

OPEN

County-level Predictors of Growth in Community-based Primary Care Use Among Veterans

Sarah H. Gordon, PhD, MS,*† Erin Beilstein-Wedel, MA,‡ Amy K. Rosen, PhD,‡§ Tianyu Zheng, MS,||¶ Alan Taylor Kelley, MD, MPH, MSc,||# James Cook, MS,||** Sarah S. Zahakos, MPH,† Todd H. Wagner, PhD,††‡‡ and Megan E. Vanneman, PhD, MPH||¶**

Background: The 2014 Choice Act expanded the Veterans Health Administration's (VA) capacity to purchase services for VA enrollees from community providers, yet little is known regarding the growth of Veterans' primary care use in community settings.

Objectives: The aim was to measure county-level growth in VA community-based primary care (CBPC) penetration following the Choice Act and to assess whether CBPC penetration increased in rural counties with limited access to VA facilities.

Data and Sample: A total of 3132 counties from VA administrative data from 2015 to 2018, Area Health Resources Files, and County Health Rankings.

Analysis: We defined the county-level CBPC penetration rate as the proportion of VA-purchased primary care out of all VA-purchased primary care (ie, within and outside VA). We estimated county-level

multivariate linear regression models to assess whether rurality and supply of primary care providers and health care facilities were significantly associated with CBPC growth.

Results: Nationally, CBPC penetration rates increased from 2.7% in 2015 to 7.3% in 2018. The rurality of the county was associated with a 2–3 percentage point (pp) increase in CBPC penetration growth ($P < 0.001$). The presence of a VA facility was associated with a 1.7 pp decrease in CBPC penetration growth ($P < 0.001$), while lower primary care provider supply was associated with a 0.6 pp increase in CBPC growth ($P < 0.001$).

Conclusion: CBPC as a proportion of all VA-purchased primary care was small but increased nearly 3-fold between 2015 and 2018. Greater increases in CBPC penetration were concentrated in rural counties and counties without a VA facility, suggesting that community care may enhance primary care access in rural areas with less VA presence.

Key Words: Primary care, community care, VA-purchased care, provider supply, penetration rates

(*Med Care* 2021;59: S301–S306)

From the *Partnered Evidence-Based Policy Resource Center, VA Boston Medical Center; †Department of Health Law, Policy, and Management, Boston University School of Public Health; ‡Center for Healthcare Organization and Implementation Research, VA Boston Healthcare System; §Department of Surgery, Boston University School of Medicine, Boston, MA; ||Informatics, Decision-Enhancement and Analytic Sciences Center, VA Salt Lake City Health Care System; ¶Department of Population Health Sciences, Division of Health System Innovation and Research, University of Utah School of Medicine; #Department of Internal Medicine, Division of General Internal Medicine; **Department of Internal Medicine, Division of Epidemiology, University of Utah School of Medicine, Salt Lake City, UT; ††Health Economics Resource Center, VA Palo Alto Health Care System, Menlo Park CA; and ‡‡Stanford University Department of Surgery, Palo Alto CA.

This work was funded by the VA Office of Health Equity through the AcademyHealth Health Policy Scholars Program (Gordon) and VA Health Services Research and Development Service (SDR 18-318; Rosen/Vanneman/Wagner); RCS 97-401 (Rosen); RCS 17-154 (Wagner); and CDA 15-259 (Vanneman).

The authors declare no conflict of interest.

Correspondence to: Sarah H. Gordon, PhD, MS, Boston University School of Public Health, 715 Albany Street, Boston, MA 02118. E-mail: gordonsh@bu.edu.

Supplemental Digital Content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's website, www.lww-medicalcare.com.

