DEPARTMENT OF VETERANS AFFAIRS

VETERAN POPULATION PROJECTION MODEL - VetPop2014

OFFICE OF THE ASSISTANT SECRETARY FOR POLICY AND PLANNING

OFFICE OF THE ACTUARY

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Executive Summary

Veteran Population Projection Model 2014

Department of Veterans Affairs
Office of Policy and Planning
Office of the Actuary

The Veteran Population Projection Model 2014 (VetPop2014) provides the latest official Veteran population projection from the Department of Veterans Affairs (VA). VetPop2014 is an actuarial projection model developed by the Office of the Actuary (OACT) for Veteran population projection from Fiscal Year (FY) 2014 to FY2043. Using the best available Veteran data by the end of FY2013, VetPop2014 provides living Veteran counts by key demographic characteristics such as age, gender, period of service, and race/ethnicity at various geographic levels.

VetPop2014 is the 7th generation of the OACT Veteran Population Projection Model with significant improvements in data, methodology, and modeling processes. Similar to the previous Veteran Population Projection Model 2011 (VetPop2011), it is a bottom-up model that projects future Veteran population at the county level as a starting point. The county level projections are then aggregated to provide Veteran information at larger geographic units such as congressional districts, states, and at the national level. The VetPop2014 actuarial model uses both Veteran record-level data and survey data from a wide variety of sources including VA, Department of Defense (DoD), U.S. Census Bureau, Internal Revenue Service (IRS), and the Social Security Administration (SSA). These data sources enabled OACT to develop the VetPop2014 Model using advanced actuarial and predictive modeling methods for three critical modules – the Separation Module, the Mortality Module, and the Migration Module.

Military separations from the Armed Forces provide new entrants to the Veteran population. Thus, the Separation Module is an essential component of the Veteran Population Projection Model. Based on DoD's annual military separation data from FY1980 to FY2013, the VetPop2014 Separation Module first developed a set of Time Series Models to project annual separations for various age and gender groups. Additionally, due to distinct differences in the characteristics of Active and Reserve Components, Time Series Models were developed for each of these two components' separations. The projected separations from Active and Reserve Components by gender and age groups were then aggregated to the national level. VetPop2014 then used historical county separation data based on VA administrative records along with migration information from the IRS to project the county level separation from FY2014 to FY2043 using predictive modeling techniques.

VetPop2014 also updated the Mortality Module from VetPop2011. Based on mortality data such as Veteran specific mortality from VA administrative data and U.S. population mortality data from SSA, VetPop2011

mortality projections were developed for each single year of age and gender using the Lee-Carter Model combined with credibility weighting and smoothing techniques. In contrast, VetPop2014 projected lower mortality rates than previous projections for older Veterans due to increasing longevity. As a result of the longevity changes, VetPop2014 projects a relatively larger future Veteran population.

The Migration Module at the county level is a critical component to the bottom-up VetPop2014 model. Similar to the VetPop2011 Migration Module, VetPop2014 Migration Module developed the county Veteran migration models for various age and gender cohorts using historical longitudinal data from VA, IRS, and American Community Survey. The VetPop2014 Migration Module made adjustments in the migration rates for older veterans in counties due to the availability of more creditable data. However, overall, the migration rate changes were minimal.

The 2014 Veteran Population Projection includes not only the living civilian Veterans, but also military Veterans who had separated from the military, rejoined the military, and are currently in the military service. Due to the latest data enhancements, the VetPop2014 projected more living Veterans in the future compared to VetPop2011. Overall, while the male Veteran population is projected to steadily decreases, woman and minority Veteran populations are projected to increase over the next 30 years. Another noticeable trend for the Veteran population is the projected higher growths in the Southern and Western regions.

For questions on VetPop2014 model, please contact the Office of Actuary via e-mail at VANCVAS@VA.GOV.

