Choice Between Public and Private Healthcare Systems: Evidence from Veterans *

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This paper examines the choice between public and private healthcare systems among elderly veterans, who are dually eligible to obtain care through the publicly operated Veterans Health Administration (VA) and through private providers financed by Medicare. We analyze health system choice among veterans who move across areas with differing rates of VA utilization to quantify the relative importance of individual-specific factors (e.g., preferences, income, health) and place-specific factors (e.g., local access, quality, and convenience). Our estimates indicate that 50–60% of geographic variation in VA use is attributable to demand-side individual factors, with the remainder explained by place-based factors. We also document important heterogeneity across types of care, with place-based factors playing a larger role for inpatient and emergency care than for outpatient and primary care. Additional analysis suggests that the supply-side features emphasized in recent legislation—distance to VA facilities and wait times—explain only a small share of estimated place effects. These findings highlight the importance of individual factors in health system choice and have implications for policies aimed at reducing geographic disparities in VA utilization.

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Individuals can often choose whether to obtain medical care through a public healthcare system (staffed by government employees) or a private healthcare system (in which providers operate independently). Public and private healthcare systems tend to be differentiated along many dimensions—provider quality, wait times, convenience, care coordination, and patient out-of-pocket cost. While a growing literature investigates how individuals make decisions over health insurance products, less is known about how individuals make decisions over healthcare systems. This gap is particularly important because many individuals—in the United States (U.S.) and abroad—can choose between public and private healthcare systems when seeking medical care (OECD, 2023).

A leading example of individuals who choose between public and private healthcare systems are elderly veterans in the U.S.—who are eligible to obtain health care through either public providers operated by the Veterans Health Administration (VA) program or private providers paid by the federal Medicare program. While the VA employs its own doctors and operates its own hospitals, Medicare purchases care on a fee-for-service basis from private providers. Because elderly veterans are covered by both the VA and Medicare programs, they can choose whether to receive medical care from a public VA provider or from a private provider financed by Medicare on a service-by-service basis. These two health systems are horizontally differentiated. Relative to Medicare, the VA offers more care coordination and provides care at a lower out-of-pocket cost. However, obtaining care through the VA can involve longer wait times, traveling farther to providers, more limited provider choice, and more limited access to specialty care.

While nearly 35% of elderly veterans' healthcare utilization is through the VA, there is wide geographic variation in veterans' VA use. The VA share exceeds 48% in New Mexico and West Virginia but falls below 24% in New Jersey, and within-state disparities are similarly large—ranging from 27% to 51% across Illinois markets and 36% to 56% across Colorado markets. Policymakers have long been concerned about geographic disparities in veterans' use of VA services and have often attributed these disparities to supply-side factors—such as wait times for VA services and the distance veterans travel to access services. Concerns over geographic disparities in VA use were a major motivating factor behind recent legislative reforms aimed at improving access to care among veterans—the 2014 Choice Act and the 2018 Mission Act—and are reflected in the details of this legislation. However, it is unclear whether low utilization of VA care in some areas is explained by supply-side factors (e.g., local VA quality, wait times, distance to VA facilities) or by individuals in these areas having weaker preferences for VA care relative to care outside the VA. Understanding the relative importance of supply-side versus demand-side factors in explaining geographic variation in VA use is essential for informing policymakers' objectives and assessing the effects of policies designed to meet those goals.

Our paper explores the determinants of choice across public versus private health systems among elderly veterans dually eligible for care through the VA and Medicare. Leveraging a "movers" research design, we compare the allocation of care across systems before and after a move among veterans who move between areas with differing overall VA use. Veterans' decisions about how to allocate care may be influenced by place-based factors (e.g., differences across the local systems in wait times, quality, convenience) or individual factors (e.g., preferences, income, health). The movers research design allows us to distinguish these factors through leveraging a simple idea: veterans who move carry with them their preferences and characteristics but face new place-based factors after the move. Thus, changes in veterans' allocation of health care coincident with their move allow us to separately identify the role of place- and individual-based factors in these decisions.

