Background

The indicator-Based Information System for Public Health (IBIS-PH) provides statistical numerical data as well as contextual information on the health status of Utahns and the health care system in Utah. Data are displayed on the IBIS website through indicator reports and custom queries. An indicator report provides online numerical data for a health indicator as well as its public health context, including what the current status is and what is being done to improve it. Indicator reports are static and provide an overview of a specific public health issue in Utah. A custom query is an interface (set of pages) in which the user can select a dataset and a measure then limit the results to obtain specific data. Custom queries are generally used by more advanced users.

This user guide will provide an overview of the interactive query system. For the purposes of this guide, queries related to suicide and self-inflicted injuries will be used. The information is intended to support evidenced-based decision making to plan and improve service delivery, evaluate health care systems, and inform policy decisions.

Suicide Death and Self-inflicted Injury Data

There are three types of suicide data a user may want to access on IBIS-PH:

1) injury mortality,
2) self-inflicted injury hospital discharge, and
3) self-inflicted injury emergency department data.
1. Go to: ibis.health.utah.gov/ and click on “Advanced Users.”

2. Click “Data Queries.”
A list of dataset queries will appear after clicking on “Data Queries.” Scroll down to “Injury.” The injury module displays injury data only.
Accessing Injury Mortality Data

Select “Injury Mortality” to access mortality data. This will link to the Injury Mortality Query Module Configuration selection. The injury module displays all injury data, which can be queried to include only self-inflicted injuries.

A list of commonly used measures are displayed under the tab “Quick Selection.” Click on any of these measures to build a query. Click on the question mark icon for a definition of each measure.

Select the “Advanced Selection” tab to display measures for county and local health district, race/ethnicity and Utah Small Area.

Select the “Trend Analysis” tab to display an injury trend analysis.
Injury Mortality Query Example

Injury mortality can be queried by year(s), injury cause of death, injury intention, age of decedent, and geographic area. This example will use the crude rate. Age-adjusted rates would be appropriate for reporting an overall rate, especially when comparing rates between geographic areas (e.g. between counties, or comparing Utah with the national rate).

A. Select “Injury Mortality.”

B. Select “Injury Crude Rates” under the “Quick Selection.” (See previous page for screen shot).

C. A popup box with terms and condition will appear. Select “I Agree” to proceed. You can now start building a query for injury mortality data by clicking on step 1 and working through each step.

Step 1: Select year
There are two options:

1) To select a single year, click on the desired year. To select a group of years, click on one year, hold down the shift key and click on the preferred years.

2) Recommended for rural and fronteir areas or any grouping where number of deaths may be too small or supressed. Suicide is a rare event, querying the data by other small groups such as youth age, rural areas, etc. may have small counts of suicide, which will lead to the numbers being suppressed for confidentiality reasons. It is recommended in these situations to query data for three or five-year groupings. Click on “Enter custom year group(s)” and enter range(s) of years.

Selected years will be displayed in the Step 1 tab (this is true for other steps as well).
Step 2: Select injury cause of death
Select “All causes of death.” Overall suicide deaths encompass all mechanisms of injury.

Step 3: Select injury intention
Select “Self-inflicted” injury intention to query suicides.

Step 4: Select age of decedent
There are two options:
1) Select a default age group. Default age groups are: all age groups, less than 1, 1-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+. Multiple default age groups can be selected by clicking on one age group, holding down the shift key and clicking on the preferred age groups.

2) Select a custom age group. Select the “Custom age group” option. Enter the desired age groups into the boxes.

Step 5: Select sex
Males and females can be queried separately or both included. Select one of the three options.
Step 6: Select geographic area

There are two options when selecting geography (an example on how to access data by Utah Small Area will be included at the end of this section). Review the Geographic Areas For Health Data document (ibis.health.utah.gov/pdf/resource/GeographicAreas.pdf) to better understand these geographic areas.

1) Query by local health district(s). There is an option to query all local health districts or select multiple local health districts. Hold down the control key to select multiple districts.

2) Query by county. There is an option to query all counties or select multiple counties. Hold down shift while clicking to select multiple counties.

Step 7: How to display the data

Data can be displayed by category (year, cause of death, injury intention, age group, sex, or geographic area), group by (year, cause of death, injury intention, age group, sex, or geographic area), chart, map, or primary measures. Click the question icon to see definitions of each type of data display option. Select the display data options and click “Submit” at the bottom of the page to display your results.
Query Results
Data can be displayed by category, group by, chart, map, or primary measures. Click the question icon to see definitions of each type of data display option. Select the display data options and click “Submit” at the bottom of the page to display your results.

