confidence Interval ✓ Standard Error Percent of Lotal Deaths Title Prescription opioid related death rates, 2012-2016 + Additional Rate Options Click '+' for non-standard age adjusted rates and other options. <u>Help</u>

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.

2. Select location:	Send	Help
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 Currently selected: + 35 (New Mexico) + 36 (New York) + 36 (New Tork) + 40 (Oklahoma) + 37 (North Carolina) + 40 (Oklahoma) + 42 (Pennsylvania) + 44 (Rhode Island) + 44 (Rhode Island) + 45 (South Carolina) + 45 (South Carolina) + 46 (South Dakota) • 40 (Oklahoma) • 47 (South Carolina) • 45 (South Dakota) • 6 • 70 (Deen il Jose Close All) • 70 (South Dakota) • 80 (South Dakota) • 70 (South Dakota) • 45 (South Carolina) • 80 (South Dakota) • 40 (South Dakota) • 70 (South Dakota) • 40 (South Dakota) • 70 (South Dakota) • 40 (South Dakota) • 70 (South Dakota) • 70 (South Dakota) • 70 (South Dakota) • 40 (South Dakota) • 70 (South Dakota) • 70 (South Dakota) • 70 (South Dakota) • 80 (South Dakota) • 70 (South Dakota) <td< th=""><th></th><th></th></td<>		
Pick between: 2013 Urbanization 2013 Urbanization (2006 Urbanization) All Categories 2006 Urbanization (2006 Urbanization) Large Central Metro Large Fringe Metro Medium Metro Small Metro Micropolitan (non-metro) NonCore (non-metro)		

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:".



 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.

3. Select demographics:				Send	<u>Help</u>
3. Select demographics: Hint: Use Ctrl + Click for multiple sele Pick between: <u>Ten-Year Age Groups</u> <u>Five-Year Age Groups</u> <u>Single-Year Ages</u>	ctions, or Shift + Click for a range. Ten-Year Age Groups All Ages 1-4 years 5-14 years 5-24 years 25-34 years 35-44 years 55-64 years 55-64 years 55-64 years 75-84 years 75-84 years	Gender All Genders Female Male Hispanic Origin 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	Send	нер
	Default rates per 100,000				

- 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.

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							
Browse Search	Details						
Year/Month + 2007 (2007) + 2008 (2008) + 2009 (2009) + 2010 (2010) + 2011 (2011) + 2012 (2012) + 2013 (2013) + 2014 (2014) + 2015 (2015) + 2016 (2016)	Currently selected: 2012 (2012) 2013 (2013) 2014 (2014) 2015 (2015) 2016 (2016)						
Open Close Close							
Browse the list by o Use Ctrl+Click to m	pening and closing items. ultiple select, Shift+Click for a range.						

- 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. 6. Select underlying cause of death: Click a button to select ICD codes by Chapters or by Groups. UCD - ICD-10 Codes O UCD - ICD-10 130 Cause List (Infants) O UCD - Drug/Alcohol Induced Causes) <u>UCD - ICD-10 113 Cause List</u> O UCD - Injury Intent and Mechanism Browse or search to find items in the UCD - 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 Browse Search Details UCD - ICD-10 Codes Currently selected. + J00-J98 (Diseases of the respiratory system) + K00-K92 (Diseases of the digestive system) + L00-L98 (Diseases of the skin and subcutaneous tissue) V01-Y89 (External causes of mor M00-M99 (Diseases of the musculoskeletal system and connective tissue) NO0-N96 (Diseases of the genitourinary system)
NO0-N96 (Diseases of the genitourinary system)
OO0-O99 (Pregnancy, childbirth and the puerperium)
PO0-P96 (Certain conditions originating in the perinatal period) O00-O99 (Congenital malformations, deformations and chromosomal abnormalities) + R00-R99 (Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified Open Open Fully Close Close All Browse the list by opening and closing items. Use Ctrl+Click to multiple select, Shift+Click for a range

Send Help

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.

CK a billion to select it that	ades by Chapters or by Groups.		
MCD - ICD-10 Codes	○ MCD - ICD-10 130 Cause List (Infants)		
O MCD - ICD-10 113 Car	<pre>ise List</pre>		
ems in the Select Records h	ox will be used for your request		
ter codes by hand, one per line	e, or find items in the Finder Tool and <i>Move (highlighted) Items Over</i> .		
Finder Tool Help			
	Browse Search Details		
Select Records			
with any of these items:	MCD - ICD-10 Codes		
	+ H60-H95 (Diseases of the car and mastoid process) + I00-199 (Diseases of the circulatory system)		
	Items + J00-J98 (Diseases of the respiratory system)		
	Over + K00-K92 (Diseases of the digestive system)		
	+ L00-L98 (Diseases of the skin and subcutaneous tissue)		
	+ N00-N99 (Diseases of the genitourinary system)		
Clear	+ O00-O99 (Pregnancy, childbirth and the puerperium)		
AND any of these items:	+ P00-P96 (Certain conditions originating in the perinatal period)		
	+ Q00-Q77 (Congenical mations, deformations and chromosomal abnormalities)	-	
	Move + S00-T98 (Injury, poisoning and certain other consequences of external causes)		
	Items	_	
	Over		
Clear			
	Browse the list by opening and closing items		
Leave box empty, or use	broube the loc by opening the locality terror		

Note: Use both selection boxes to select results that contain items from both the first AND second box. See the <u>feature description</u> for more information. Note: Javascript must be enabled for the "Move" and "Clear" buttons to work. Enter or clear codes by hand if the buttons don't work.