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Overview

Introduction

The Veteran Population Projection Model (VetPop2014) provides the official estimates and projections of the Veteran population for each year from September 30, 2013 through September 30, 2043. Data for the Model are combined from the Department of Veterans Affairs (VA), Department of Defense (DoD), and United States Census Bureau sources. This information is grouped into the following main categories: State, County, Age, Gender, Period of Service, Race/Ethnicity, Rank (Officer/Enlisted), and Branch of Service. Based primarily on a series of statistical analysis software (SAS) programs and Microsoft Excel models, the projection output tables are in a format that users can easily manipulate in Microsoft Excel.

History

VetPop2014 represents the seventh generation of VetPop models. The history of VetPop is shown in the following milestones:

- The original VetPop model, developed in the early 1990s before the Office of the Actuary (OACT) was established, relied heavily on data from the 1990 Census. Data from DoD's Defense Manpower Data Center (DMDC) provided information on monthly separations by Age, Gender, and State. At that time, the model ran on a mainframe computer at VA's Austin Automation Center.
- OACT's first population model was VetPop2000. Continuous enhancements were made in developing OACT's subsequent models: VetPop2001, completed in November 2001; VetPop2001Adj, completed in early 2003; VetPop2004, completed in December 2004; VetPop2007, completed in December 2007; VetPop2011, completed in December 2012; and VetPop2014, completed in October, 2014.
- The VetPop2000 and VetPop2001 models began relying more heavily on DMDC data to project the population of Veterans in the post-Vietnam era. Census data were used to determine the number of Vietnam-era Veterans (those who were age 39 or older on April 1, 1990, or who left service before May 8, 1975); DMDC data were used to determine the number of post-Vietnam Veterans (those who were age 38 or younger on April 1, 1990, or who left service after May 8, 1975).
- VetPop2001Adj (the official name is "VetPop2001 Adjusted to Census 2000") was a modification of the VetPop2001 model, with population totals adjusted to be consistent with the totals obtained from early releases of Census 2000 data (as shown in Summary File 3).
- VetPop2004 used more detailed Census 2000 data to provide more comprehensive and updated estimates and projections.
- VetPop2007 followed the same approach as the prior models. In addition to accounting for more recent military service data, state to state migration estimation was enhanced using the American Community Survey, and a summary table of Gulf War Veterans was introduced.

- VetPop2011 incorporated a new bottom-up modeling approach by projecting the Veteran population at the county level in contrast to prior models that were developed at the state level, which was subsequently allocated to county. In VetPop2011, based on the historical military separations from DoD, a Time Series Forecasting method was used to project the separations. Mortality rates were constructed from the Veteran specific rates from VA administrative data and general population rates from the Social Security Administration (SSA). Mortality projections were developed using the Lee-Carter Model combined with credibility weighting and smoothing techniques. County to county migration was modeled with longitudinal data from VA and Internal Revenue Service. County level projections by gender and five-year age groups were aggregated to provide Veteran information at larger geographic units such as congressional districts, states, and at the national level. In addition, Veteran characteristics such as Race/Ethnicity, Rank (Officer/Enlisted), Period of Service, and Branch of Service were derived from ACS and administrative data from VA and DoD.

What's New?

VetPop2014 is consistent with the previous model VetPop2011 in three respects. First, the baseline estimate of September 30, 2013, was based on the administrative data from VA and DoD and American Community Survey data (ACS). Second, county level modeling approach was used. Third, estimates and projections consisted of Veteran counts (custom tabulations) by single year of age, gender, county, state, and other characteristics. The new VetPop2014 model reflects an update of several data sources and several notable methodological enhancements.

- VetPop2014 incorporates more recent DoD data on actual separations through September 30, 2013.
- The county level population is projected by single year of age, instead of by age group in VetPop11.
- Mortality rates are updated from the latest VA and DoD administrative data and 2014 SSA mortality.
- Military Veterans are included in the Veteran population estimate using the baseline of September 30, 2013. (Military Veterans are those who had separated from the military, rejoined, and are currently in the military service as of September 30, 2013.)
- Projected Veterans by Congressional District for the 113th Congress are included.
- Race/Ethnicity, Rank (Officer/Enlisted), Branch of Service, and Period of Service projections are all updated by including more recent years of data from VA, DoD and ACS.

