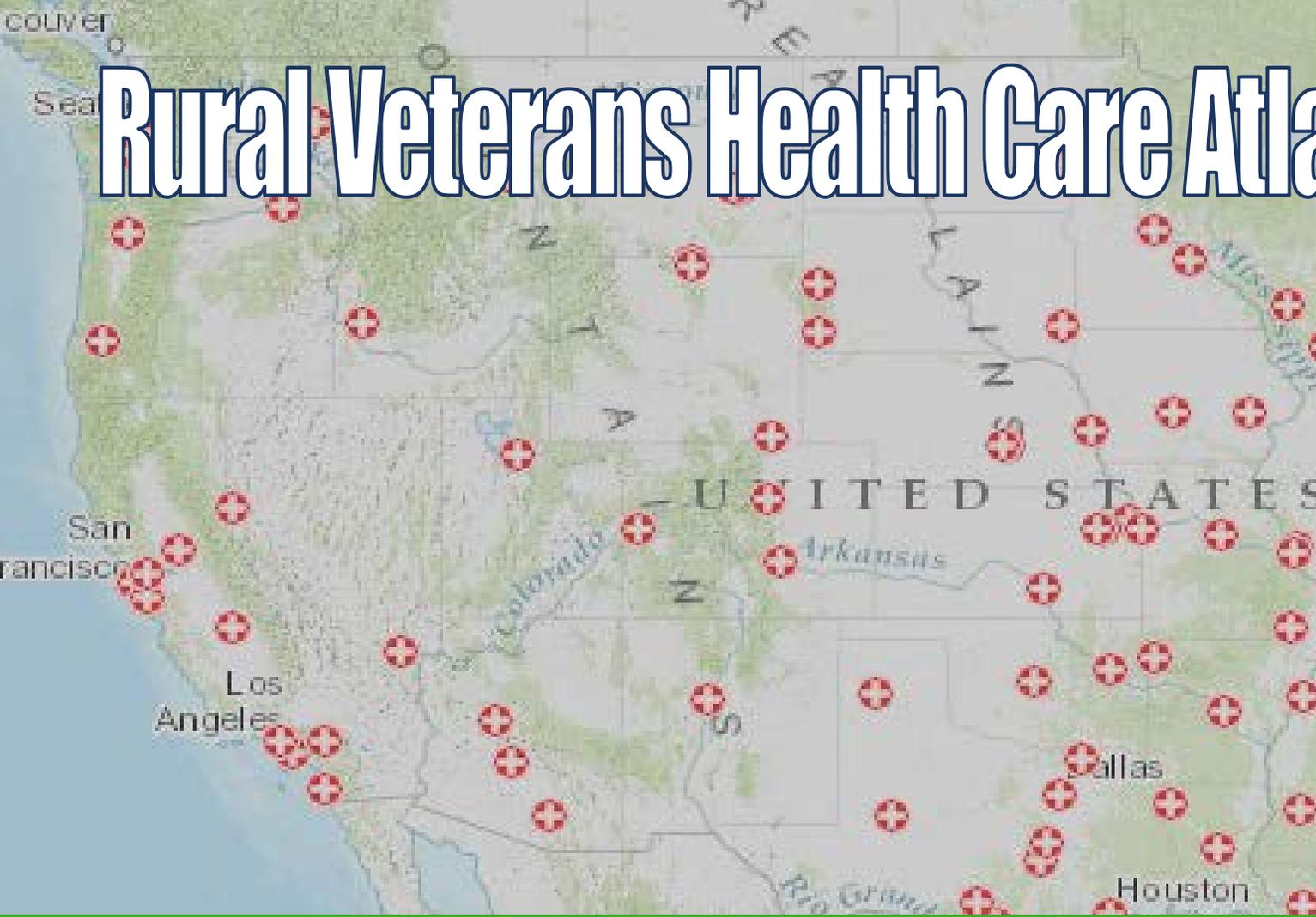


Rural Veterans Health Care Atlas



2nd Edition - FY 2015

PRODUCED BY THE
GEOspATIAL OUTCOMES DIVISION
VHA OFFICE OF RURAL HEALTH
U.S. DEPARTMENT OF VETERANS AFFAIRS





We are pleased to present the second edition of the Rural Veterans Health Care Atlas, a comprehensive resource guide produced by the GeoSpatial Outcomes Division (GSOD) located at the North Florida/South Georgia Veterans Health System in Gainesville, FL. Effective October 1, 2016, our interdisciplinary team operates directly under the Veterans Health Administration (VHA) Office of Rural Health (ORH) located in Washington, D.C. Dr. Diane Cowper Ripley founded the GSOD in 2007 when ORH was created in order to better serve rural Veterans. Dr. Cowper Ripley has been the team leader, particularly inspired by a pivotal effort to produce the first VHA Health Care Atlas, first published in 2003, followed by updated editions produced in 2005 and 2010. This served as precedence for the content of the first edition of Rural Veterans Health Care Atlas series, which addressed disparities in the availability of health care to Veterans living in rural areas of the United States. Our team members, who come from a variety of educational and professional backgrounds, each bring unique talents to the production of this series. This resource guide is designed to assist VA researchers, planners, and policy decision makers formulate best practices and programs to enhance delivery of health care to rural Veterans.