Click on the “Data Notes,” “Data Source,” and “Data Issues,” tabs at the bottom to expand those sections and learn more about the data.
Accessing Injury Hospital Discharge Data

Go back to “Data Queries.” Select “Injury Hospital Discharge” to access hospital data. This link will take you to the Injury Inpatient Hospital Discharge Query Module Configuration selection. This module displays all injury hospital discharge data, which can be queried to include only self-inflicted injuries.

This module can be queried by “Injury Selection” or “Trend Analysis.” Click on either category to select the desired measures to build a query. Click on the question mark icon for a definition of each measure.

Click on the “Injury Selection” tab to display measures for county and local health district and Utah small areas.
Click on the “Trend Analysis” tab to display measures for hospital discharge by Utah county and local health district and Utah small areas.
Injury Inpatient Hospital Discharge Query Example

Injury hospital discharge data can be queried by hospital discharges, hospital charges, hospital length of stay in days, and in-hospital deaths. These can be further broken down by either county, local health district, or Utah Small Areas.

A. Select “County and Local Health District.”

B. Select “Hospital Discharges.”

C. Select “Crude Rates.” A popup box with terms and condition will appear. Click “I Agree” to proceed. You can now start building a query for injury inpatient hospital discharge data by clicking on step 1 and working through each step.

Step 1: Select year

There are two options:

1) To select a single year, click on the desired year. To select a group of years, click on one year, hold down the shift key, and click on the preferred years.

2) Click on “Enter custom year group(s)” and enter range(s) of years.

Selected years will be displayed in the Step 1 tab (this is true for other steps as well).

Step 2: Select reason for hospitalization

Click on “UDOH injury causes” and select “All injury causes.”
**Step 3: Select injury intention**
Select "Self-inflicted."

**Step 4: Select age**
Choose the appropriate age group for your analysis.

**Step 5: Select sex**
Select either or both male and female.
Step 6: Select primary payer and Step 7: Select discharge status
Choose any of the options in step 6 or 7 to meet the needs of the analysis. Leaving the options unmarked will included all options in the analysis.

Step 8: Select resident status
Click on “Utah Residence.”

Step 9: Select geographic area
There are two options when selecting geography (an example of how to access data by Utah Small Area will be included at the end of this section). Review the Geographic Areas For Health Data document (ibis.health.utah.gov/pdf/resource/GeographicAreas.pdf) to better understand these geographic areas.  
1) Query by local health district(s). There is an option to query all local health districts or select multiple local health districts. Hold down the control key to select multiple districts.
2) Query by county. There is an option to query all counties or select multiple counties. Hold down shift while clicking to select multiple counties.

Step 10: How to display the data
Data can be displayed by category (year, hospitalization diagnosis/reason, injury intention, age group, sex, primary payer, discharge status, geographic area, or Utah residence status), group by (year, hospitalization diagnosis/reason, injury intention, age group, sex, primary payer, discharge status, geographic area, Utah residence status), chart, map, or primary measures.

Click the question icon to see definitions of each type of data display option. Select the display data options and click “Submit” at the bottom of the page to display your results.
Query Results
Data can be displayed by category, group by series, chart, map, or primary measures. Click the question icon to see definitions of each type of data display option. Select the display data options and click “Submit” at the bottom of the page to display your results.

Click on the “Data Notes,” “Data Source,” and “Data Issues,” tabs at the bottom to expand those sections and learn more about the data.
Accessing Injury Emergency Department (ED) Data
Go back to “Data Queries.” Select “Injury Emergency Department” to access injury emergency department data. This will link to the Injury Emergency Department Encounter Query Module Configuration Selection. This module displays all injury emergency department encounter data, which can be queried to include only self-inflicted injuries.

This module can be queried by “Quick Selection,” “Advanced Selection,” and “Trend Analysis.” Click on any category to select the desired measures to build a query. Click on the question mark icon for a definition of each measure.

Click on the “Quick Selection” tab to display measures for Treat and Release by hospital ED injury encounters or hospital ED charges, Treat and Admit (Inpatient) by hospital discharges, hospital charges, or hospital length of stay in days, and All ED Injury Encounters by hospital ED injury encounters or hospital ED charges.

Click on the “Advanced Selection” tab to display measures for county and local health district by treat and release, treat and admit, or all ED encounters or Utah Small Areas by treat and release, treat and admit, or all ED encounters.

Click on the “Trend Analysis” tab to display measures for injury by Utah county and local health district treat and release, treat and admit, or all ED encounters and Utah Small Areas by treat and release, treat and admit, or all ED encounters.
Injury Emergency Department Encounters Example

Injury emergency department (ED) encounter data can be queried by hospital ED injury encounters, hospital ED charges, hospital discharges, hospital charges, and hospital length of stay in days; which can be broken down by county, local health district, or Utah Small Areas.