Input Data

Census 2000 and ACS

In VetPop2014, Census 2000 and ACS continued to serve as major data sources. Although the reference time of Census 2000 data is not so current, the data based on a significantly large sample size was determined to be useful especially in estimating and validation phase for older age groups. For modeling the baseline estimate at September 30, 2013 and for the migration study, special tabulations of the Veteran population by Age, Gender, Period of Service, and Race/ethnicity at the county level from ACS were used.

DoD

DoD data were used to estimate the number of Veterans separating through September 30, 2013 as well as for modeling future separations from military service. DoD provided person level information on separations from the regular military (Active Duty Component) and the Reserve Forces (Reserve Component).

The Active Duty Component data contains demographic and military data on all service members from the regular military who have separated from active duty since July 1, 1970. Coast Guard data is available beginning July 1, 1988. In recent years, the National Oceanic and Atmospheric Administration (NOAA) Corps and the Public Health Service (PHS) also became part of the file. The data on Active Duty service members are fixed as of the day of separation.

The Reserve Component data contains personnel information on all present and past members of National Guard and Reserve Forces. According to federal law, Veterans for purposes of receiving VA benefits and services are those who have been discharged from federal active duty. This excludes Reserve Forces whose only active duty was for training – unless disabled during training – and National Guard members whose only active duty was in state service. (You can find more detailed information on the Active Duty and Reserve components in the Data Sources section.)

VA

VA administrative data provided additional demographics and military service information that supplemented service member data from DoD. With the information from various VA benefits and services, VetPop2014 was able to incorporate more comprehensive representation of Veterans.

Model Components

VetPop2014 consists of three major modules: (1) the Separation Module, (2) the Mortality Module, and (3) the Migration Module. These modules are used for estimating and projecting Veteran population from the baseline at September 30, 2013 by the core demographics of age and gender at the county level. Additional characteristics such as Branch of Service, Race/Ethnicity, Period of Service, and Rank are modeled separately at the state or national level. These components are described in Overview Table 1.

Overview Table 1. VetPop2014 Model Components

Phase	Module	Purpose
Core Demographics		
	Separation Module	Project new entrants to the Veteran population
	Mortality Module	Project mortality rate
	Migration Module	Determine county to county migration
Characteristics		
	Branch	Project Veterans by Branch at the national level
	Race/Ethnicity	Project Veterans by Race/Ethnicity at the state level
	Period of Service	Project Veterans by Period of Service at the state level
	Rank (Office/Enlisted)	Project Veterans by Rank at the national level

Process

The VetPop2014 model consists of three processing phases: (1) baseline development, (2) core demographics modeling, and (3) additional characteristics development.

Baseline

The baseline phase utilizes administrative data from VA and DoD to count Veterans who separated through September 30, 2013. However, due to data limitation of incomplete military service data prior to mid-1970, Census 2000 and ACS data are also used to estimate Veteran population at the baseline, September 30, 2013.

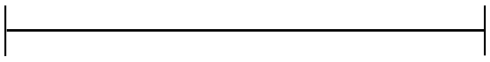
Core Demographics

In the core demographics development, thee critical modules are integrated to project Veteran population at the end of each of the fiscal years between 2014 and 2043. Starting with the Veteran population estimate from the baseline, the following steps are processed to project subsequent years' Veteran population for September 30, 2014, through September 30, 2043. The Office of the Actuary (OACT) determines the number of Veterans in the next year as shown in the equation below:

- start with the number of Veterans at the end of the previous year (for example,24-year-old males in a county for September 30, 2014)
- add new separations
- subtract deaths
- account for the county's net migration count

$$\textbf{Vets}_{t,a} = \textbf{Vets}_{t-1,\,a-1} + \textbf{Seps}_{fy(t,a-1)} - \textbf{Deaths}_{fy(t,a-1)} +/- \textbf{Migration}_{fy(t,a-1)}$$

where 't' represents time and 'a' represents age



t-1, a-1		t,a
9/30/2014	**FY15**	**9/30/2015**
24 yrs Living	*Separations, Deaths and Migration*	*25 yrs Living*

Additional Characteristics

In addition to the core demographics, VetPop2014 includes other characteristics of Veteran population such as Period of Service, Race/Ethnicity, Rank (Officer/Enlisted), and Branch of Service. Each of these characteristics is modeled separately, based on ACS and administrative data from VA and DoD, and then applied to the core demographic projections.