Copyright © 2021 The Author(s). Published by Wolters Kluwer Health, Inc. This is an open access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

ISSN: 0025-7079/21/5906-S301

In 2014, Congress expanded the Veterans Health Administration's (VA's) capacity to purchase health care services for VA enrollees from community providers through the passage of the Veterans Access, Choice, and Accountability Act.¹ The "Choice Act" enabled Veterans to utilize care purchased by the VA if they lived further than 40 miles from a VA site with a full-time primary care physician, experienced hardship in obtaining care, or encountered wait times that exceeded a "reasonable period," generally considered to be 30 days.²

The Choice Act was especially important for Veterans residing in rural areas, where constrained provider supply, long distances to medical facilities, and limited transportation options and health care infrastructure often keep rural Veterans from obtaining timely care.³ The goal of the Choice Act was to increase timely access to health services, including primary care, when barriers prevented access within a VA facility. Although Veterans have generally reported high levels of satisfaction with VA-provided care, VA enrollment, engagement, and population-specific needs potentially vary by sociodemographic factors, including rurality.^{4–9} Therefore, the context in which Veterans choose community-based

primary care (CBPC) has important policy implications for Veterans' access to care.

The goal of this study was to assess whether Veterans' use of CBPC services increased following the Choice Act, especially in rural areas with fewer VA resources. We focus on primary care because it is explicitly referenced in the Choice Act but has received less attention than specialty services in the literature to date. Using VA administrative data, community care (CC) claims, and county-level characteristics from 2015 to 2018, we first measure the proportion of all VA primary care utilization that is community based. We then examine changes in CBPC utilization after the Choice Act in rural areas (where VA enrollees are more likely to travel far distances to access a VA facility) and in areas without local VA facilities.

METHODS

Data and Sample

We used VA and CC outpatient data from the VA's Corporate Data Warehouse (CDW) from calendar years (CY) 2015–2018 to identify utilization of primary care within VA facilities and CBPC services. We used CY instead of federal fiscal years for our analysis so that we could link to county-level data organized at the CY level. The study sample included 7,145,400 VA enrollees in 3132 counties over the study period. Using county Federal Information Processing System codes, we linked county-level CBPC penetration rates to county-level economic, demographic, and provider supply variables obtained from the Health Resources and Services Administration (HRSA) Area Health Resources Files (AHRF) and County Health Ranking data compiled by the Robert Wood Johnson Foundation for the corresponding year or nearest year of data available.^{10,11}

Variables

We calculated the CBPC penetration rate as the proportion of all face-to-face VA primary care utilization in a given county delivered through CBPC, as follows: CBPC/(CBPC+primary care delivered in VA facilities). CBPC and VA-based primary care utilization was defined based on the Healthcare Common Procedure Coding System (HCPCS), Current Procedural Terminology (CPT) codes, provider taxonomies, and place of service codes for CC claims and encounter (or "stop") codes for VA claims. We defined primary care provider (PCP) taxonomies for physicians (internal medicine, geriatrics, family medicine, pediatrics, community health, and women's health) and advanced practice providers (nurse practitioners, physician assistants, clinical nurse specialists, and advanced practice registered nurses). Place of service codes included residential, home based, and outpatient primary care, excluding primary care received in an emergency department (see the Appendix for full list of codes, Supplemental Digital Content 1, <http://links.lww.com/MLR/C231>). We aggregated primary care utilization rates to the county level based on a Veteran's primary county of residence in each year. Our primary outcome of interest was the growth in CBPC rates between 2015 and 2018.

The county-level predictors of interest were rurality, PCP supply, and VA facility presence. From County Health Rankings, we obtained county-level ratios for primary care physicians and advanced practice providers to the county population. These ratios were combined and standardized to measure the number of PCPs (physicians or advanced practice providers) per 10,000 county residents. In the regression model, provider supply was included as a categorical variable in increments of 10 additional providers per 10,000 population. Because of missing provider supply measures, 2.8% (91 of 3223) of counties were excluded (primarily in Puerto Rico, Alaska, and the Virgin Islands—see Appendix 6, Supplemental Digital Content 1, <http://links.lww.com/MLR/C231>). We also assessed whether a VA Medical Center (VAMC) or VA Community-Based Outpatient Clinic (CBOC) was present in each county. Urban, rural, and highly rural county designations were obtained from the rural-urban commuting area codes which are based on urbanization, population density, and daily commuting.¹²