A. Select “All ED Injury Encounters.”

B. Select “Hospital ED Injury Encounters.”

C. Select “Crude Rates – ED Injury Encounters.” A popup box with terms and condition will appear. Click “I Agree” to proceed. You can now start building a query for injury patient hospital discharge data by clicking on step 1 and working through each step.

Step 1: Select year
There are two options:
1) To select a single year, click on the desired year. To select a group of years, click on one year, hold down the shift key and click on the preferred years.

2) Click on “Enter custom year group(s)” and enter range(s) of years.

Selected years will be displayed in the Step 1 tab (this is true for other steps as well).
Step 2: Select reason for ED encounter
Click on “UDOH injury causes” and select “All injury causes.”

Step 3: Select injury intention
Select “Self-inflicted.”

Step 4: Select age
Choose the appropriate age group for your analysis.

Step 5: Select sex
Males and females can be queried separately or both included. Select one of the three options.
**Step 6: Select primary payer and Step 7: Select discharge status**
Choose any of the options in step 6 or 7 to meet the needs of the analysis. Leaving the options unmarked will include all options in the analysis.

**Step 8: Select resident status**
Click on “Utah Residence.”

**Step 9: Select geographic area**
There are two options when selecting geography (an example on how to access data by Utah Small Area will be included at the end of this section). Review the Geographic Areas For Health Data document (ibis.health.utah.gov/pdf/resource/GeographicAreas.pdf) to better understand these geographic areas.
1) Query by local health district(s). There is an option to query all local health district or select multiple local health districts. Hold down the control to selecting multiple districts.
2) Query by county. There is an option to query all counties or select multiple counties. Hold down shift while clicking to select multiple counties.

**Step 10: How to display the data**
Data can be displayed by category (year, hospitalization diagnosis/reason, injury intention, age group, sex, primary payer, discharge status, geographic area, or Utah residence status), group by (year, hospitalization diagnosis/reason, injury intention, age group, sex, primary payer, discharge status, geographic area, or Utah residence status), chart, map, or primary measures.

Click the question icon to see definitions of each type of data display option. Select the display data options and click “Submit” at the bottom of the page to display your results.
Query Results
Data can be displayed by category, group by series, chart, map, or primary measures. Click the question icon to see definitions of each type of data display option. Select the display data options and click “Submit” at the bottom of the page to display your results.

Click on the “Data Notes,” “Data Source,” and “Data Issues,” tabs at the bottom to expand those sections and learn more about the data.
Example: Other View Options
The sidebar on the left side of the query results page provides multiple options to display the query criteria that has been selected. For example, you can click on “Chart Options” and select a line graph to display the data (data from example: injury mortality). Line graphs are the preferred method of showing suicide rates over time.

![Sidebar options](image)
**Interpretation**

The query results include a range of values indicated by the vertical line going through the value. This is called the confidence interval.

The U.S. Census defines a confidence interval as a range of values that describes the uncertainty surrounding an estimate. Confidence intervals are one way to represent the quality of an estimate; the larger a confidence interval for an estimate, the more caution is required when using and interpreting the estimate. The smaller a confidence interval, the more likely it is to be accurate. This is often a reflection of the population sample size that was used to create the estimate.

Statistical significance can be determined using the confidence bounds provided in the output. Review the Confidence Intervals in Public Health document ([ibis.health.utah.gov/pdf/resource/ConfInts.pdf](ibis.health.utah.gov/pdf/resource/ConfInts.pdf)) to better understand these geographic areas. If for example, you want to know if the rate of suicide is significantly higher or lower than the previous year, you can use the confidence bounds to determine significance. When the difference is determined to be statistically significant, it means that it is unlikely to be due to chance alone. If the confidence bounds overlap with the previous year, the difference is not considered statistically significant and could be due to chance, so interpret results with caution. If there isn’t an overlap, then the difference is considered significant and unlikely to be due to chance alone. In our example, none of the suicide rates are statistically higher or lower than the previous year’s rates as demonstrated by the overlap of confidence bounds. It is sometimes difficult to determine visually on a chart if confidence bounds overlap. When this happens, you can use the actual numbers provided in the table to determine if there is an overlap of confidence bounds between years.
Exporting Data
Data can be exported to Excel. In the query results page, click “Output to Excel.”

Click on the Excel file to open the document.

Creating a chart or graph in Excel:
1) Highlight data and copy and paste it into a new tab in Excel.
2) With the data highlighted that you would like to use, click on “Insert” on the toolbar at the top of the page.
3) Click on desired type of chart. Line charts are recommended for showing rates over time and pie charts are recommended when you want to show percentages (e.g., when you want to show what percentage of decedents died by firearm, suffocation, or poisoning).