This second edition focuses on information and data from Fiscal Year 2015 (October 1, 2014 to September 30, 2015). It builds on the content delivered in the first edition

which reflects VHA data from the previous fiscal year. It is important to note that since the start of FY-2015, several critical changes took place affecting VHA operations, planning and policy, including enactment of the Veterans Access, Choice and Accountability Act of 2014, which directed the establishment of the Veterans Choice Program,¹ changes to the definition of 'rurality' from a census-based to RUCA-based system,^{2, 3} and changes to the site extraneous classifications based on the guidelines established the Continuum of Care workgroup.⁴ The previous first edition from FY-2014 contained data from legacy systems; therefore this updated edition to the series is the first to reflect the vast organizational changes and its resulting impact on the delivery of health care to rural Veterans.

Staff Biographies

Diane C. Cowper Ripley, Ph.D.

Dr. Cowper Ripley received her Ph.D. in Health Services Research from the University of Florida. She has used geographic information systems (GIS) tools for over 25 years, beginning with two early studies to identify Veteran interstate migration patterns and the impact that Veterans' relocation had on VHA service utilization in the 1980s and 1990s.⁵⁻⁹ Her later GIS work included developing the first VA Health Care Atlas¹⁰⁻¹¹ and leading a project that identified VHA rehabilitation services



Project Team



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access issues for traumatic injured OEF/OIF Veterans.¹² She has also conducted studies using GIS tools to examine access and utilization for Veterans with disabling conditions, including stroke and multiple sclerosis.¹³⁻¹⁵ Since advancing to her current position as the Director of the GSOD in 2008, Dr. Cowper Ripley has utilized many of the techniques and methods mastered in her past research to examine access and utilization issues for Veterans in rural and highly rural areas of the United States and Territories. Dr. Cowper Ripley is also a Site Co-Director for the HSR&D-funded Center of Innovation on Disability and Rehabilitation Research (CINDRR).

Justin K. Ahern, B.A.

Mr. Ahern is a Geographer/GIS Analyst and has been employed with the VHA since 2012, where he has served as a research coordinator in the HSR&D-funded CINDRR. Prior to employment at the VHA, Mr. Ahern was employed as a Geospatial Analyst with Northrop Grumman Corporation in their Advanced GEOINT Operating Unit for 8 1/2 years. He was instrumental in the production of a variety of high-profile GEOINT map and imagery products and services that supported military, government, and civil works programs. Mr. Ahern joined the GSOD team in FY-15 and brings a diversity of skills and experiences that satisfy the GSOD's mission of supporting both Research and Operations related to

improving access to health care for rural Veterans. In addition to his significant contributions to the Rural Veterans Health Care Atlas series, Mr. Ahern also serves as the quantitative data manager and program evaluation coordinator for the ORH-funded Rural Veterans Coordination Pilot (RVCP) grant program.

Eric R. Litt, B.A.

Mr. Litt is a Geographer/GIS Analyst and has been employed with the VHA since 2006. Mr. Litt has a strong interest and deep commitment to assisting our Veterans. He and Dr. Cowper Ripley headed up the ORH Broadband Initiative, and Mr. Litt recently incorporated the FCC/NTIA 2014 updates to determine what and where broadband services are available for use in VHA Telehealth Services throughout the nation. He is also responsible for compiling and geo-coding non-VA healthcare services across the country, such as Military Treatment Facilities (MTFs), Rural Hospitals (RHs), Critical Access Hospitals (CAHs), Rural Health Clinics (RHCs), Federally Qualified Health Centers (FQHCs), AHA-associated Community Hospitals (AHAs), and Indian Health Services (IHS) for use in numerous projects that require this information, including those in which VA is looking for potential partnerships. He was recently heavily involved in the data compilation and map production of the first edition of the Rural Veterans Health Care Atlas.



Lauren K. Wilson, B.S.

Ms. Wilson has been employed with the VHA since 2009 as a GIS Analyst with the GSOD, and also acts as GSOD's Program Coordinator. Her main focus is geospatial analyses and geostatistics and their myriad uses for evidence-based research and policy influence for meaningful change in access for Veterans to health care. She, along with Mr. Litt and Dr. Cowper Ripley, are members of the 10P GIS Healthcare Support and Services (GHES) group which is an organization created by and for the VHA 10P Program Office, "complementing and leveraging a robust healthcare centric Enterprise Geographic Information System (GIS) to foster teamwork, enhance analyses, and advance the use of spatial data to assist decision-making within the VHA and beyond." Ms. Wilson is editor of the GHES quarterly newsletter, sits on the GIS Advisory Board for the 10P GHES ELA Initiative, and participates in a number of other workgroups and committees dedicated to standardization of policies and procedures involving GIS and data continuity.