For example . . .

Here are some examples of how Veterans of certain era are projected:

- **A Veteran from the Korean Conflict** would be accounted for through ACS data, which would provide aggregate information on Age, Gender, and County. Other characteristics modules fill in information on Period of Service, Race, Branch and Rank. This information would then form a basis for the September 30, 2013 estimate. For the next projection year, each Veteran would be applied with annual probabilities for migration, mortality and then aged.
- **An OEF/OIF War Veteran** would be estimated by VA/DoD data, providing person level information on Age, Gender, Rank, and Branch. Other characteristics modules fill in information on Period of Service, and Race. In subsequent projection years, this Veteran is applied with annual probabilities of migration, mortality, and then aged.
- **A Post-2013 Veteran,** on the other hand, would be projected by Age and Gender in the Separation Module and then applied with annual probabilities of migration and mortality before being aged.

Output Files

The VetPop2014 model stores important model output in Microsoft Excel and creates a series of Microsoft Excel PivotTables. These tables give users an easy access to tabulations of model output and offer flexibility in the choice of row and column variables. A list of Excel PivotTables is provided in the Overview Table 2 below.

The Excel PivotTables are posted to the VA Internet (http://www.va.gov/vetdata/Veteran_Population.asp)

Overview Table 2. VetPop2014 National, State, County, Congressional District, and VISN

Table	Row	Column	Pages
The following are national tables.			
1	Age (15 Groups)	Year	Gender
2	Year	Period Of Service*	Gender
3	Year	Race/Ethnicity	Gender
4	Year	Branch of Service	Gender
5	Year	Officer/Enlisted	Gender
The following are state tables.			
6	State	Age (15 groups)	Gender, Year
7	State	Period Of Service*	Gender, Year
8	State	Race/Ethnicity	Gender, Year
The following are county, Congressional District, and Veteran Integrated Service Network level data			
9	FIPS, County Name	Year	State, Gender, Age (4 groups)
10	State, Congressional District (113th Congress)	Age (2 groups)	Gender, Year
11	VISN Number, VISN Name	Age (4 groups)	Gender, Year

* Differs from the "Period of Service" variable appearing in all other tables in that it contains subtotals of certain periods.

System/Software

The majority of the work was done in SAS in a PC environment, and Microsoft Excel was used in some modules and for characteristics developments.

