

Veteran Population Projection Model 2011

Department of Veterans Affairs

Office of the Actuary

The Veteran Population Projection Model 2011 (VetPop2011) provides the latest official Veteran population projection from the Department of Veterans Affairs (VA). VetPop2011 is an actuarial projection model developed by the Office of the Actuary (OACT) for Veteran population projection from Fiscal Year (FY) 2011 to FY2040. Using the best available Veteran data by the end of FY2010, VetPop2011 provides living Veteran counts by key demographic characteristics such as age, gender, period of service, and race/ethnicity at various geographic levels.

VetPop2011 is the 6th generation of the OACT Veteran Population Projection Model with significant improvements in data, methodology, and modeling process. Unlike prior generations, VetPop2011 is a bottom-up model which 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 VetPop2011 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's American Community Survey (ACS), Department of Treasury's Internal Revenue Service (IRS), and the Social Security Administration (SSA). These data sources enabled OACT to develop the VetPop2011 Model using advanced actuarial and predictive modeling methods for three critical VetPop2011 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. VetPop2011 Separation Module first used annual military separation data from DoD between FY1975 and FY2010, and then developed a set of Time Series Models (ARIMA and the Multiplicative Winters models) to project annual separations for various age and gender groups. The Time Series Models were also developed separately for separations from Active Duty and Reserve Components due to the distinct differences in the characteristics of the two groups. The projected separations from Active Duty and Reserve Components by gender and age groups were then aggregated to the national level. VetPop2011 Model 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 FY2011 to FY2040 using predictive modeling techniques.

The VetPop2011 Mortality Module uses mortality experience data that includes Veteran-specific experience from VA administrative data and U.S. population experience data from SSA. Mortality projections are developed for each single year of age (17 and up) and gender using the Lee-Carter Model combined with credibility weighting and smoothing techniques.

VetPop2011 projected lower mortality rate for older age Veterans due to longevity improvement. As a result of the longevity improvement, VetPop2011 projected a relatively larger Veteran population in the future than earlier generations of VetPop models.

The Migration Module at the county level is a critical component to the bottom-up VetPop2011 model. The OACT team developed the county Veteran migration models for various age and gender cohorts using historical longitudinal data from VA, IRS, and ACS. Key factors for Veteran migration were developed using predictive modeling techniques and nonlinear logistic regression modeling techniques to project county-level Veteran migration by age and gender. The VetPop2011 Migration Model has shown that Veteran migration varies at the county level due to the costs of living and the unemployment rates of the county.

With the significant enhancement of data and advanced modeling methods, the VetPop2011 projected more living Veterans in the future compared to previous projections from earlier VetPop models. The projected Veteran population increases include both the women Veteran and minority Veteran populations. Compared to the overall U.S. population, the Veteran population is getting younger, especially for the male Veterans. Another noticeable trend for the Veteran population is the projected higher growth in the Southern and Western regions.

For detailed discussion of the VetPop 2011 Model, please refer to the OACT VetPop2011 Report to be released in early 2013.

For questions on VetPop2011 model, please contact the Office of Actuary:

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