Contact Us

To learn more about the GeoSpatial Outcomes Division (GSOD), please visit our VHA SharePoint Page here: <https://vaww.vha.vaco.portal.va.gov/sites/RuralHealth/GSOD/default.aspx>

For inquiries and requests regarding geospatial products and services, please contact VHA10P1RORHGSOD@va.gov or submit a GIS services request here: <https://vaww.vha.esp.va.gov/sites/ruralhealth/GSOD/MapServReqs>

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Project Team



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NOTE: This is an internal VA website and is not accessible to the public.

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Preface



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Introduction and Background

The Veterans Health Administration (VHA) within the Department of Veterans Affairs is the largest healthcare system in the United States. VHA facilities -- located from coast to coast in the contiguous United States, Hawaii, Alaska, Puerto Rico, and sites of care around the vast Pacific Rim-- provide health services to VA enrollees and eligible Veterans throughout the continuum of care. VA has electronically captured data on the VA patient population for decades and the massive amounts of data available can be overwhelming to individuals who need to utilize and make data driven decisions. With the production of the *VA Health Care Atlas, FY-2000* published in 2003 and, more recently, the *Rural Veterans Health Care Atlas 1st Edition, FY-2014* published in late 2015, information was synthesized to assist individuals such as field researchers, planners, and leadership staff with their frequent data and information requests. The particular emphasis of this series, in line with the mission of the VHA Office of Rural Health founded in 2007, is on enhancing health care access and delivery to our nation's rural Veterans. Access to care has also become an important focus for the VHA community, particularly with enactment of the VACAA and the Choice Program.

Purpose and Objectives

The *Rural Veterans Health Care Atlas 2nd Edition FY-2015* will function as an updated comprehensive resource guide to enhance knowledge of rural Veterans, rural enrollees, and rural patients and their health care needs. The resource guide includes tabular data with FY-2015 statistics, as well as maps created using current GIS technology to display geographically relevant information. GIS is an interdisciplinary computer-based tool for organizing and displaying data. Moreover, it can be used to examine population-level effects of services as reflected in geographic and spatial distribution of populations and allows predictive modeling. It can also associate, for example, patients with the nearest medical facility or provider, locate under-served areas, measure access to care (distance/travel time) to medical facilities in a Veterans Integrates Service Network (VISN), and many other analyses relevant to VA. GIS has been used in the health care industry for epidemiological studies, disease tracking, program evaluation, epidemic outbreak investigations, site location and patient distribution analyses, and community needs assessment.

Methodology

Tabular data were extracted from the VHA Support Service Center (VSSC) and other various data warehouses. For this edition, the level of aggregation used to display tabular information is by U.S State or Territory. Data at the VISN level will not be used at this time due to the current reorganization of VISN



boundaries as part of the **MyVA** Realignment, announced by the Acting Deputy Under Secretary for Health for Operations and Management (10N). The plan, announced on January 26, 2015, will include a restructuring of the 21 VISNs to be modified and reduced to 18, to fit in with the five Department level-districts¹. Integration of affected VISNs will take several months and longer than one year in some cases, so the maps and tables in this edition will exclude VISN data.

The maps in this Atlas will be displayed at national scale and zoomed in U.S. Census region scales by State and county level geographic units. These units provide sufficient detail to assess patterns in VA, while at the same time protect patient confidentiality and privacy. To comply with VA privacy standards, the team created maps that combined the number of *rural*, *highly rural*, and *insular island* patients and Enrollees, as *highly rural* and *insular island* generally represent very low numbers. It was crucial especially in chapters that outline patient and Enrollee data to ensure that patients in a low number group could not be identified at any geographic level of detail. Further measures taken to ensure privacy will be to place an asterisk (*) in any tables where the number (or in some cases, proportion) of unique patients and Enrollees is *less than 3*, no matter what level of aggregation.

When creating the maps, the team used break values to display different value ranges with particular symbology, which breaks down values in a dataset into quartiles, or four different classes of statistically equal values. The

ArcGIS Desktop program used to create the maps computed the data and selected these values. If the first set of values of the four classes contained *less than 12* patients or Enrollees, the team then selected three classes, which divided the dataset into thirds, instead of quarters. If the first of three class values still contained *less than 12* patients or Enrollees, two classes were then selected. If the first of two class values still contained *less than 12* patients or Enrollees, then the specific field in the attribute data table was examined. If *less than 80%* of the States or counties contained *less than 12* patients or Enrollees (for example, if *fewer than 2,582* out of the 3,227 counties in the U.S. had *less than 12* patients or Enrollees), then two manual break values would be used: the first class named 'LT 12' (patients or Enrollees) and the second class named '12 GE' (patients or Enrollees). Conversely, if *80% or more* of the States or counties contained *less than 12* patients or Enrollees (for example, if *2,582 or greater* out of the 3,227 counties in the U.S. had *less than 12* patients or Enrollees), then maps were not generated at that level of aggregation.

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