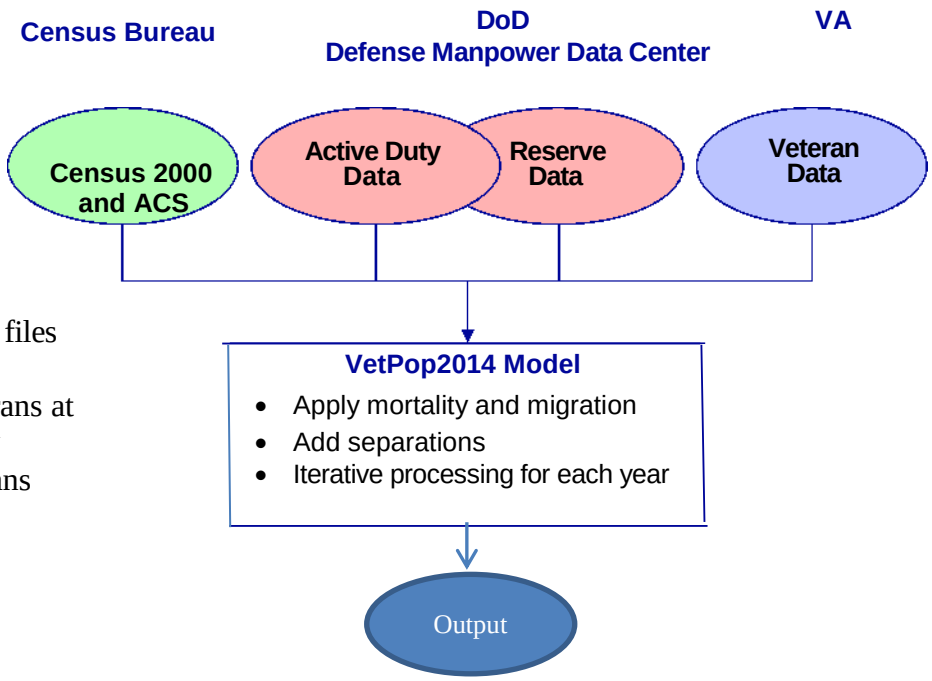
Data Sources

Introduction

This section (part of the VetPop2014 Technical Documentation) describes, in general terms, the model output and the sources of Veteran data used in the VetPop2014 model. The diagram below provides a simple representation.

Model Output

The final product for estimating and projecting the Veteran population from September 30, 2013 to September 30, 2043 is prepared in two formats – statistical analysis software (SAS) and Microsoft
Excel. The structure and use of the Excel files are found in the Tutorial document.
The output files contain the living Veterans at the following levels: county, state, 113th Congressional District (CD), and Veterans Integrated Service Networks (VISN).



The VetPop2014 Excel files are intended to ease user interaction for obtaining Veteran distribution by specific characteristics: Age, Gender, Race/Ethnicity, Period of Service, Branch, Rank (Officer/Enlisted), County, and State.

Data Sources

These are the main data sources for VetPop2014:

- Department of Commerce, Census Bureau – Census 2000
- Department of Commerce, Census Bureau – American Community survey (ACS)
- Department of Defense (DoD), Defense Manpower Data Center (DMDC) – Active Duty
- Department of Defense (DoD), Defense Manpower Data Center (DMDC) – Reserve
- Department of Veterans Affairs (VA) – Administrative data collection

A combination of Census 2000, ACS, VA, and DoD information was used to determine the Veteran counts by the specific characteristics listed under Model Output. While DoD data provided the actual separations and deaths through September 30, 2013, the information from VA was used to validate and supplement missing information. Additionally, Census 2000 and ACS data were incorporated to account for the older Veterans since DoD and VA data were limited by unavailability of electronic record technology in historic times. A few notable data highlights are described below.

Census 2000 Data

As part of the Census 2000, the Census Bureau published Veteran data in the Summary Files, SF3 and SF4. Because the Veteran distribution information in these files was not sufficient to meet VA's needs, the Census Bureau produced more detailed tabulations, based on the long form data, as requested by VA.

Highlights

Of the many tabulation files requested, a single file of Veteran data — aggregated by State, Age, and Gender — was referenced in the model validation.

- State data includes DC, Puerto Rico, and US Island Areas (Virgin Islands, American Samoa, Guam, and Northern Marianas).
- Age ranges from 17 to 90, where 90 represents ages 90 and over.
- Race is grouped into seven categories: Hispanic of any race, White Non-Hispanic, Black Non-Hispanic, American Indian Non-Hispanic, Asian Non-Hispanic, Pacific Islander Non-Hispanic, and Other or Multiple Race Non-Hispanic.
- Period of Service is categorized by the 13 periods specified by VA, distinguishing peacetime and war periods such as the Vietnam Era.

To address disclosure concerns, the Census Bureau rounded each cell in the files received by VA as follows:

- 0 rounds to 0
- 1– 7 rounds to 4
- 8 –12 rounds to 10
- above that, round to the nearest multiple of 5

American Community Survey Data

ACS is a nationwide survey conducted on an ongoing basis to provide the nation with demographic data on a yearly basis instead of every 10 years as in the Decennial Census. In VetPop2014, ACS data served as a major source for baseline estimation, county to county migration study, modeling of characteristics such as Race/Ethnicity and Period of Service, and model validation.