We present event study analysis relating trends in "VA share"—the share of a veteran's total annual care obtained through the VA system—among movers in the years surrounding a move with their destination-origin difference in VA share. This analysis reveals no correlation between destination-origin differences in VA share and movers' own VA share prior to the move. After moving, veterans who move to areas with greater VA share substantially increase their use of VA care. Our estimates imply that moving to an area with a 10 p.p. higher VA share is associated with a 4.7 p.p. increase in a veteran's VA share, on average. Moreover, the observed change in movers' VA share appears linear in the destination-origin difference in VA share. We document heterogeneity across types of care, finding that place factors are less important for outpatient and primary care and more influential for Emergency Department (ED) and inpatient care. Our estimates imply that 37% of the difference in VA share between areas in the top and bottom quartiles of the VA share distribution is attributable to place-based factors, while the remaining 63% is attributable to individual factors. Additionally, our estimates indicate that 46% of the observed cross-sectional variance in VA share would persist even if all place-based factors were counterfactually equalized across places.

In addition, we conduct a supplemental analysis to investigate possible mechanisms. First, we investigate which features of local healthcare markets are associated with our estimated place effects. Consistent with a role for healthcare quality in shaping veterans' system choice, place effects are positively correlated with local VA quality and negatively correlated with the quality of local Medicare providers. Second, motivated by recent policy interest, we examine the role of distance to the nearest VA facility and wait times for VA care as potential mediators of our estimated place effects. Interestingly, we find that both have little impact on the place effects estimates, suggesting place effects are not wholly or largely attributable to the features at the center of recent legislation addressing veterans' healthcare access; moreover, distance matters most for inpatient and ED care and has almost no effect on primary care, a pattern that contrasts with recent legislative efforts that have primarily focused on expanding access to primary and outpatient care through distance- and wait-time-based eligibility criteria.

Our paper contributes to the literature exploring settings with parallel public and private provision of goods and services. Much of the work in this literature has focused on estimating the consequences of public versus private provision on outcomes, in settings ranging from housing assistance (e.g., Katz, Kling and Liebman (2001), Chetty, Hendren and Katz (2016)) to school attendance (e.g., Abdulkadiroğlu et al. (2011), Dobbie and Fryer (2011)) to the provision of acute healthcare services in hospitals (e.g., Chan, Card and Taylor (2022); Duggan et al. (2023)) and ambulances (Knutsson and Tyrefors (2022)). These studies tend to focus on specific empirical settings where there is plausibly exogenous variation in exposure to public versus private provision. However, in many settings, individuals have the choice between public provision or publicly-financed private provision, and less is known about factors that influence individual choices across these options. Our work complements this literature by investigating the determinants of choice between public and private health systems and by providing evidence on these determinants in a large, policy-relevant population in the US—elderly veterans.

Our work is also related to an emerging literature on the VA program—much of which has focused on quantifying the impacts of specific supply-side or place-based features such as provider treatment practices (e.g., Eichmeyer and Zhang (2022)), the organization of providers (Chan and Chen, 2022), and barriers to accessing care such as wait times (e.g., Russo (2024), Saruya, Wagner and Zhu (2023)). This paper takes a broader view by asking: What share of the large geographic variation in VA use is explained by place-based factors in aggregate? The answer has important implications for policy. Regulators often point to large geographic disparities in VA utilization as evidence of unequal access to high-quality VA care, and recent reforms reflect this interpretation by targeting supply-side barriers to care. In contrast, we find that roughly half of the geographic variation in veterans' healthcare allocations is attributable to individual factors, such as income, preferences, and health. Moreover, the supply-side features emphasized in recent legislation—distance and wait times—explain only a small share of the variation in VA use attributable to place-based factors. These findings imply that geographic variation in VA use does not, on its own, provide a prima facie justification for policy intervention, and that policies focused on distance and wait times are unlikely to substantially narrow geographic disparities in VA use. More broadly, they suggest that considerable geographic disparities in veterans' healthcare allocations would persist even under policies that equalize access across locations, making such variation a poor benchmark for evaluating the success of those policies.

