

# **Defense Medical Epidemiology Database**

## **(DMED) 5.0 Users Guide V. 1.0**

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**Armed Forces Health Surveillance Branch**

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All data on DoD Service members contained in DMSS are validated against DoD personnel data. Stratum data elements (i.e., gender, age, grade, race/ethnic, and marital status) for a medical event are derived from personnel data considered to be current on the date of a medical event. Overall and stratum-specific population statistics (i.e., person year denominators) are calculated based on longitudinal personnel data. Stratum-specific unknown (or missing) data are excluded from the stratum-specific calculations.

### ***Hospitalization Data:***

Only hospitalization records considered complete are processed into DMSS and then captured in DMED.

### ***Ambulatory Data:***

Only ambulatory records considered complete are processed into DMSS and then captured in DMED.

### ***Reportable Event Data:***

DMSS and DMED included Army reportable event data for calendar years 1995 to present, and Navy and Air Force data from calendar years 2000 to present.

## **Privacy issues**

DMED provides summary level data on groups of active component service members. It does not provide access to individual patient-level information.

## **Login / Password Information**

### **Login**

To create a DMED account or login to your account, go to the following link on the DHA website: <https://www.health.mil/dmed/>

### **Forgot password**

If you have forgotten your user id or password contact the DMED administrator via email at [dha.ncr.health-surv.mbx.afhs-dmed@mail.mil](mailto:dha.ncr.health-surv.mbx.afhs-dmed@mail.mil).



2. **Submit Query:** When you are ready to submit your query to the database, click the Submit Query button at the top of the screen. The results of your query will appear on the Results tab. For more complex queries involving specific selections of Location(s) and/or Occupational Groups, more time may be needed to execute your query, approximately 1 - 3 minutes. For these types of queries, you will be prompted with a dialog box displaying this information. You may choose to continue or cancel your query. In addition, you can choose to disable the dialog box for future queries.
3. **Displaying Results:** Detailed query results will be displayed as multiple tabs, which include a table of counts, a table on the population (person-years), a rate table, a rate line chart, and a rate bar chart. For the rate table and figures, the user can change the rate denominator from the default of “rate per 1,000 persons per year” to range from 10 to 1,000,000 persons per year. Current year results will display as counts only.

## Supplemental Information

1. **Query History:** Retains the ten most recent queries you have performed during a session. A user can access the query history function by clicking on the View History button at the top of the screen. The View History screen will display the results of the most recently run query. There are numbered buttons across the top allowing you to select up to ten previously performed queries.

2. **Printing query results:** Any result screen can be printed directly from DMED by clicking the Print button at the bottom of the screen. The displayed results will appear on the printout. Choose landscape mode to view the entire printout.
3. **Export Data:** Any results from queries can be exported to Excel directly from DMED by clicking the Export to Excel button at the bottom of the results screen.

## Main Menu - Step by Step Overview

The main functions of DMED include five different types of queries: ICD-9 Detailed Query, ICD-10 Detailed Query, ICD-9 Top Ten Diagnoses, ICD-10 Top Ten Diagnoses, and Population Data. To perform a query, simply select the button (located vertically in the Query Type box) for the type of query you would like to perform. Three different data sources can be searched: Hospitalizations, Ambulatory Data and Reportable Events.

## How to perform a query

### How to Perform a Query

1. Select the type of query you would like to perform (ICD-9 Detailed Query, ICD-10 Detailed Query, ICD-9 Top Ten Diagnoses, ICD-10 Top Ten Diagnoses, or Population Data). Depending on the type of query you select, the appropriate selectable tabs will appear horizontally across the top. Use these tabs, and move across left to right to design your query.
2. Select ICD-9 Codes from **ICD-9 Explorer** Tab or ICD-10 Codes from **ICD-10 Explorer** Tab.
  - A search box is provided to lookup ICD-9 or ICD10 codes by their number or by character/word search within the description.
  - A maximum of fifteen codes/ranges may be selected for Hospitalization or Ambulatory queries.
3. Select the **Population** Tab.
  - Choose Service(s).
  - Choose Demographics of Interest.
  - Choose Time Frame of interest.