We adjusted for county-level covariates to account for differences between counties that are associated with primary care utilization. Among the entire county population, we assessed the unemployment rate, poverty rate, median household income, and Medicaid-eligible rate using the HRSA Area Health Resources Files. We also assessed the total county population size and the proportion of the county that included Veterans. Among the population of Veterans residing within a county, we assessed racial and ethnic characteristics and the proportion of Veterans over 65, enrolled in Medicare, and among Veterans enrolled in the VA, the proportion that had Nosos risk scores > 1, indicating greater likelihood of higher health care utilization.^{13,14} In descriptive

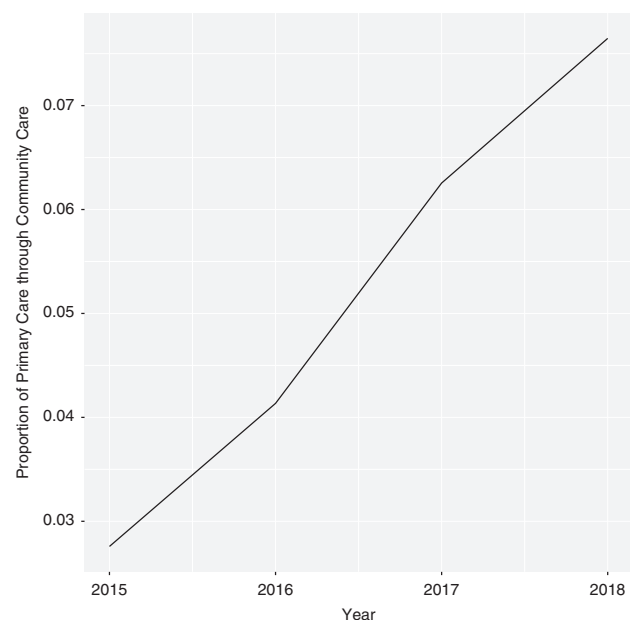


FIGURE 1. Mean proportion of county-level community-based primary care (CBPC), 2015–2018. Note: Each annual data point represents the average county-level community-based primary care penetration rates from 2015–2018 across all counties in the sample. Penetration rates are calculated as: CBPC visits/(CBPC visits + VA primary care visits).