More broadly, our paper also contributes to a growing literature exploring patient choices in healthcare settings. While a large literature has explored choice of health insurance[1], much less is known about choice of healthcare systems. This gap is particularly important because the choice between public and private healthcare systems is a defining feature of healthcare delivery in many countries and has important implications for access to care, spending, and health outcomes. Our paper contributes to this literature by providing novel evidence on choices between public and private healthcare systems and the factors that affect these choices.[2]

Lastly, our paper builds on a growing literature exploring geographic variation in healthcare settings. Much of the work in this literature focuses on health (e.g., Finkelstein, Gentzkow and Williams (2021); Deryugina and Molitor (2020)) or healthcare quantity, prices, or practice styles (e.g., Finkelstein, Gentzkow and Williams (2016); Cooper et al. (2018); Cutler et al. (2019); Molitor (2018); Agha, Frandsen and Rebitzer (2019)). Our paper contributes to this literature by documenting geographic variation in health system choice and investigating determinants of this variation.

[1] This broader literature includes work on adverse selection (e.g., Einav, Finkelstein and Cullen (2010); Finkelstein, Hendren and Shepard (2019); Marone and Sabety (2022); Hackmann, Kolstad and Kowalski (2015)), choice frictions (e.g., Handel (2013); Polyakova (2016); Brot-Goldberg et al. (2021)), and externalities across insurance products (e.g., Cabral and Mahoney (2019); Starc and Town (2019)).

[2] Our paper complements other studies on public and private options, such as recent work on competition between public hospitals and private surgical centers (Cooper, Gibbons and Skellern, 2018) and choice between public and private health insurance (Cabral, Carey and Son, 2023).

1 Background and Data

1.1 Health Care for Elderly Veterans

Veterans in the U.S. aged 65 or older are eligible to obtain care through two publicly-funded healthcare systems: (*i*) public providers within the VA and (*ii*) private providers paid by Medicare. However, healthcare delivery via these two systems differs in important ways. VA care is delivered through an integrated healthcare system that directly employs healthcare workers and owns healthcare facilities. Consequently, VA care is integrated across clinical settings, whereas coordination among private providers paid through the Medicare system is very limited (Agha, Frandsen and Rebitzer, 2019; Cebul et al., 2008).

Elderly veterans decide whether to obtain care from VA or non-VA providers on a service-by-service basis. Several factors may influence these decisions. For instance, patients may opt for VA services if they prefer more care coordination or specialization in veterans' health issues. These characteristics may be particularly important for patients with complex conditions or those related to military service. Additionally, patient cost-sharing is typically lower for VA care than Medicare-financed care. At the same time, veterans who value choice over providers may prefer to obtain care outside of the VA system. Additionally, patients may make choices based on proximity to medical facilities (regardless of VA affiliation), reputation of the local VA, and/or their past experiences receiving health care.

1.2 Data, Sample Restrictions, and Summary Statistics

Our analysis leverages linked administrative data on health care and demographics from the VA and Medicare from 2000 through 2015. We observe comprehensive Medicare data for all veterans who have received services through the VA.[3] Our analysis focuses on veterans enrolled in both traditional fee-for-service Medicare for hospital and physician coverage and the VA; these veterans can choose which system to use on a service-by-service basis. For the universe of these veterans, we have linked Medicare administrative claims data—including information on all Medicare-covered medical claims, basic demographics, and patient zip code. The VA administrative data are based on its integrated electronic health record system, and they contain information on healthcare utilization similar to that in Medicare claims data, allowing us to create comparable measures of services provided.

We focus on veterans age 65 or older who we observe either (i) through our entire sample period or (ii) for the entirety of their enrollment in both fee-for-service Medicare and the VA.[4] Within our sample, our key outcome is VA Share$_{it}$: the fraction of care an individual receives from the VA in any given year. For most of our analysis, we define VA Share$_{it}$ in terms of visits, as visits to the VA (overall and by care type) divided by the total number of visits to VA and non-VA providers

[3] Given that the data include veterans with some VA use, we consider how elderly veterans differ depending on VA use using Current Population Survey data. Appendix Table A1 shows that veterans who use the VA are less likely to be white, employed, and in good overall health.

