

# **PRESCRIPTION DRUG OVERDOSE DATA & STATISTICS GUIDE**

## **CDC WONDER**

<http://wonder.cdc.gov/>

## **MULTIPLE CAUSES OF DEATH (MCOD) DATASET**

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## Introduction to Multiple Causes of Death Dataset on WONDER

Contact Info/Sponsor	Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), 3311 Toledo Rd, Hyattsville, MD 20782 WONDER support: <a href="mailto:cwus@cdc.gov">cwus@cdc.gov</a> . Website: <a href="http://wonder.cdc.gov/">http://wonder.cdc.gov/</a>
Data Type & Purpose	<p>CDC WONDER—Wide-ranging Online Data for Epidemiologic Research—is an integrated, user-friendly, menu-driven data system that provides public-use data sets about mortality (deaths), cancer incidence, HIV and AIDS, tuberculosis, vaccinations, natality (births), census data and many other health outcomes via the online query system. Details about each dataset are available at <a href="http://wonder.cdc.gov/DataSets.html">http://wonder.cdc.gov/DataSets.html</a></p> <p>Multiple Causes of Death (MCO) mortality data are based on death certificates for U.S. residents. Each death certificate contains underlying cause and up to twenty multiple causes of death and demographic data. Specific detail about variables in MCO are available at <a href="http://wonder.cdc.gov/wonder/help/mcd.html#">http://wonder.cdc.gov/wonder/help/mcd.html#</a></p>
Geographic Scope	Data are categorized based on the place of residence of the decedent. Deaths of nonresidents (e.g. nonresident aliens, nationals living abroad, residents of Puerto Rico, Guam, the Virgin Islands, and other territories of the U.S.) and fetal deaths are excluded. On WONDER, data can be queried by national, state, regional, divisional, and county Census categories.
Implementation Status	Ongoing and currently available online
Availability <input checked="" type="checkbox"/> Online Query System <input checked="" type="checkbox"/> Public Use Data Set	MCO data lag two years behind the current year. The queried data can be exported in formats such as plain text (ASCII), web pages (HTML), and spreadsheet files (Tab Separated Values) and for use in applications such as word processors, spreadsheet programs, or statistical and geographic analysis packages. Public use MCO datasets are available online at <a href="http://www.cdc.gov/nchs/data_access/Vitalstatsonline.htm#Mortality_Multiple">http://www.cdc.gov/nchs/data_access/Vitalstatsonline.htm#Mortality_Multiple</a>
Data Collection Methodology	Physicians, coroners, medical examiners, and funeral directors complete death certificates, which are filed with State vital statistics offices. State programs code these data and forward to NCHS through the Vital Statistics Cooperative Program or NCHS codes them from data provided by the State registration offices. For more information, see <a href="#">Technical Appendix from Vital Statistics of United States: 1999 Mortality</a> .
Content	See table with list of variables below
Demographic Information	Data are available by age group, race, sex, Hispanic origin (for 2005 and later years), date of death, urbanization, and place of residence.
Years of Data	Yearly data since 1999 available for WONDER MCO.
Codes to Identify Poisoning Cases	Up to 20 causes of death are reported using ICD 10 codes. Users can query underlying cause of death and contributing causes of death.
Strengths for Poisoning Surveillance	<ul style="list-style-type: none"><li>• Complete census of deaths</li><li>• Standardized use of ICD coding</li><li>• National, state, and county data</li><li>• Ability to specify <i>drug</i> poisoning, which WISQARS cannot.</li><li>• Able to specify drug types better than the WONDER underlying cause of death query screen.</li></ul>
Weakness for Poisoning Surveillance	<ul style="list-style-type: none"><li>• Timeliness</li><li>• Lack of specification of drugs involved in fatal overdoses for 25% of deaths.</li></ul>

The following table provides a list of variables available for querying and grouping in WONDER MCODE.