4. Select the **Diagnoses & Occurrences** Tab
  - Choose the diagnostic position to search (Primary Diagnosis, Any of Top 3 Diagnoses, or Any Diagnosis).
  - Choose to filter the codes of interest based on All Occurrences (counts/rates of all encounters) or First Occurrence (counts/rates of first occurrence per person for the specified query).
  - Only one code may be selected for the First Occurrence query.
  
5. Select the **Location/Occupation** Tab.
  - Select the location(s) and occupation(s) of interest.
  - A maximum of five locations and five occupations may be selected.
  - Your selection(s) will appear in the selected box on the screen.
  
6. Select the **Display Config** Tab.
  - Choose x-axis variable.
  - Choose the strata variable (note: the strata variable must be different than the x-axis variable).
  
7. Press the **Submit Query** button.

The results should return within 30 seconds. For more complex queries containing multiple location and multiple occupation selections, results may take anywhere from 1 - 3 minutes.

## Procedure and Screenshots for each tab

### ICD-9/10 Explorer Tab

The ICD-9/10 Explorer also has a search function enabling you to search by code or text. Type the code or text string you desire in the **Lookup** box on the right of the screen and click on the **Search** button. The desired item will be highlighted. Click the left mouse button to select the highlighted item. To clear all selections and begin over, click on the **Clear All** button.

The screenshot displays the 'Armed Forces Health Surveillance Branch' interface. At the top, the user is identified as 'Captain SONG'. The main navigation bar includes tabs for 'Setup', 'ICD-9 Explorer', 'Population', 'Diagnoses & Occurrences', 'Location/Occupation', and 'Display Config'. The 'ICD-9 Explorer' tab is selected, showing a search area with a 'Submit Query' button, a 'Reset All' button, and a 'View History' button. Below the search area, there are tabs for 'All Conditions' and 'Rep Events Only'. A list of ICD categories is displayed, each with a folder icon and an expandable arrow. The categories include: 001 - V99 ALL DISEASES AND INJURIES, 001 - 139 INFECTIOUS AND PARASITIC DISEASES, 140 - 239 NEOPLASMS, 240 - 279 ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES, AND IMMUNITY DISORDERS, 280 - 289 DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS, 290 - 319 MENTAL DISORDERS, 320 - 389 DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS, and 390 - 459 DISEASES OF THE CIRCULATORY SYSTEM. On the left, a 'Selected ICD Codes' box shows 'No ICD Codes Selected' and a 'Clear All' button.

Clicking on the **arrow** sign next to a displayed range expands the display to show the next level of detail. Select codes or code ranges by clicking on them with the left mouse button. Your selection(s) will be highlighted and appear in the **Selected Codes** box on the screen.

### Population Tab

The Population tab displays the cumulative person years contributed during the

calendar years of interest for all active component members of the population sub-strata selected. These are the denominators for the rate calculations. (Not available for current year data).

The screenshot displays the DMED 5.0 user interface with the following components:

- Buttons:** "Submit Query" (green), "Reset All" (blue), and "View History" (light blue).
- Tabs:** "Setup" (with a gear icon), "Population" (with a person icon), "Location/Occupation" (with a location pin icon), and "Display Config" (with a list icon).
- Service Filter:**
  - Reset
  - Army
  - Navy
  - Air Force
  - Marines
  - All
- Gender Filter:**
  - Reset
  - Male
  - Female
  - All
- Age Filter:**
  - Reset
  - < 20
  - 20-24
  - 25-29
  - 30-34
  - 35-39
  - >= 40
  - All
- Race Filter:**
  - Reset
  - White
  - Black
  - Other
  - All
- Grade Filter:**
  - Reset
  - E1-E4
  - E5-E9
  - O1-O3 (W1-W3)
  - O4-O9 (W4-W5)
  - All
- Marital Status Filter:**
  - Reset
  - Single
  - Married
  - Other
  - All
- Reset Time Filter:**
  - 1990-2006
  - Last 10 Years
- Year Selection:**
  - 2007
  - 2008
  - 2009
  - 2010
  - 2011
  - 2012
  - 2013
  - 2014
  - 2015
  - 2016
  - All