[4] This includes veterans aged 65 or older as of 2000 and those who turned 65 during the sample period.

combined. For example, a patient who had ten visits in total, with six with VA providers, would have VA $\text{Share}_{it} = 0.6$. Approximately 53% of veterans in our sample receive care from both VA and non-VA locations within a given year. Appendix Figure A1 plots individual-level VA Share_{it} by type of care.

Our analysis leverages veterans who move locations ("movers"). In this paper, a location is defined as a VA$\times$HRR, which is the spatial intersection of a Hospital Referral Region (defined by the Dartmouth Atlas as representing broad medical markets based on Medicare utilization patterns) and a VA catchment area (a set of zip codes representing service areas for VA medical centers). We define a *mover* as an individual whose mailing address changes from one VA$\times$HRR to another during our sample period and whose healthcare utilization shifts toward the new location in a manner consistent with that move. Specifically, we restrict attention to movers who switched care consistent with the move by requiring that the fraction of visits in their destination VA$\times$HRR (as a share of all visits in the origin or destination) increased by 75% after their change in address. Appendix Figure A2 demonstrates that, after imposing this restriction, utilization in the destination rises from nearly zero before the move to nearly all afterward.[5] Our baseline sample of movers contains approximately 110,000 distinct veterans representing 1.1 million person-years. See Appendix Section A.1 for further details on the sample construction and identification of movers.

Because VA Share_{it} can vary depending on the type of care, we analyze several measures. Our primary measure represents "combined visits"—the total number of visits across different types of care. Additionally, we consider visits by type of care (inpatient, ED, outpatient, and primary care) and a dollarized measure of utilization ("combined spending"), similar to that constructed by Finkelstein, Gentzkow and Williams (2016). See Appendix Section A.2 for further details on these measures.

Let $\overline{\text{VA Share}}_j = \frac{1}{T}\sum_t \left\{ \mid \mathcal{C}_{jt} \mid^{-1} \left(\sum_{i \in \mathcal{C}_{jt}} \text{VA Share}_{it} \right) \right\}$ represent the average VA Share in location j over the sample period, where $\mathcal{C}_{jt}$ represents the universe of sample veterans living in location j in year t. The difference between VA share ($\overline{\text{VA Share}}_j$) in individual i's destination and origin is captured in the variable $\widehat{\delta}_i$, and represents a continuous measure of the treatment that a mover experiences when moving.

Appendix Table A2 provides some basic summary statistics describing our sample, comparing movers to nonmovers. Among movers, the mean VA share for overall visits is 34.6%, with a higher mean VA share for outpatient and primary care (31.2% and 63.3%, respectively) than for inpatient and emergency care (19.8% and 18.7%, respectively). While the same patterns are echoed among nonmovers, movers have a slightly lower VA use. Nearly all movers and nonmovers have at least one visit in a given year (97.8% and 96.8%, respectively), consistent with the high health needs of older veterans. Among movers, the mean number of combined visits is 26.6, with combined spending averaging \$17,804. Demographic characteristics and overall healthcare use are broadly similar among movers and nonmovers.

[5] Appendix Figure A3 demonstrates our estimates are largely similar if dropping this restriction and re-scaling the estimates by the increase in claims in the movers' destination.

2 Empirical Strategy

2.1 Econometric Model

We use a movers research design drawing on methods developed in Finkelstein, Gentzkow and Williams (2016). Let i denote the individual and t denote the year. We begin by estimating an event study specification that investigates how changes in movers' VA share reflect differences in mean VA share in their destination relative to origin, using the following equation:

$$\text{VA Share}_{it} = \sum_{r \neq -1} \theta_r I_r \widehat{\delta}_i + \tau_t + \alpha_i + \mathbf{X}_{it}\beta + \varepsilon_{it}, \tag{1}$$

where the key coefficients, θ_r, are event-time-specific coefficients on $\widehat{\delta}_i$. The specification also includes time fixed effects (τ_t) to account for trends in VA versus Medicare utilization, individual fixed effects (α_i) for time-invariant differences in care allocation, and fixed effects for five-year age bins ($\mathbf{X}_{it}$). We omit the event-time-specific coefficient θ_r for the year directly preceding the move ($r = -1$), so reported event study coefficients reflect changes relative to that year. Robust standard errors are clustered at the individual level.