Table 1. List of Variables in MCODE

Age Group	10-year (default), 5-year, single-year, infant age groups
Autopsy	No, Yes, Unknown autopsy performed
Gender	Female, Male Sex
Hispanic Origin	Hispanic or Latino, Not Hispanic or Latino, Not stated
MCD-ICD Chapter	Selected main classifications for multiple causes of death
MCD-ICD Sub-Chapter	Selected sub-classifications for multiple causes of death
Multiple Causes of Death	ICD-10 codes, 113 Selected Causes, 130 Selected Causes (for infants), Drug/Alcohol Induced, Injury Intent and Mechanism groups
MCD-ICD-10 113 Cause List	Selected for multiple causes of death
MCD-ICD-10 130 Cause List (infants)	Selected for multiple causes of death for infant mortality
MCD-ICD-Drug/Alcohol Induced Causes	Selected multiple causes of death relating to drug or alcohol
Place of Death	Medical Facility Inpatient, Medical Facility Outpatient or ER, Medical Facility Dead on Arrival, Medical Facility Status unknown (years 1999-2002 only), Decedent's home, Hospice Facility (years 2003 and later only), Nursing home/long term care, Other, Place of death unknown.
Race	American Indian or Alaskan Native, Asian / Pacific Islander, Black or African American, White
Region	Multi-state groups: Northeast, Midwest, South, West
Division	Sub-sets of regions: 1 New England, 2 Mid-Atlantic, 3 East North Central, 4 West North Central, 5 South Atlantic, 6 East South Central, 7 West South Central, 8 Mountain, 9 Pacific
State	State of residence at time of death
County	County of legal residence at time of death
UCD-ICD Chapter	Selected main classifications for underlying causes of death
UCD-ICD Sub-Chapter	Selected sub-classifications for underlying causes of death
UCD- Injury Intent	Selected underlying causes of death relating to injury intent classifications
UCD- Injury Mechanism and All other Leading Causes	Selected underlying causes of death relating injury mechanisms classifications
UCD- Drug/Alcohol induced causes	Selected underlying causes of death relating to drug or alcohol
Underlying Cause of Death	ICD-10 codes, 113 Selected Causes, 130 Selected Causes (for infants), Drug/Alcohol Induced, Injury Intent and Mechanism groups
Urbanization	Large Central Metro, Large Fringe Metro, Medium Metro, Small Metro, Micropolitan (non-metro), Noncore (non-metro)
Weekday	Weekday of death: Sunday through Saturday
Year	Year of death 1999-2010
Month	Month of death: January through December

## Step-by-Step Instructions

This guide will provide you an overview of the steps to query data online. Because you can query the data using specific ICD-10 Codes, different levels of information can be obtained. For example you can look at all drug poisonings or you can query mortality data by types of poisoning (e.g., acute vs. chronic, pharmaceutical poisoning, or opioid-related poisoning). You can also query or cross tabulate data by intent of death (e.g., intentional, unintentional, or undetermined). WONDER allows for querying very specific data or very high level data.

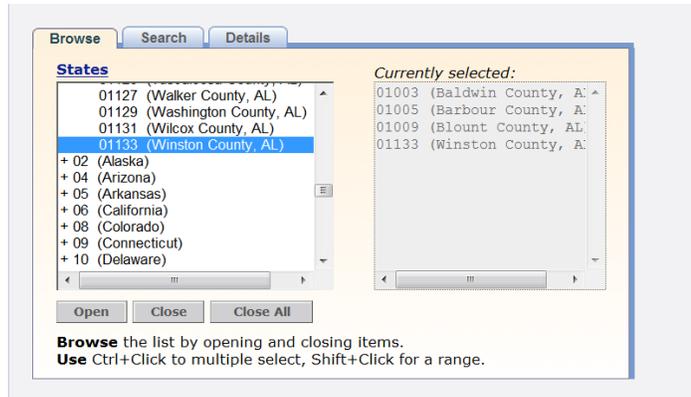
### **Multiple Selections of Items in WONDER**

Throughout WONDER, you may want to "Multiple Selection," which is selecting more than one item (e.g., more than one states, more than one code). To do this you must hold "CTRL" on the keyboard and click the items you want. If you have to scroll to get to the item, hold "CTRL" and click on scroll bar or scroll using your mouse. Where applicable, you will see what you have selected in the box called "Currently selected."