## Location/Occupation Tab

The user may select up to five locations and five occupations from the **Location/Occupation** tab. Both the location and occupation explorers are laid out in a tree structure. Clicking on the **arrow** sign next to a displayed range expands the display to show the next level of detail. To select a specific location or occupation, click on it with the left mouse button. Your selection(s) will be highlighted and appear in the **Selected** box on the screen. To select (or deselect) multiple codes, hold down the **Ctrl** key and click on each desired code.

Please note that when selecting specific **Location(s)**, the population data being used in your query is defined as the active component population **ASSIGNED** to a particular location (or group of locations) that you select. Therefore, for a query, the results returned show the selected diagnoses for the active component population **ASSIGNED** to the **Location(s)** you selected, along with the other demographic selections you have made. Your results **DO NOT** show the selected diagnoses for the active component population **TREATED** at the location(s) you selected.

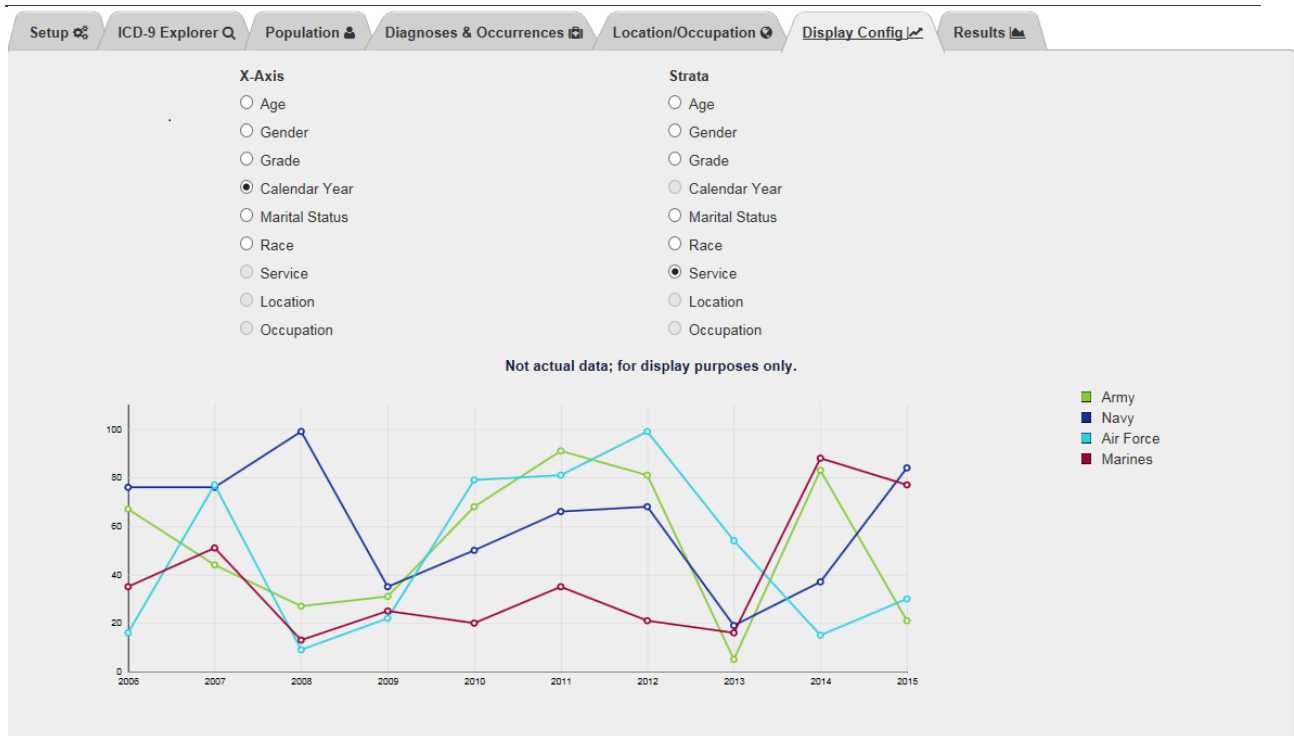
For more information on DoD Primary Occupational Codes, please refer to:

DoD Occupational Conversion Index  
 enlisted/officer/civilian DoD 1312.1-1  
 Publication issued March 1997  
 Document currently maintained online by Defense Manpower Data Center

## Display Config Tab

The user selects the values to be used for data display by selecting the X-axis and Strata variables. The same variable cannot be selected for both the X-axis and Strata.

A graphical representation will display how your data will be represented. Please note the sample graph is for *display purposes only*. The data provided in the sample graph are **not** the information you queried.



## Results Tab

The Results tab is automatically displayed after a query is submitted. The Results tab contains up to five sub-tabs depending on the type of query submitted:

**ICD Codes:** 290 - 319 MENTAL DISORDERS  
**Service:** All  
**Grade:** All  
**Data Sources:** Hospitalizations Ambulatory Data Reportable Events  
**Gender:** All  
**Marital Status:** All

**Query Type:** ICD-9 Based Query 1990 - Sep 2015  
**Age:** All  
**Time:** 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015  
**Condition:** Primary Diagnosis  
**Race:** All  
**Occurrence:** All Occurrences

Sub-tabs: Counts, Population, Rate, Line Chart, Bar Chart

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
<b>Army</b>	6,343	8,092	9,071	10,704	10,651	12,107	11,630	9,567	8,280	7,680	94,125
<b>Navy</b>	2,340	2,609	2,676	2,803	2,989	3,117	3,284	3,046	2,856	3,116	28,836
<b>Air Force</b>	2,237	2,072	2,109	2,426	2,983	3,129	3,455	3,236	2,826	2,815	27,288
<b>Marines</b>	1,247	1,501	1,930	2,054	2,236	2,540	2,320	2,176	1,967	1,919	19,890
<b>Total</b>	12,167	14,274	15,786	17,987	18,859	20,893	20,689	18,025	15,929	15,530	170,139

Note: Population data for CY2015 only includes Jan - Sep for ICD-9 codes

Buttons: Export To Excel, Print

**Counts** - displays the count of the cases of the selected outcome of interest for the population substrata selected. These are the numerators for the rate calculations.

**Population** - displays the cumulative person years contributed during the calendar years of interest for all active component members of the population sub-strata selected. These are the denominators for the rate calculations. (Not available for current year data).

**Rate** - displays rates of the selected outcome of interest (rounded to 2 decimal places) for the population substrata selected. The default rate is counts per 1,000 persons per year.

**Line Chart** - graphs the rates in line chart format.

**Bar Chart** - graphs the rates in bar chart format.

## View History

Retains the ten most recent queries you have performed during a session. Access the query history function through the View History button on the top of the screen. The View History screen will display the results of the most recently run query. There are numbered buttons across the top allowing you to select up to ten previously performed queries.

History ✕

Click on the items below to view a summary of your last ten (10) searches

« 1 2 3 4 5 »

<p><b>ICD Codes:</b> 140 - 239 NEOPLASMS</p> <p><b>Service:</b> All</p> <p><b>Grade:</b> All</p> <p><b>Data Sources:</b> Hospitalizations</p> <p><b>Gender:</b> All</p> <p><b>Marital Status:</b> All</p>	<p><b>Query Type:</b> ICD-9 Based Query (1990 - 2015)</p> <p><b>Age:</b> All</p> <p><b>Time:</b> 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015</p> <p><b>Condition:</b> Primary Diagnosis</p> <p><b>Race:</b> All</p> <p><b>Occurrence:</b> All Occurrences</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Counts ■
Population ■
Rate ■
Line Chart ■
Bar Chart ■