We also estimate a specification that summarizes these effects with indicator variables that comprise the entirety of the pre-move period ($r \leq -1$), a "transition" period ($r \in \{0, 1\}$), and the post-move period ($r > 1$). Specifically, we estimate

$$\text{VA Share}_{it} = \theta_{\{0,1\}} \cdot I_{r\in\{0,1\}} \cdot \widehat{\delta}_i + \theta_{post} \cdot I_{r>1} \cdot \widehat{\delta}_i + \tau_t + \alpha_i + \mathbf{X}_{it}\beta + \varepsilon_{it}. \tag{2}$$

The identification assumption behind both specifications above is that, in the absence of a move, the allocation of health care across systems would have evolved similarly for individuals exposed to different changes in the VA share upon moving. While this assumption is untestable, we find the assumption broadly plausible. Many factors likely affect individuals' decisions to move—family location, lifestyle, financial constraints—and VA and Medicare health system features may not play a first-order role in these decisions. Further, our event study estimates provide support for the identification assumption by demonstrating that an individual's VA share trends similarly prior to the move among movers who will experience differential changes in an area's mean VA share upon moving.

We also estimate the following complementary specification with data from both movers and nonmovers:

$$\text{VA Share}_{it} = \alpha_i + \gamma_{j(i,t)} + \tau_t + \mathbf{X}_{it}\beta + \varepsilon_{ijt}. \tag{3}$$

This specification includes individual fixed effects (α_i), time fixed effects (τ_t), place fixed effects (γ_j), and controls for five-year age bins ($\mathbf{X}_{it}$). Note place fixed effects are identified by movers, as only movers are observed in two places.

Estimates from this specification allow us to decompose the variance of the VA share into place and individual components. Specifically, we use these estimates to define the "place effect" (γ_j) and "average individual effect" ($\overline{z}_j \equiv \overline{\text{VA share}}_j - \gamma_j$) for each place. Using these place effects and average individual effects, we characterize how much of the difference in VA popularity across sets of places is explained by place-based factors versus individual-based factors. The share attributed to individual factors is the share of the difference in VA popularity we would expect to remain if all place-based factors were made equal.

More broadly, these estimates allow us to characterize the implied reduction in the national cross-sectional variance in VA share that would result from counterfactually equalizing place or average individual factors across all places. If all place factors were equalized while holding individual factors constant, the cross-sectional variance in VA share would decline by $1 - \text{var}(\overline{z}_j)/\text{var}(\overline{\text{VA share}}_j)$. We can also consider the impact of randomly reallocating individuals across areas—in which case average individual effects would be equalized across places—while holding place factors constant. This would result in a $1 - \text{var}(\gamma_j)/\text{var}(\overline{\text{VA share}}_j)$ reduction in the cross-sectional variance of VA share.

2.2 Descriptive Evidence and Identifying Variation

Figure 1 describes geographic variation in VA share across areas and by category of care, where shading represents quintiles of the VA share distribution. Several patterns are worth noting. Combined visits show substantial variation, with an interquintile range spanning 30 p.p. to 45 p.p. and 23 states containing areas in both the top and bottom quintiles. Variation is greater for inpatient and ED care—with an interquintile range roughly twice that of outpatient or primary care. Finally, while VA share is correlated across care types (correlation coefficients often exceeding 0.7), the correlation is notably lowest between primary care and ED care, suggesting some determinants of geographic variation may differ by care type (Appendix Figure A4).

Figure A5 plots the distribution of destination-origin VA share ($\widehat{\delta}_i$). Movers often experience large changes in mean VA share in their destination relative to their origin, with the interquartile range spanning -7.0 to 7.3 p.p. (i.e., 7.0 p.p. lower or 7.3 p.p. higher VA share relative to their origin). On average, movers experience an absolute change of 9 p.p. in VA share upon moving.