To select sub-items, you will need to open all levels of the items first before doing "Multiple Selection," otherwise previously selected items will not be included in the "Currently Selected" as you click through to open or close items. Items with a "+" means that it has sub-level items.

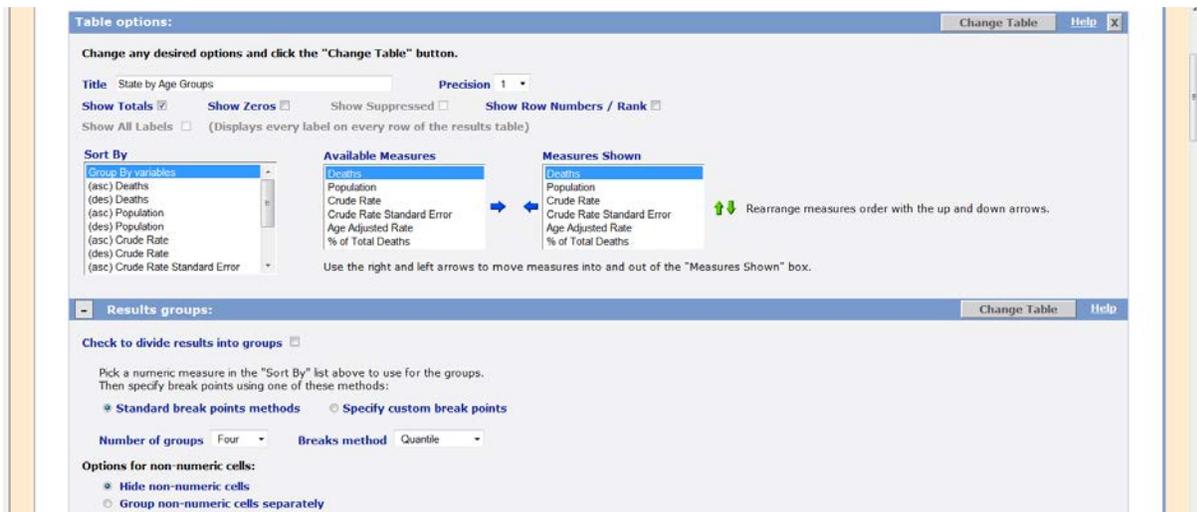
To select a range, hold "CTRL" and "SHIFT" on the keyboard and select the top and bottom of the range.

Reminders of how to do multiple selections are listed in each section on WONDER as "Hint" or Tips.



### MCOD Results Format on WONDER

Results queried from this dataset can be exported or output as tables, maps, charts, data extracts, and cross-tabulated mortality measures. Maps need geographic location variables. Charts can only be created when there are fewer than two by-variables. Maps and charts can only be created after a data request. Data can be grouped by up to five variables. After you query your data, you can also customize your results table in the "results" tab of WONDER. In the "table options" and "results groups," you can change the grouping of the data, change the rate or measure shown, select break points, customize non-numeric cells, and deal with zero cells.