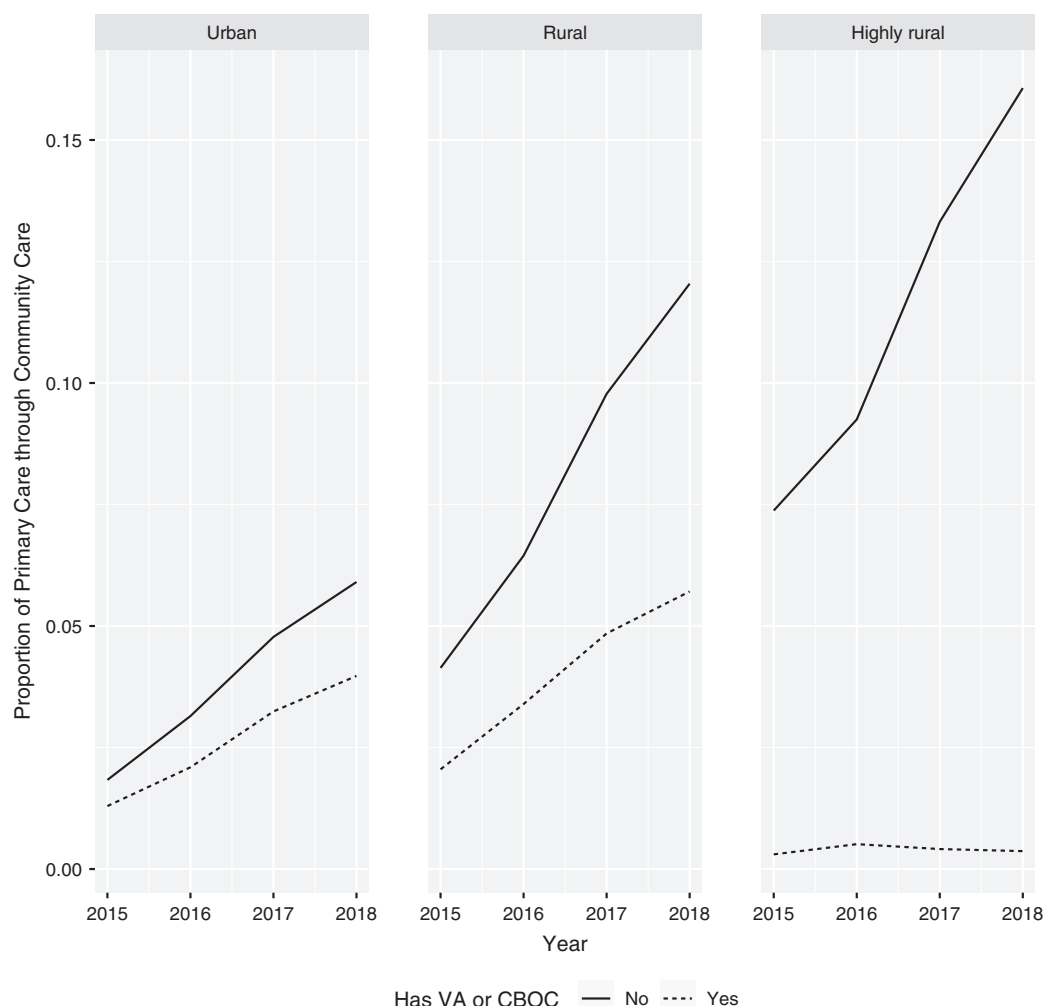


FIGURE 2. County-level community-based primary care (CBPC) penetration rates across urban, rural, and highly rural counties and presence of Veterans Health Administration’s (VA) facilities, 2015–2018. CBOC indicates Community-Based Outpatient Clinic.

analyses, we assessed whether all, part, or none of each county was a HRSA-designated Primary Care Professional Shortage Area for years 2015–2018.

Analysis

We first plotted CBPC penetration rates over each CY from 2015 to 2018 in aggregate and then stratified across urban, rural, and highly rural US counties and by the presence of one or more VA facilities in a county. We then computed county-level descriptive statistics stratified by high versus low growth in CBPC penetration between 2015 and 2018, defined as above or below the median growth rate [0.023 percentage points (pp)] across all counties.

We estimated a county-level multivariate linear regression model that predicted the association between PCP supply, VA facility (VAMC or CBOC) supply, rurality of each county and CBPC penetration rate growth between 2015 and 2018 conditional on the racial, ethnic, demographic, and socio-economic characteristics of the county and the county population size. Standard errors were clustered at the county level.

RESULTS

The vast majority (99.14%) of VA enrollees used some VA-based primary care (N=7,084,105), while 0.86% (N=61,295) of VA enrollees utilized only CBPC. Figure 1 depicts trends in the mean CBPC penetration across all counties in the sample from 2015 to 2018. The CBPC penetration rate increased from 2.7% in 2015 to 7.3% in 2018, representing a 2.7-fold increase. Over the study period, CBPC penetration rates increased 8.0 pp in highly rural counties, 7.1 pp in rural counties, and 3.4 pp in urban counties. Figure 2 shows unadjusted CBPC penetration rates across urban, rural, and highly rural counties, stratified by the presence of VA facilities. CBPC penetration rates increased 7.8 pp in rural counties without VA facilities compared with 2.8 pp in rural counties with VA facilities.

