VetPop2018: A Brief Description

The Department of Veterans Affairs (VA) completed a new Veteran Population Projection Model, VetPop2018, which is planned for public release in May 2020. The model will be used by the Office of Enterprise Integration (OEI) as well as other VA offices for strategic, long-term planning and to understand demographic characteristics of Veteran population. This paper summarizes the design, data sources and results of the new model. Details of all aspects of the development and content of the model are available from the Analytics Service in the Office of Data Governance and Analytics in OEI. Extensive documentation is being prepared and is expected to be available by August 2020.

VetPop2018 is the latest in a series of Veteran Population Projection Models that provide data widely used both inside and outside VA as the official estimate and projection of the total number of Veterans and their demographic characteristics. The new model maintains the general approach from the prior model, VetPop2016, and incorporates more recent survey data from the American Community Survey (ACS) (U.S. Census Bureau 2018) and administrative data from VA and the Department of Defense (DoD).[1]

What's New

- The model incorporates more recent survey data, 2018 ACS, in the baseline population estimation and projection of additional characteristics of race, ethnicity, and period of service.
- The VetPop2018 estimate of the starting population is about 700,000 higher than the VetPop2016 projection, mainly due to additional Veterans identified in USVETS, the integrated database of VA and DoD administrative information.
- The model incorporates more recent administrative data on actual separations through 9/30/2018, that are identified in USVETS 2018.
- Migration assumptions are updated using state-level migration data from USVETS reflecting more recent migration trends.
- An adjusted ratio method is used to allocate state level projections to counties, as was done for VetPop2007 and earlier models.

Methodology

VetPop2018 is a deterministic population projection model that estimates and projects the living and deceased Veteran population at the end of each Federal Fiscal Year (FY) from 2018 to 2048. Using the best available Veteran data at the end of FY2018 as the base population, living and deceased Veteran counts are projected by key demographic characteristics such as age and gender at various geographic levels for the next 30 years.

[1] See the Major Data Sources section for a description of these and other sources.

VetPop2018 estimates the starting population count at the baseline date, 9/30/2018, and projects 1 year at a time by accounting for mortality, migration and separation assumptions. The first task of baseline estimation involves selecting the qualifying records from USVETS to ensure only those with valid identity and active duty service, other than training, are included. To supplement for limitations in the USVETS administrative data, ACS estimates of Veteran population are blended with the USVETS extract summary. The blended data serve as the estimated living Veteran population at the end of FY2018. The Veteran population counts so obtained represent the end of subsequent FYs are then adjusted by subtracting deaths, applying net-migration assumptions and then adding new military separations. Iteratively, the Veteran population is projected for each subsequent fiscal year to obtain projections for 30 fiscal years. Each year's projections are at the national and state levels by the core demographics of age and gender. Additional characteristics including race, ethnicity, period of service, officer status, and branch of service are projected by allocating the respective national or state projections. Race, ethnicity, and period of service projections are available at national and state levels. Officer status and branch of service projections are available at the national level.

For each projected year, the state level projections by age and gender are allocated to counties using general population trends obtained from Woods & Poole Economics (W&P) (Woods&Poole Economics 2018). We also account for impacts of military base installations and foreign-born population in each county.

Key Assumptions

Mortality assumptions are based on Veteran mortality information from USVETS and U.S. general population mortality data from the *2019 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (2019 OASDI Trustees Report) (Board of Trustees 2019) which is produced by the Social Security Administration (SSA). Mortality projections are developed by single year of age and gender by blending the mortality rates between VA and SSA. The blended mortality rates are then smoothed and projected for the next 30 years using implied mortality improvement factors from the 2019 OASDI Trustees Report.

Migration assumptions are developed using Veteran migration information from USVETS. We analyzed the migration data for fiscal years 2005 through 2017 (migration years 2005-2006 through 2016-2017) to obtain 5-year weighted moving averages starting with migration year 2012-2013. Given the relatively small amount of migration, net migration at the state level by age group and gender is modeled for VetPop2018. Previously in VetPop2016, net migration at the county level by age group and gender was used. However, that assumption was based on Internal Revenue Service (IRS) data for an older time frame, 2000 to 2009, and access to IRS data is not available for our model update. Another possible source of migration data is ACS, but to represent all counties, a broader time frame of 5-year ACS data would need to be used in addition to other survey related issues, such as small sample size, high variability, and respondent-reported Veteran status. For these reasons, the VetPop2018 migration assumption is developed from USVETS.