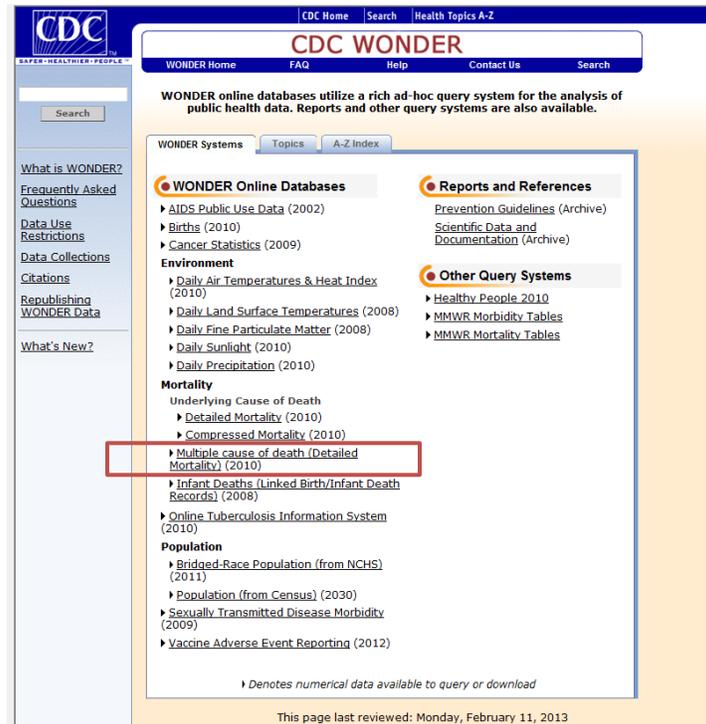


Visit <http://wonder.cdc.gov/wonder/help/QuickStart.html> for information on how to organize a table, create a map, make charts, download into other formats, citations style, and the following:

1. [Request data from WONDER databases?](#)
2. [Organize a table of my data results? \(What is a "By-Variable"?\)](#)
3. [Make a map of my data results?](#)
4. [Make charts of my data results?](#)
5. [Download my data extract as a file for use in other software?](#)
6. [Find the technical notes and other information for the data in my data request?](#)
7. [What citation is suggested for my data?](#)
8. [Set how many quantiles are used my data analysis, or define my own break-points?](#)
9. [Increase the "time-out" limit for database access, when I request a complex or large query?](#)
10. [Select items from the list box?](#)
11. [Change a "CheckBox?" A "Radio Button?"](#)
12. [Save my tables, charts and maps to my own computer, or paste them into other reports?](#)
13. [Use a Finder Tool to select values?](#)

## Accessing Multiple Causes of Death (MCO) Data via WONDER

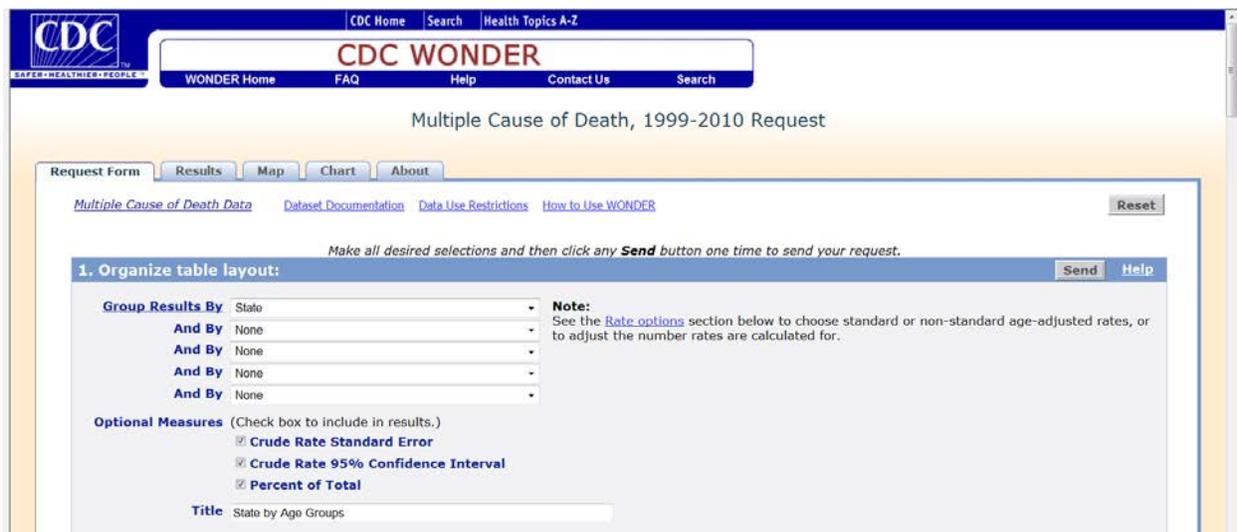
To access the MCO Dataset, select "Multiple Cause of Death (Detailed Mortality)" on <http://wonder.cdc.gov/>. Select data request and agree to terms of data use restrictions on the next page.