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</p>

7. Select multiple cause of death: Send Help Click a button to select ICD codes by Chapters or by Groups. MCD - ICD-10 Codes O MCD - ICD-10 130 Cause List (Infants) O MCD - Drug/Alcohol Induced Causes O MCD - ICD-10 113 Cause List Items in the Select Records box will be used for your request. Enter codes by hand, one per line, or find items in the Finder Tool and Move (highlighted) Items Over. Finder Tool Help Browse Search Details Select Records MCD - ICD-10 Codes with any of these items: T40.2 (Other opioids) T39.9 (Nonopioid analgesic, antipyretic and antirheumatic, unspecified) Move T40 (Poisoning by narcotics and psychodysleptics [hallucinogens]) ~ T40.3 (Methadone) T40.4 (Other synthetic narcot Items T40.0 (Opium) Over <<< > < Clear T40.6 (Other and unspecified narcotics) AND any of these items: T40.7 (Cannabis (derivatives)) T40.8 (Lysergide [LSD])
T40.9 (Other and unspecified psychodysleptics [hallucinogens]) Move T41 (Poisoning by anaesthetics and therapeutic gases) Items T41.0 (Inhaled anaesthetics) Over < <<< Open Open Fully Close Close All Clear Browse the list by opening and closing items Leave box empty, or use Use Ctrl+Click to multiple select, Shift+Click for a range. *All*, to select all values

"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.

	M	Iultiple Cause	of Death, 1999	9-2	016 Results			
	Pres	cription opioi	d related death	ra	tes, 2012-2016			
equest Form Results Map Chart About								
Multiple Cause of Death Data	Dataset Documer	ntation Other Data Acces	s Help for Results Printing	Tips	Help with Exports		Save Export R	eset
Quick Options M	Quick Options Top Notes Citation Query Criteria							
County 🖡	⇒ <u>Deaths</u> ∱₽	Population 🎶 🕇	Crude Rate Per 100,000	\$	Age Adjusted Rate Per 100,000 (95% Confidence Interval)	*	Age Adjusted Rate Standard Error	₩
Oklahoma County, OK (40109)	415	3,823,075	10.9		11.0 (9.9 - 12.1)			0.5
Total	415	3,823,075	10.9		11.0 (9.9 - 12.1)			0.5
Top Options Notes Citation Query Criteria								

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.

		Multiple Cau	se of Death, 199	9-2016 Results	
	Pre	escription opi	ioid related death	rates, 2012-2016	
Request Form Results	Map Chart	About			
		Your Results Ha	ave Been Saved in the	e WONDER System	
Press Cti You can a	ri+D to Bookma	ark your saved page link that creates this	e or Add it to Favorites.		
or share	it to social med	ia: f 🔽 🖬 in 🏘	n n		
The cont	ents of your sav	ved page are below	if you want to review the	m.	
• When yo	u're done, click	the button below to	return to your WONDER	session.	
			Resume Current Work)	
Multiple Cause of Death Dat	a Dataset Docu	mentation Other Data /	Access Help for Results Printin	g Tips Help with Exports	Save Export Reset
Quick Options				l	Top Notes Citation Query Criteria
County 👃	⇒Deaths ∰	Population 🛊			Age Adjusted Rate Standard Error
Oklahoma County, OK (40109)	415	3,823,075	10.9	11.0 (9.9 - 12.1)	0.5
Total	415	3,823,075	10.9	11.0 (9.9 - 12.1)	0.5

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

Prescription Opioid related mortality rates and how to obtain them

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 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 year 2010 are April 1 Census counts. The population figures for years 2001 - 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. <u>More information.</u>
	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 Criter

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

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 antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified), X63 (Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified), X63 (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 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 antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent), Y12 (Poisoning by and exposure to antiepileptic) (Poisoning by and exposure to antipileptic, antiparkinsonism and psychotropic drugs, 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 drugs acting on the autonomic nervous system, undetermined intent), Y14 (Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent), Y14 (Po
Weekday:	All
Year/Month:	2012, 2013, 2014, 2015, 2016
Group By:	County
Show lotals:	Irue
Show Zero Values:	False
Show Suppressed:	
Standard Population:	ZUOU U.S. Std. Population
Calculate Rates Per:	
Rate Options:	Default intercensal populations for years 2001-2009 (except Infant Age Groups)

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

22. Congratulations! You have successfully used the CDC Wonder database to obtain pertinent data

for your county/state about prescription opioid related mortality rates!