Table 1 provides county-level descriptive statistics stratified by high versus low CBPC penetration growth. On average, counties with faster CBPC penetration rate growth had smaller population sizes and were more likely to be rural or highly rural. Counties with higher CBPC growth were also less likely to have a VAMC or CBOC. The proportion of

TABLE 1. Characteristics of Counties With High Versus Low Growth in Community-based Primary Care (CBPC) Penetration (Based on Median Growth Rate), 2015–2018

Variable	Low CBPC Growth	High CBPC Growth	P	Effect Size
N, counties	1611	1612		
Characteristics of counties				
County population size, mean (SD)	153,974.01 (441,202.52)	48,463.77 (111,900.72)	< 0.001	0.328
County rurality, N (%)				
Urban	1334 (82.9)	992 (61.6)	< 0.001	0.488
Rural	159 (9.9)	330 (20.5)	< 0.001	0.399
Highly rural	115 (7.2)	289 (17.9)	< 0.001	0.330
Counties that have VA Medical Facilities, N (%)				
VA Medical Center	118 (7.3)	40 (2.5)	< 0.001	0.225
VA Community-Based Outpatient Clinic (CBOC)	423 (26.7)	232 (14.4)	< 0.001	0.279
VA Medical Center or CBOC	495 (30.7)	275 (16.4)	< 0.001	0.323
Counties with a primary care professional shortage area, N (%)	1310 (81.3)	1437 (89.2)	< 0.001	0.222
Primary care providers (PCPs) per 10,000 population, mean (SD)	10.91 (6.52)	10.63 (7.28)	0.254	0.041
Characteristics of county populations, mean (SD)				
County-level economic indicators				
County median household income in dollars	51,262.61 (13,903.81)	46,109.20 (10,065.64)	< 0.001	0.425
% of county living under the federal poverty level	16.80 (9.69)	16.72 (6.59)	0.789	0.009
% of county unemployed	5.86 (2.70)	5.62 (2.18)	0.007	0.095
Characteristics of veteran populations within counties, mean (SD)				
% of Veterans with Medicare coverage	65.48 (9.81)	69.19 (8.85)	< 0.001	0.397
% of Veterans > 65	57.75 (10.77)	61.59 (9.89)	< 0.001	0.371
Veteran race/ethnicity				
White	71.29 (17.13)	75.27 (13.56)	< 0.001	0.257
African-American/Black	11.66 (15.99)	6.87 (12.56)	< 0.001	0.333
American Indian/Alaska Native	0.91 (4.01)	1.05 (3.11)	0.262	0.039
Native Hawaiian/other Pacific Islander	0.68 (3.71)	0.50 (1.49)	0.065	0.065
Asian	0.37 (2.05)	0.20 (1.10)	0.003	0.103
More than one race	0.67 (1.19)	0.61 (0.73)	0.075	0.063
Hispanic	6.97 (20.17)	3.59 (9.08)	< 0.001	0.216
% of VHA enrollees with Nosos risk score > 1	25.75 (6.96)	24.64 (6.83)	< 0.001	0.161

CBPC indicates community-based primary care; VA, Veterans Affairs, VHA, Veterans Health Administration.

county residents who were Veterans did not differ across counties with high versus low CBPC penetration rate growth. Counties with low CBPC penetration rate growth had Veteran populations that were less racially and ethnically diverse than counties with high CBPC penetration rate growth; the Veteran population was also slightly younger and less likely to have Medicare coverage in low CBPC penetration rate growth counties. Differences in socioeconomic status across high versus low CBPC penetration rate counties were small.

As shown in Table 2, the presence of a VA facility in a county was associated with a -1.7 pp decrease in CBPC penetration rate growth between 2015 and 2018 ($P < 0.001$), whereas rural and highly rural county designations (vs. urban) were associated with a 2.0 and 3.0 pp increase in CBPC penetration rate growth, respectively, relative to counties designated as urban ($P < 0.001$ for rural and highly rural). An additional 10 PCPs per 10,000 population was associated with a 0.6% pp increase in CBPC penetration rate growth ($P < 0.001$).