The screenshot shows the CDC WONDER website interface. The main content area is titled "WONDER Online Databases" and lists various data categories. Under the "Mortality" section, the option "Multiple cause of death (Detailed Mortality) (2010)" is highlighted with a red rectangular box. Other categories include "Environment", "Population", and "Reports and References". The page footer indicates it was last reviewed on Monday, February 11, 2013.

## 1. Organize Table Layout

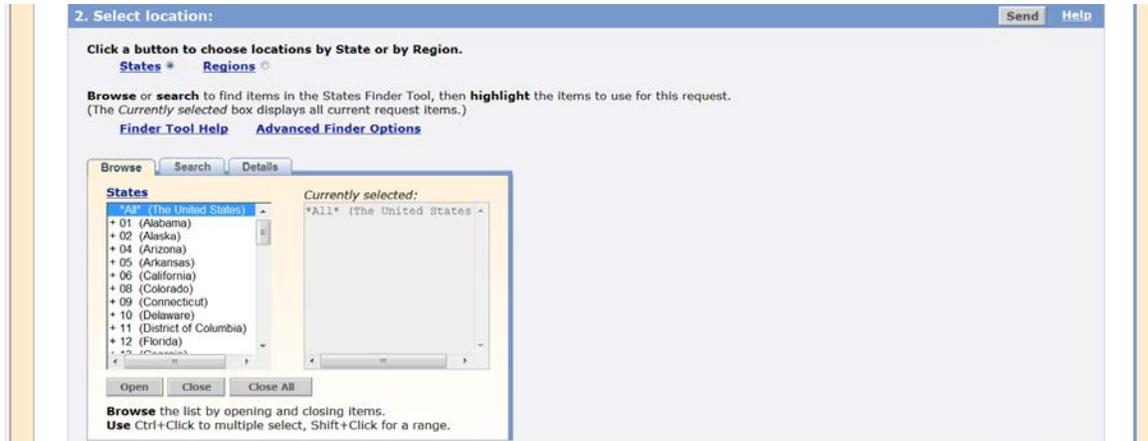
In step 1, select how you want to organize your results. You can organize by any variable (listed above) and you can include optional rates. Optional rates include death counts, crude death rates, age-adjusted rates, 95% confidence intervals, standard errors for rates, and percentage of total. Provide a title if you desire. If you want your results to output a certain way, you will need to group results by certain variables. For example, if you want to create a map you will group your results by "state." Consult the section "MCO Results Format on WONDER" above.



The screenshot shows the "Multiple Cause of Death, 1999-2010 Request" form. The "1. Organize table layout:" section is active, with a "Send" button. The form includes several dropdown menus for "Group Results By" and "And By", all currently set to "None". There are checkboxes for "Optional Measures": "Crude Rate Standard Error", "Crude Rate 95% Confidence Interval", and "Percent of Total", all of which are checked. A "Title" field is present with the text "State by Age Groups". A "Note" section provides instructions on selecting rate options. The form also includes a "Reset" button and navigation tabs for "Request Form", "Results", "Map", "Chart", and "About".

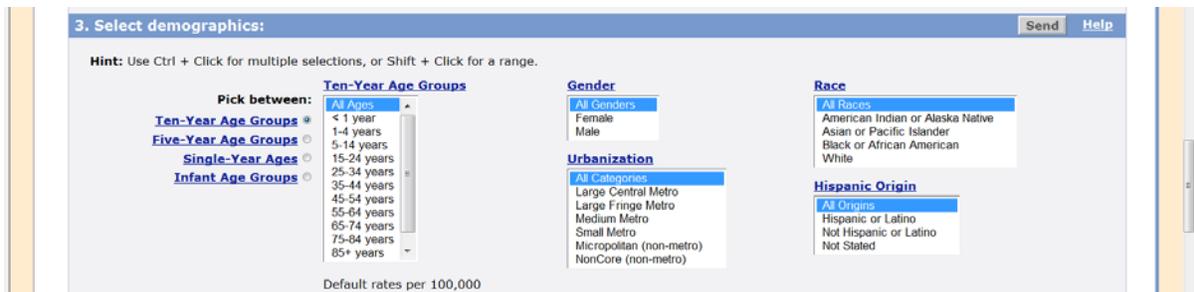
## 2. Select Location

In step 2, select the desired geographic levels for legal place of residence at time of death. Data are organized by Census “Region”, “Division”, “State”, and “County.” Your selection(s) will appear in “Currently selected” box.