Highlights

For VetPop2014, VA obtained special tabulations about Veterans from ACS for the periods 2003 through 2012. The tabulations consisted of aggregated Veteran counts by State, County, Gender, Single Year of Age, and Age Groups.

- State data includes DC and Puerto Rico, whenever possible. 2010 Decennial Census was used to get the Veteran data for four Island Areas, American Samoa, Commonwealth of the Northern Mariana Islands, Guam, and Virgin Islands.
- Tabulations were rounded as in Census 2000 data.

Active Duty Data

Data on separations from active duty military components – reside in extracts from DMDC.

Highlights

The DMDC person level data used within VetPop2014 contains the following information: Date of Birth, Gender, Branch, Rank, Race, Activation and Separation dates, Date of Death, and Active status.

- Age at Separation is calculated from the Date of Birth and the Separation period. (Separation period indicates the respective fiscal year based on the separation date.)
- Period of Service is calculated from the Activation and Separation dates.
- Date of Death is verified with the Social Security Administration (SSA) Death file, which includes only the deaths that were reported to SSA.
- Active status indicates that the person was on active duty as of September 30, 2013.

Reserve Data

The Reserve data from DMDC contains information on Reserve and National Guard members. It includes those who were serving in the Reserve Forces as of September 30, 2013, as well as those who had served and then was discharged in the past. As such, the data include persons who completed their tour of duty, retired from service, or died before being discharged. In addition, all types of Reserves - Selected, Active/Guard Reserve (AGR), Military Technician, Individual Ready Reserve/Inactive National Guard, Standby Reserve, and Retired Reserve - are considered, but only those with presidential activation are counted as Veterans in VetPop.

Highlights

Individual level data obtained from DMDC provides information such as Age, Gender, Branch, Rank, Race,

Activation and Separation dates (from contingency data), Date of Death, and Active status.

- Age is calculated from the Date of Birth and the Separation period. (Separation period indicates the respective fiscal year based on the separation date.)
- Period of Service is calculated from the Activation and Separation dates.
- Date of Death is verified with the SSA Death file, which includes only the deaths that were reported to SSA.
- Active status is as of September 30, 2013.
- Veteran Status is determined using the Contingency data, which indicates a presidential activation such as Desert Storm, and thus a "Veteran" by VA's definition.

VA Data

The VA data, collected by National Center for Veterans Analysis and Statistics (NCVAS) from various sources of VA benefits and services, provided demographic and military service information that may not be included in the DoD data. To appropriately administer benefits and health care services, VA collects the necessary information to verify active duty military service as well as other criteria. Therefore, VA data can provide additional information on demographics and military service of Veterans that may not be fully represented in the DoD data.

Highlights

- VA data contains longitudinal information of military service that may not be included in the DoD data.
- Utilization of various VA benefits and services are included.
- County of residence is retained for most of those included in VA data.

How to Access VetPop2014 PivotTables

The Office of the Actuary in the Department of Veterans Affairs (VA) provides the official estimates of the Veteran population using the Veteran Population Model (VetPop). The current version, VetPop2014, contains estimates of the number of Veterans classified by selected characteristics for the 30-year time period between September 30, 2013 and September 30, 2043.

To access the VetPop2014 tables from the VA Internet, click the "Population" button under "Data & Statistics" or click "Veteran Population" in the left panel. At the "Veteran Population" page, see the box in the lower right corner ("Population Tables") to find links to downloadable Excel PivotTables (i.e., spreadsheet files) containing VetPop2014 estimates and projections. Select the appropriate geography for the population data that you need: nation, state, county, congressional district, and Veterans Integrated Service Network (VISN). Then, click on the linked word "Living" to download various tables.