DISCUSSION

In this county-level analysis of CBPC penetration rates from 2015 to 2018, we found that rural counties and counties without VA facilities experienced the largest increases in CBPC penetration following the Choice Act. Rurality of the

county was the strongest predictor of increased CBPC penetration rate growth, while the presence of a VA facility was associated with lower growth in CBPC penetration. These findings provide evidence that CC may increase primary care access in counties with residents likely to be eligible for CC: those that are largely rural and those that are not served by a local VA facility.

Prior studies have found that nationally, wait times for primary and most specialty care services either did not differ or were shorter in the VA compared with the community, while a study of Veterans' survey responses indicated access was better in the community for specialty care but similar for primary care and mental health care.^{15–17} Our findings complement this prior work by suggesting that rurality and local supply of facilities and providers are also important moderators of access to care following the Choice Act. We find that primary care use through community providers increased in areas where Veterans may have faced access barriers before the Choice Act—revealing geographic variations that can be difficult to detect in aggregate national analyses.

Our finding of relatively low (< 10%) levels of CBPC use overall is consistent with the VA's emphasis on the delivery of high quality and coordinated primary care services within the VA. The VA has invested in a robust system of primary care through programs such as Patient Aligned Care Teams (PACTs), the VA's patient-centered medical home

TABLE 2. Area-level Predictors of County-level Community-based Primary Care Penetration (CBPC) Growth, 2015–2018

Variable	Adjusted Coefficients	95% Confidence Interval
Characteristics of county or county population		
VA facility in county	−0.017***	[−0.023, −0.011]
Urban	(reference group)	
Rural	0.019***	[0.012, 0.026]
Highly rural	0.031***	[0.023, 0.039]
PCPs per 10,000 population	0.006***	[0.003, 0.009]
% Uninsured	0.002***	[0.002, 0.003]
% Medicaid-eligible	0.001*	[0.000, 0.001]
% of county population that are Veterans	0.002**	[0.001, 0.003]
% Unemployed	0.002*	[0.000, 0.004]
% Below Federal Poverty Level	0.001**	[0.000, 0.002]
Median household income per \$10,000	0.004*	[0.001, 0.008]
County population size	0.000	[0.000, 0.000]
Characteristics of county-level Veteran populations		
% of Veterans over 65	−0.002**	[−0.003, −0.001]
% of Veterans with Medicare	0.002***	[0.001, 0.003]
% of VA enrollees with Nosos risk score > 1	−0.001***	[−0.001, −0.000]
% of Veterans White	−0.001***	[−0.002, −0.001]
% of Veterans Black/African-American	−0.002***	[−0.003, −0.002]
% of Veterans American Indian/Alaska Native	−0.003***	[−0.004, −0.002]
% of Veterans Native Hawaiian/other Pacific Islander	0.006**	[0.002, 0.010]
% of Veterans Asian	−0.001	[−0.005, 0.002]
% of Veterans with more than one race	−0.003*	[−0.005, 0.000]
% of Veterans Hispanic	0.000	[0.000, 0.000]

SE clustered at the county level.
 PCP indicates primary care provider; VA, Veterans Affairs.
 * $P < 0.05$.
 ** $P < 0.01$.
 *** $P < 0.001$.

model, and geriatric and extended care programs.^{18–20} However, rates of CBPC penetration increased nearly 3-fold over the study period, signaling demand for CBPC particularly in areas without other VA facilities. These findings suggest that offering CBPC does not drive patients away from VA facilities, but instead grants access to an alternative source of primary care in areas with fewer VA resources. CBPC is likely to continue to grow under the 2018 Maintaining Internal Systems and Strengthening Integrated Outside Networks (MISSION) Act’s further expansion of CC.