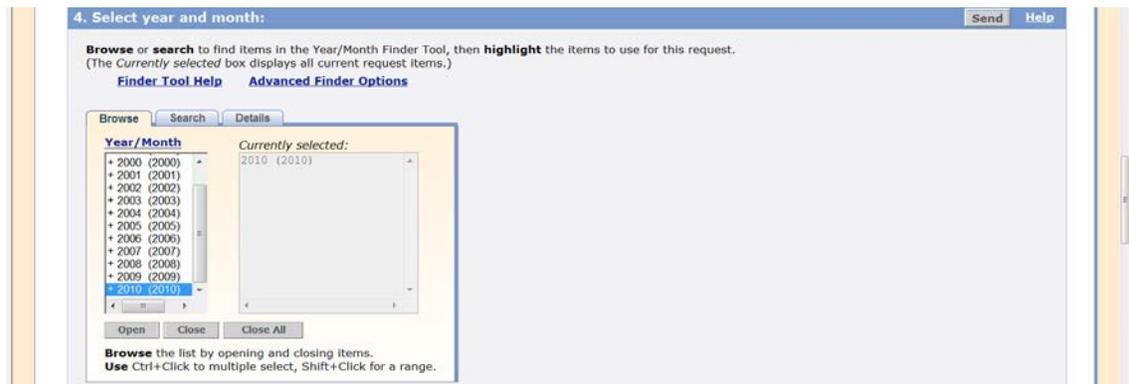
## 3. Select Demographics

In step 3, select the desired age range, gender, urbanization, race, and Hispanic Origin. The default age group is ten-year (<1 year, 1-4 years, 5-14 years, 15-24 years, 25-34 years, etc.). Five-year (<1 year, 1-4 years, 5-9 years, 10-14 years, 15-19 years, etc.), single-year, and infant age groups (<1 day, 1-6 days, 7-27 days, 28-364 days) are available. Urbanization levels use a scheme developed by NCHS which moves from the most urban (Large Central Metro) category to the most rural (NonCore non-metro).



## 4. Select year and month

In step 4, select the year (s) or year/month you want to query.



## 5. Select weekday, autopsy, and place of death

In step 5, select the desired weekday, whether or not autopsy was performed, and places of deaths. Options for places of death include Medical Facility - Inpatient, Medical Facility - Outpatient or ER, Medical Facility - Dead on Arrival, Medical Facility - Status unknown (years 1999-2002 only), Decedent's home, Hospice Facility (years 2003 and later only), Nursing home/long term care, Other, Place of death unknown. (Place of Death not available in archive data).

5. Select weekday, autopsy and place of death: Send Help

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

## 6. Select underlying cause of death

In step 6, select the desired ICD-10 Codes for underlying cause of death. Remember you must open all sub-items first before making multiple selections. For instructions on how to do this, refer back to section "Multiple Selections of Items in WONDER."

6. Select underlying cause of death: Send Help

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

UCD - ICD-10 Codes  UCD - ICD-10 130 Cause List (Infants)  UCD - Drug/Alcohol Induced Causes

UCD - ICD-10 113 Cause List  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**

- + Y00 (Neglect and abandonment)
- + Y07 (Other maltreatment syndromes)
- Y08 (Assault by other specified means)
- Y09 (Assault by unspecified means)
- Y10-Y34 (Event of undetermined intent)
- Y10 (Poisoning by and exposure to nonopioid analgesics, antipyretics, and antitussives)
- Y11 (Poisoning by and exposure to antiepileptic, sedative-hypnotic, anxiolytic, or hypnotic drugs)
- Y12 (Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], except natural opium or opiates)
- Y13 (Poisoning by and exposure to other drugs acting on the central nervous system)
- Y14 (Poisoning by and exposure to other drugs)
- Y15 (Poisoning by and exposure to alcohol, undetermined intent)
- Y16 (Poisoning by and exposure to cyanides)
- Y17 (Poisoning by and exposure to organic solvents and inorganic solvents)
- Y18 (Poisoning by and exposure to other toxic substances)