Microsoft Excel

The VetPop2014 data tables are presented in a special Excel format known as PivotTables. Microsoft Excel describes a PivotTable as "an interactive table that quickly combines and compares large amounts of data. You can rotate its rows and columns to see different summaries of the source data, and you can display the details for areas of interest. You can use this report to analyze the data, make comparisons, detect patterns and relationships, and discover trends." If you need more detailed information about PivotTables than is shown in this document, click here.

Users who do not have Excel on their computers will not be able to view the Excel PivotTables. However, Excel Viewer is available free of charge from Microsoft. Excel Viewer will enable you to open, view, and print Excel workbooks but not to modify the default layout for the report. Click the following link to download this application with accompanying documentation.

Classification Variables Used in VetPop2014 PivotTables

VetPop2014 State and National data tables consist of eleven PivotTables classifying "living" Veterans in terms of …

- geography (nation, state, county, congressional district and Veterans Integrated Service Network (VISN),
- age (15 five-year age groups at the state, national, and VISN levels, two age groups for congressional districts, and four age groups for counties),
- gender (male, female),
- race-ethnicity (9 groups; 7 race groups and two race-ethnicity groups),
- period of service (22 overlapping and non-overlapping groups),
- branch of service (6 groups), and
- officer-enlisted status (2 groups).

Note that Veteran Integrated Service Networks (or VISNs) are VA health care regional planning and budgeting units consisting of multiple counties. There are 21 VISNs accounting for all the geographic area of the 50 states, the District of Columbia, Puerto Rico, and four Island Areas (American Samoa, the Commonwealth of Northern Marianas, Guam, and the Virgin Islands.) Note that VetPop2014 accounts for Veterans in the four Island Areas as well as Veterans living overseas (e.g., in France) as a single, aggregated group called "Island Areas & Foreign."

The next page is "Tutorial Table 1: Description of VetPop2014 PivotTables." For each of the eleven VetPop2014 PivotTables, this table shows all of the geography and classification variables and provides detailed notes that define classification groups and indicate general information about data sources.

Tutorial Table 1: Description of VetPop2014 PivotTables

Table #	Geography	Year	Age	Gender	Race-Ethnicity	Period of Service	Branch of Service	Officer/Enlisted
1L	Nation	2013-2043	15 x 5-year (a)	M, F				
2L	Nation					(e)		
3L	Nation				(d)			
4L	Nation						(f)	
5L	Nation							(g)
6L	State (h)		15 x 5-year (a)					
7L	State (h)					(e)		
8L	State (h)				(d)			
9L (i)	State, County		4 age groups (b)					
10L (j)	State, CD		2 age groups (c)					
11L (i)	State, VISN		15 x 5-year (a)					

Notes:

(a) In some nation (Table 1L) and state (Table 6L) tables, and in the VISN table (Table 11L), veterans are classified by fifteen, 5-year age groups: 17-19, 20-24, 25-29, ..., 80-84, 85+.

(b) In the county table (Table 9L) a 4-group age variable is used: 17-44, 45-64, 65-84, 85+.

(c) In the congressional district table (Table 10L) a 2-group age variable is used: under 65 and 65+.

(d) Tables 3L and 8L show classification by 9 race and race-ethnicity groups. The 7 race groups are: (White alone), (Black or African American alone), (American Indian and Alaska Native alone), (Asian alone), (Native Hawaiian and Other Pacific Islander alone), (Some other race alone), and (Two or more races). The 2 race-ethnicity groups are: (Hispanic or Latino of any race) and (White alone, not Hispanic or Latino). The data source for race-ethnicity classification is the American Community Survey.

(e) There are 9 period-of-service response options on the American Community Survey from which VetPop2014 period-of-service classification is derived. Respondents (veterans) are told to check all the response options (time periods) that apply; thus, there are (2^9 -1) or 511 possible combinations of time periods. A hierarchical POS assignment algorithm is used to reduce the 511 combinations down to the 20 overlapping and non-overlapping period-of-service groups shown in Tables 2L and 7L. Wartime and peacetime subtotals are also shown. The rules (a) "war trumps peace" and (b) "more recent period trumps less recent period" define the hierarchy used to create the relatively small number of groups.