While policymakers must weigh the costs of purchased CBPC against the costs of establishing and staffing new facilities in sparsely populated regions, there may be quality trade-offs in doing so.²¹ Prior work has demonstrated higher quality primary and preventive services delivered through the VA compared with a national random sample and Medicare populations.^{22,23} Results from patient experience surveys from 2016 to 2017 found that Veterans using primary care reported better overall provider rating, coordination, and communication scores for VA versus CC.¹⁷ We also find that CBPC penetration rates increased alongside the local supply

of PCPs, suggesting that these decisions should be informed by existing CBPC provider supply, in addition to other cost, quality, and access trade-offs.^{16,24,25}

This analysis has several limitations. First, the study is limited to the period following the Choice Act and therefore does not include more recent CBPC penetration rate changes following the MISSION Act. Relatedly, we do not observe utilization before the Choice Act and therefore cannot assess whether observed CBPC penetration growth reflects new access to primary care or a shift in care setting from VA facilities to the community or from other payers (eg, Medicare) to CC. Second, the study is conducted at the county level, which does not capture important individual-level predictors of community versus VA-based primary care, such as patient preferences, clinical conditions, or health status. Third, this is an observational study, and therefore the relationships between county-level predictors and primary care penetration rates cannot be interpreted as causal. Fourth, our analysis does not account for potential moderators of primary care access, such as wait times and tele-health access for VA and CC.

Finally, we do not comment on whether access to primary care is sufficient to meet patient demand in a given county, nor on the cost or quality of those primary care services. CBPC providers may lack training and experience in treating Veteran populations and may be ill-equipped to coordinate services with the large VA delivery system.²⁶ The VA’s Office of Community Care has developed tools to coordinate care and transfer information to community providers, but if a Veteran’s primary care is in the community, this could pose care coordination problems when specialty care is provided in the VA or by other community providers. To further understand the implications of this increase in CBPC, future work should assess the quality and cost differences in primary care across the 2 settings.

In conclusion, following the Choice Act, CBPC as a proportion of all VA-purchased primary care was small but increased nearly 3-fold between 2015 and 2018. Higher rates of CBPC penetration growth were concentrated in rural counties and counties without a VA facility, suggesting that CC may enhance primary care access in rural areas with less VA presence.

REFERENCES

- Expanded Access to Non-VA Care Through the Veterans Choice Program. Federal Register. 2018. Available at: <https://www.federalregister.gov/documents/2018/05/11/2018-10054/expanded-access-to-non-va-care-through-the-veterans-choice-program>. Accessed August 17, 2020.
- Panangala SV, Carey MP, Dortch C, et al. Veterans Access, Choice, and Accountability Act of 2014 (H.R. 3230; P.L. 113-146). Congressional Research Service. 2015. Available at: <https://fas.org/sgp/crs/misc/R43704.pdf>. Accessed August 17, 2020.
- Gruen RL, Weeramanthri TS, Knight SE, et al. Specialist outreach clinics in primary care and rural hospital settings (Cochrane Review). *Community Eye Health*. 206;19:31.
- Weeks WB, Yano EM, Rubenstein LV. Primary care practice management in rural and urban Veterans Health Administration settings. *J Rural Health*. 2002;18:298–303.
- Es W, Pi H, Se H, et al. Association between local area unemployment rates and use of Veterans Affairs outpatient health services. *Med Care*. 2014;52:137–143.