Separation assumptions account for future military separations from the U.S. Armed Forces. Projected separations by the DoD's Office of the Actuary for the military services (Army, Air Force, Navy, and Marine Corps) are used as the main driver of future separations and are assumed to reflect projected changes in future military strength by fiscal year. For separations from non-DoD agencies (Coast Guards, National Oceanic and Atmospheric Administration, and U.S. Public Health Service) and federally activated National Guards and Reserves, historic information in USVETS is used in estimation.

For county-level projections, the change in ratio of Veterans to the general population in the projection years relative to the ratio at baseline date is the same for both the county level and the state level. Also, counties with higher percentages of Armed Forces personnel or lower percentages of foreign-born may have more Veterans than other counties.

Major Data Sources

The U.S. Veterans Eligibility Trends and Statistics (USVETS) database, also produced by the Analytics Service in the Office of Data Governance and Analytics, is a collection of datasets made from the integration of Veteran information from the benefits and services administered by VA with military separations data from the Department of Defense to support department-wide analyses on the Veteran population. Although much of the Veteran population is represented by the two data sources, information on some Veterans who have not had a relationship with VA and who served only prior to 1970, is not complete.[2] This limitation may explain the higher estimates by the ACS of Veterans at older ages. Another limitation is related to geography. For the Veterans included in the integrated data, information on their residence may not be available or current as not all Veterans are required to report or update such information with VA.

GORGO projections (Department of Defense Office of the Actuary 2017) from the DoD's Office of the Actuary are the main source of data for projecting future Veterans. They include projected separations by age, officer status, length of service, and type of separation from active military duty for each projection year.

The American Community Survey is an ongoing annual survey by the Bureau of the Census conducted in every county across the nation, including every municipality in Puerto Rico. As the largest nationally representative survey in U.S. with a sample of about 3 million households each year, the ACS collects essentially the same detailed demographic, social, economic, and housing information previously collected every ten years on the decennial Census long-form questionnaire. In VetPop models, ACS has been used as a benchmark and incorporated into baseline estimations in a way that recognizes differences between survey data and administrative records. In ACS, Veteran status is self-, or proxy reported while administrative records contain empirical indicators of Veteran status. Also, due to a 2-month residence rule in ACS, the survey universe is different than administrative records, with an undercount of people who are highly mobile. Finally, the ACS has a smaller sample size and thus ACS estimates can

[2] In 1973, historic information was destroyed in a fire at the National Personnel Records Center. https://www.archives.gov/personnel-records-center/fire-1973

have high variability, particularly for less populated areas. Despite these differences, the ACS is a high-quality benchmark for Veteran data.

Selected Results

VetPop2018 estimates 20.3 million living Veterans at the baseline of 9/30/2018, which is about 3.7% higher than the corresponding VetPop2016 projection. The estimate is higher because with the 2018 version of USVETS approximately 1 million additional persons were determined to be very likely Veterans. This change has also affected the comparison with ACS. The VetPop2016 estimate of baseline population was 1.8 million higher than the 2015 ACS 1-year estimate. For the release of VetPop2018, it is about 2.3 million higher than the 2018 ACS 1-year estimate.

Over the next 30 years, the total Veteran population is projected to steadily decrease (-1.7%) while the women Veteran population is projected to increase slightly (+0.3%). In comparison, VetPop2016 had projected steady decline (-1.8%) for total Veteran population and a slight increase (+0.6%) for women Veterans.

At the state level, revised migration estimates resulted in minimal changes in the projected state distribution. For example, in FY2045, the difference in state percent distribution between VetPop2018 and VetPop2016 is almost 0 percentage points for 46 states. The difference is -1 percentage point for 2 states and 1 percentage point for 4 states. The difference in out-years is more noticeable at the county level since VetPop2018 uses state-level migration estimates and general population projections. For future VetPop model updates, we are pursuing county-level migration data through the U.S. Census Bureau to revisit the approach of more direct projection at the county level.

Conclusion

VetPop2018 is the 9th generation of the Veteran Population Projection Model with improvements in data and model update process. The main data source of USVETS continues to improve in terms of data quality and increased coverage of the Veteran population.

For questions on the VetPop2018 model, please contact the Analytics Service via e-mail at VANCVAS@VA.GOV.

References

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