**Currently selected:**

- X43 (Accidental poisoning by and exposure to other drugs, except narcotics or psychodysleptics [hallucinogens], except natural opium or opiates)
- X44 (Accidental poisoning by and exposure to other drugs)
- X60 (Intentional self-poisoning or drug abuse)
- X61 (Intentional self-poisoning or drug abuse by narcotics and psychodysleptics [hallucinogens])
- X62 (Intentional self-poisoning or drug abuse by sedatives, hypnotics, anxiolytics, or antiepileptics)
- X63 (Intentional self-poisoning or drug abuse by other drugs)
- X64 (Intentional self-poisoning or drug abuse by narcotics and psychodysleptics [hallucinogens])
- X65 (Intentional self-poisoning or drug abuse by other drugs)
- X66 (Intentional self-poisoning or drug abuse by other drugs)
- X67 (Intentional self-poisoning or drug abuse by other drugs)
- X68 (Intentional self-poisoning or drug abuse by other drugs)
- X69 (Intentional self-poisoning or drug abuse by other drugs)
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- X95 (Intentional self-poisoning or drug abuse by other drugs)
- X96 (Intentional self-poisoning or drug abuse by other drugs)
- X97 (Intentional self-poisoning or drug abuse by other drugs)
- X98 (Intentional self-poisoning or drug abuse by other drugs)
- X99 (Intentional self-poisoning or drug abuse by other drugs)

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.

## 7. Select multiple causes of death

In step 7, select desired contributing cause of deaths and click “Move items over.” The top box will select deaths with any of these items, whereas the bottom box will select only those deaths that have a code in the top box and in the bottom box. The “AND” box limits the query by providing a criteria that each record must meet. Consult our Prescription Drug Overdose Data and Statistics Guide to Codes for ICD-10 Codes to query. Remember you must open all sub-items first before making multiple selections. For instructions on how to do this, refer back up to section “Multiple Selections of Items in WONDER.”

The screenshot shows a web interface titled "7. Select multiple cause of death:". It includes a "Send" and "Help" button in the top right. Below the title, there are radio buttons for selecting ICD codes by "Chapters" or "Groups". Under "Chapters", there are four options: "MCD - ICD-10 Codes" (selected), "MCD - ICD-10 130 Cause List (Infants)", "MCD - ICD-10 113 Cause List", and "MCD - Drug/Alcohol Induced Causes".

Below this, a note states: "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." A link for "Finder Tool Help" is provided.

The main interface is divided into two main sections:

- Select Records:** This section has two text input boxes. The first is labeled "with any of these items:" and contains a list of codes: T40.0 (Opium), T40.1 (Heroin), T40.2 (Other opioids), T40.3 (Methadone), and T40.4 (Other synthetic). The second box is labeled "AND any of these items:" and is currently empty. Below each box is a "Clear" button. A note below the "AND" box says: "Leave box empty, or use \*All\*, to select all values."
- Browse:** This section shows a list of "MCD - ICD-10 Codes". The list includes T39, T40 (with sub-items T40.0 through T40.9), T41, and T42. The T40 sub-items are expanded and highlighted in blue. Below the list are buttons for "Open", "Open Fully", "Close", and "Close All". A note below the list says: "Browse the list by opening and closing items. Use Ctrl+Click to multiple select, Shift+Click for a range."

Between the two main sections are two "Move Items Over" buttons with "<<<" symbols.

At the bottom, there are two notes: "Note: Use both selection boxes to select results that contain items from both the first AND second box. See the [feature description](#) for more information." and "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."

## 8. Select rate options

In step 8, select your desired rate options to show age-adjusted rates or not and what type (standard vs. non-standard). Age weights are based on 2000 projected population numbers.

## 9. Other options

In step 9, select how you want your results to display, which include decimal places or showing totals. Then “Send” in your data request, and results will display in the web browser.