6. Kelley AT, Tipirneni R, Levy H. Changes in Veterans' coverage and access to care following the Affordable Care Act, 2011-2017. *Am J Public Health.* 2019;109:1233-1235.
7. Gabrielian S, Yuan AH, Andersen RM, et al. VA health service utilization for homeless and low-income Veterans: a spotlight on the VA Supportive Housing (VASH) program in greater Los Angeles. *Med Care.* 2014;52:454-461.
8. Weeks WB, Bott DM, Lamkin RP, et al. Veterans Health Administration and Medicare outpatient health care utilization by older rural and urban New England veterans. *J Rural Health.* 2005;21:167-171.
9. Kaufman CE, Asdigian NL, Running Bear U, et al. Rural and urban American Indian and Alaska Native Veteran health disparities: a population-based study. *J Racial Ethnic Health Disparities.* 2020;7:1071-1078.
10. The Robert Wood Johnson Foundation. County health rankings & roadmaps. 2020. Available at: <https://www.countyhealthrankings.org/explore-health-rankings/measures-data-sources/2020-measures>. Accessed August 18, 2020.
11. Health Resources and Services Administration. Area health resources files. Available at: <https://data.hrsa.gov/topics/health-workforce/ahrf>. Accessed August 31, 2020.
12. Data.gov. Rural-Urban Commuting Area Codes. 2020. Available at: <https://catalog.data.gov/dataset/rural-urban-commuting-area-codes>. Accessed August 24, 2020.
13. Shi L, Chen C-C, Nie X, et al. Racial and socioeconomic disparities in access to primary care among people with chronic conditions. *J Am Board Fam Med.* 2014;27:189-198.
14. Health Resources and Services Administration, Bureau of Health Professions. Projecting the supply and demand for primary care practitioners through 2020. 2020. Available at: <https://bhwh.hrsa.gov/sites/default/files/bhw/nchwa/projectingprimarycare.pdf>. Accessed August 25, 2020.
15. Griffith KN, Ndugga NJ, Pizer SD. Appointment wait times for specialty care in Veterans Health Administration facilities vs community medical centers. *JAMA Netw Open.* 2020;3:e2014313.
16. Penn M, Bhatnagar S, Kuy S, et al. Comparison of wait times for new patients between the private sector and United States Department of Veterans Affairs Medical Centers. *JAMA Netw Open.* 2019;2:e187096.
17. Vanneman ME, Wagner TH, Shwartz M, et al. Veterans' experiences with outpatient care: Comparing the Veterans Affairs system with community-based care. *Health Affairs.* 2020;39:1368-1376.
18. Edes T, Kinoshian B, Vuckovic NH, et al. Better access, quality, and cost for clinically complex Veterans with home-based primary care. *J Am Geriatr Soc.* 2014;62:1954-1961.
19. Shay K, Hyde B, Burris JF. Strategic plan for geriatrics and extended care in the Veterans Health Administration: background, plan, and progress to date. *J Am Geriatr Soc.* 2013;61:632-638.
20. Yano EM, Bair MJ, Carrasquillo O, et al. Patient Aligned Care Teams (PACT): VA's journey to implement Patient-Centered Medical Homes. *J Gen Intern Med.* 2014;29(suppl 2):547-549.
21. Rieselbach RE, Epperly T, Nycz G, et al. Community health centers could provide better outsourced primary care for veterans. *J Gen Intern Med.* 2019;34:150-153.
22. Asch SM, McGlynn EA, Hogan MM, et al. Comparison of quality of care for patients in the Veterans Health Administration and patients in a national sample. *Ann Int Med.* 2004;141:938-945.
23. Keyhani S, Ross JS, Hebert P, et al. Use of preventive care by elderly male veterans receiving care through the Veterans Health Administration, Medicare Fee-for-Service, and Medicare HMO Plans. *Am J Public Health.* 2007;97:2179-2185.
24. Ohl ME, Carrell M, Thurman A, et al. Availability of healthcare providers for rural veterans eligible for purchased care under the veterans choice act. *BMC Health Serv Res.* 2018;18:315.
25. Goodfellow A, Ulloa JG, Dowling PT, et al. Predictors of primary care physician practice location in underserved urban or rural areas in the United States: a systematic literature review. *Acad Med.* 2016;91:1313-1321.
26. Olenick M, Flowers M, Diaz VJ. US veterans and their unique issues: enhancing health care professional awareness. *Adv Med Educ Pract.* 2015;6:635-639.