Hospitalizations	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Army	917	928	1,009	964	1,030	972	904	835	786	8,345
Navy	476	479	472	488	481	456	434	360	359	4,005
Air Force	598	531	535	549	559	498	444	488	401	4,603
Marines	136	171	168	180	174	176	135	118	113	1,371
<b>Total</b>	2,127	2,109	2,184	2,181	2,244	2,102	1,917	1,801	1,659	18,324

Export To Excel
Cancel
Print

# Top Ten Query

## Top Ten Overview

The top ten diagnoses query displays the most commonly occurring conditions for the specified ICD code range and populations. ICD-9/10 codes for this query are specified at the 3-digit level only. The following steps are necessary to perform a Top Ten Diagnoses query.

- Choose the **ICD-9 or ICD-10 Top Ten Diagnoses** button.
- Choose the data source of interest or leave all selected: Hospitalizations, Ambulatory Data, or Reportable Events.
- Selectable query design tabs are: ICD-9/10 Explorer, Population and Location/Occupation.

Setup ICD-9 Explorer Q Population Location/Occupation

Query Type

- ICD-9 Based Query (1990 - 2015)
- Top Ten Diagnoses (ICD-9 1990 - 2015)
- Population Data
- ICD-10 Based Query (2016 - present)
- Top Ten Diagnoses (ICD-10 2016 - present)

Data Source

- Hospitalizations
- Ambulatory Data
- Reportable Events

# Population Query

## Population Statistics

DMED also allows queries on population statistics (the total number of person years documented in the database for the population specified). No diagnosis information is included in these figures.

To obtain population statistics:

1. Select the **Population Button**.
2. The DMED will automatically go to the **Population** tab. Click on the check box next to the population you wish to study.

The screenshot displays the DMED Population Query interface. At the top, there are three buttons: "Submit Query" (green), "Reset All" (blue), and "View History" (light blue). Below these are four tabs: "Setup" (gear icon), "Population" (person icon), "Location/Occupation" (location icon), and "Display Config" (checkmark icon). The "Population" tab is currently selected. Underneath the tabs are six filter panels, each with a "Reset" link and a list of checkboxes:

- Service:** Army, Navy, Air Force, Marines, All (checked).
- Gender:** Male, Female, All (checked).
- Age:** < 20, 20-24, 25-29, 30-34, 35-39, >= 40, All (checked).
- Race:** White, Black, Other, All (checked).
- Grade:** E1-E4, E5-E9, O1-O3 (W1-W3), O4-O9 (W4-W5), All (checked).
- Marital Status:** Single, Married, Other, All (checked).

Below the filter panels is a "Reset Time Filter" section with two tabs: "1990-2006" and "Last 10 Years". Under "Last 10 Years", there is a row of checkboxes for years 2007 through 2016, and "All" (checked).

3. Next, select the **Location/Occupation Button**. Select the desired Location and Occupational Group filters.
4. Select the **Submit Query** button. For more complex queries involving specific selections of Location(s) and/or Occupational Groups, more time may be needed to execute your query, approximately 1 - 3 minutes. At this time, you will be prompted with a dialog box with this information. You may choose to continue or cancel your query. In addition, you can choose to disable the dialog box for future queries.
5. Your query results will be displayed on the **Results** tab in table format



Setup **Population** Location/Occupation Display Config Results

**Query Type:** Population Data      **Service:** Navy  
**Age:** 25-29      **Grade:** E5-E9  
**Time:** 2007 2008 2009 2010 2011 2012 2013 2014 2015      **Condition:** Primary Diagnosis  
**Gender:** All      **Race:** Other  
**Marital Status:** Married      **Occurrence:** All Occurrences