(f) There are four military service branches: Air Force, Army, Marines, and Navy. There are also (a) "Non-Defense" which includes the Coast Guard, Public Health Service, and the National Oceanic and Atmospheric Administration and (b) "Reserve" groups.

(g) Table 5L classifies veterans into two groups, office and enlisted.

(h) In the state tables (Tables 6L, 7L, and 8L) "states" consist of the following geographies: 50 states, (District of Columbia (DC), Puerto Rico (PR), and a group of geographies called "Island Areas & Foreign." The Island Areas include four U.S. territories: American Samoa, the Commonwealth of Northern Marianas, Guam, and the Virgins Islands. "Foreign" indicates "all other geographical areas in the world."

(i) County classification is derived from VA administrative data as well as American Community Survey data. There are 3,149 "counties" in the 50 states (3,142 counties) plus DC (counted as a county), PR (counted as one county), the 4 Island Areas (each counted as a county), and Foreign (counted as 1 county). There are 21 Veterans Integrated Service Areas (VISNs) that are aggregations of counties.

(j) Congressional districts (CDs; n=435) correspond to the 113th Congress and are derived from a mapping of CDs to counties using American Community Survey data.

An Example of How to Use VetPop2014 PivotTables

How would one use the VetPop2014 PivotTables to get an estimate of the projected number of age 85+, male Veterans living in Los Angeles County, CA as of 9/30/2018? What follows is a sequence of steps where initially we download the VetPop2014 county-level data (Table 9L). Then, using PivotTable features, we isolate the cell that gives us the answer of approximately 23,000 Veterans.

1) Go to http://www.va.gov/vetdata/, and click the "Population" button under "Data & Statistics" or click the "Veteran Population" in the left panel.

2) Go to "Population Tables" in the lower right corner of the page. Under "County" open up the "County" folder by clicking the "+" sign. Now click "Living" that links to the Excel PivotTable of interest to us (i.e., Table 9L).

3) An Excel PivotTable titled, "Table 9L: VetPop2014 County-Level Veteran Population by State, 2013-2014" will open up. (Table 9L is a large file; so, downloading and opening it up might take a few minutes.) You may wish to save this file to your computer using "Save As …"

4) PivotTables have row and column variables as you would expect from any two-dimensional table. They also have "page" variables that can be used for third and higher table dimensions.

   In the upper left part of the PivotTable are the "page" variables, here: Age Group, Gender, and State. Start with Age Group by clicking on the small filter (down arrow) icon at the far right of the Age Group cell. Now, click the "Select Multiple Items" and then choose the check box for "85+." Finally, click the OK button. Your PivotTable now has only frequencies of age 85+ Veterans.

5) Repeat Step 4 for the two remaining page variables. Select males from the Gender page variable and California from the State page variable. Your PivotTable now has only frequencies of age 85+, male Veterans living in California.

6) The table is now ready to obtain the Los Angeles County estimate for projection date 9/30/2018. For visual ease, highlight row 27 for Los Angeles County where FIPS (in column A) is "06037." The "06" indicates California. Given state = 06, the three digits "037" indicate Los Angeles County.

7) Now, again for visual ease, highlight column H for estimates as of 9/30/2018.

8) The intersection of highlighted row 27 and column H occurs at cell H27. The number in this cell is 23,111.

9) Given that we always round estimates in VetPop PivotTables to the nearest 1,000 so as not to imply a false sense of precision (i.e., in theory, there are standard errors on these estimates), we conclude that …

"Based on VetPop2014, we expect about 23,000 age 85+, male Veterans to be living in Los Angeles County, CA as of 9/30/2018."

Online Training in the Use of Excel PivotTables

By far the best way of learning about the use of Excel PivotTables (as well as many other features of Excel) is by viewing videos online and pausing the video to practice various manipulations. There are many Excel training websites. One excellent site is here.

You can sign up for email notification by Excel Jet for training on various topics. Here is the PivotTable training at Excel Jet.

For questions, please contact the Office of the Actuary via e-mail at VANCVAS@VA.GOV

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