**Population**

Population	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Navy	5,100	5,104	4,969	4,855	4,711	4,723	5,272	5,851	6,451	6,744	53,781
<b>Total</b>	5,100	5,104	4,969	4,855	4,711	4,723	5,272	5,851	6,451	6,744	53,781

Export To Excel      Print

# Information about query results

## Changing rate calculations

All rates in DMED query results are calculated per 1,000 persons per year and rounded to two decimal places. When a rate is calculated to less than .01 per 1000, the rate is displayed as <0.01. In such instances, an exact rate can be manually calculated by viewing the results in count tab and dividing that number by the corresponding population tab person-time count. The formula is:

$$\text{Rate} = \text{counts} / \text{person-time} * 1000$$

DMED provides the ability to change the scale of the rate calculation through the drop down box at the bottom of the **Results** tab.

ICD Codes: 290 - 319 MENTAL DISORDERS  
 Service: All  
 Grade: All  
 Data Sources: Hospitalizations Ambulatory Data Reportable Events  
 Gender: All  
 Marital Status: All

Query Type: ICD-9 Based Query 1990 - Sep 2015  
 Age: All  
 Time: 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015  
 Condition: Primary Diagnosis  
 Race: All  
 Occurrence: All Occurrences

Counts Population **Rate** Line Chart Bar Chart

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Hospitalizations											
Ambulatory Data											
Reportable Events											
Army	12.82	15.86	17.11	19.58	19.02	21.47	21.20	18.05	16.27	15.75	17.82
Navy	6.74	7.81	8.18	8.60	9.23	9.70	10.40	9.61	8.91	9.66	8.86
Air Force	6.47	6.21	6.51	7.40	9.01	9.50	10.51	9.85	8.83	9.16	8.33
Marines	6.97	8.22	9.96	10.14	11.04	12.63	11.75	11.18	10.38	10.42	10.32
Total	8.91	10.49	11.48	12.82	13.30	14.76	14.88	13.15	11.90	11.93	12.38

Rate calculated in counts per 1,000 persons per year  
 Note: Population data for CY2015 only includes Jan - Sep for ICD-9 codes

Export To Excel Print

## Unknown / missing data

Unknown values are included in calculations for strata where **All** is selected. However, unknown values are not included in calculations for strata where multiple discrete values are selected.

## Small cell counts

DMED provides summary level data on groups of active component service members. It does not provide access to individual patient-level information. Because of this, DMED requires a minimum of 10 person years per table cell in order to calculate results. If less than 10 person years of data are available, results are not totaled and “\*\*” is displayed in the appropriate cell in the table.

DMED Home

Submit Query    Reset All    View History

Setup    ICD-9 Explorer    Population    Diagnoses & Occurrences    Location/Occupation    Display Config    Results

ICD Codes: 140 - 239 NEOPLASMS    Query Type: ICD-9 Based Query (1990 - 2015)  
 Service: All    Age: 35-39, >= 40  
 Grade: E1-E4    Time: 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015  
 Data Sources: Hospitalizations, Ambulatory Data, Reportable Events    Condition: Primary Diagnosis  
 Gender: Male    Race: White  
 Marital Status: All    Occurrence: All Occurrences

Counts    Population    Rate    Line Chart    Bar Chart

Hospitalizations	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Army	4	5	16	12	13	11	7	15	9	4	96
Navy	1	0	4	7	0	3	0	0	3	1	19
Air Force	0	0	0	0	0	2	0	1	0	0	3
Marines	0	0	1	0	0	0	0	0	0	**	**
<b>Total</b>	5	5	21	19	13	16	7	16	12	**	**

\*\* indicates a cell that has or is related to a cell that has < 10 Person-Years

Export To Excel    Print

# Additional Features

## Exporting data

To export the results of a query to a tab-delimited ASCII text file: Click the **Export** button on the Results screen. This file is easily migrated into commonly used spreadsheet programs (e.g. Excel) for further analysis, graphing and printing. When this option is selected, a file panel appears allowing you to select the directory in which to save the query results file.

## Printing results

Choose the **Print** button to print results screens.