3 Results

3.1 Event Study Estimates

Figure 2 plots the relationship between the destination-origin difference in VA share and changes in a mover's own VA share upon moving. In this figure, the horizontal axis depicts ventiles of the destination-origin difference in VA share ($\widehat{\delta}_i$), while the vertical axis measures the mean change in movers' VA share associated with the move (comparing the VA share in post-move years 2 through 5 to pre-move years -5 to -2). Individuals moving to areas where VA care is more (less) popular correspondingly increase (decrease) their VA share after the move. The estimates indicate that a 10 p.p. increase in the destination-origin difference in VA share is associated with a 4.8 p.p. increase in the share of care the individual obtains through the VA after moving. This relationship appears roughly linear, supporting the destination-origin difference in VA share ($\widehat{\delta}_i$) entering the event study specification linearly. The remaining panels investigate this relationship by type of care. The pattern appears similarly linear across types of care, though the magnitude of the association varies substantially by type of care—with the strongest relationship for inpatient care, followed by ED care, primary care, and outpatient care.

As a complementary exercise, Figure A7 plots the relationship between the destination-origin difference in VA share and pre-move differences in VA share relative to a matched sample of nonmovers. While movers to higher-VA-share areas exhibit slightly higher pre-move VA use, these differences are modest relative to the post-move changes shown in Figure 2. Moreover, individual fixed effects throughout our analysis absorb any time-invariant differences in veterans' propensity to obtain care through the VA.

Figure 3 Panel (a) displays our main event study estimates. This figure indicates no pre-move correlation between movers' VA share trends and their future destination-origin difference. Upon moving, the figure depicts a sharp shift in movers' allocation of care toward the VA among those moving to destinations where VA care is more prevalent than in their origins. The event study coefficients indicate that the share of care an individual obtains at the VA increases by 4.7 p.p. when moving to an area with a 10 p.p. higher VA share, with a 95% confidence interval that rules out increases less than 4.5 p.p. or more than 4.9 p.p.

Figure A8 plots estimates by type of care and the associated magnitudes are summarized in Figure 3 Panel (b). As with the main plot for combined visits, these plots: (*i*) indicate no relationship between destination-origin VA share and changes in movers' VA share before the move and (*ii*) illustrate that there is a sharp post-move increase in VA Share among those moving to higher VA share areas. The magnitudes (summarized by θ_{post}) indicate that this adjustment is more pronounced for inpatient (0.63) and ED care (0.57), with smaller impacts for outpatient (0.45) and primary care (0.45). This pattern echoes similar evidence in Figure 2 and aligns with intuition, given that patients may have less flexibility to plan for and commute to care received in an ED or inpatient setting. We explore potential mechanisms behind these patterns further below.

We illustrate that our findings are robust to concerns raised in recent literature about potential bias in difference-in-differences research designs with staggered timing and heterogeneous treatment effects. In Figure A9, Panels (a) and (b), we demonstrate that our results are similar when estimating the event study specification separately by year of move. Further, Figure A9 Panel (c) demonstrates we obtain similar estimates from an alternative imputation-based estimation strategy (Borusyak, Jaravel and Spiess, 2024). See Appendix Section B.1 for more details.[6]

3.2 Decomposing Variation in VA Share

Next, we assess how much of the differences in VA share across areas can be explained by individuals versus place using estimates from equation 3. Figure A10 Panel (a) compares areas with VA share above and below the median—with mean VA shares of 45% and 30%, respectively—finding that

[6] Further robustness of our results to alternative fixed effect configurations and sample frames is displayed in Figure A12.

roughly 6.0 p.p. (39%) of the difference is attributable to place factors, with the remaining 61% attributable to differences in the composition of individuals. This proportion is similar across other characterizations of the VA share distribution. Analyzing patterns by type of care (Figure A10 Panels (c) through (f)), place-based factors explain a greater share of differences between high- and low-VA share areas for inpatient and ED care than for outpatient and primary care, consistent with our other analyses.[7]

Through highlighting the importance of both place and individual factors in explaining geographic variation in VA share, our findings suggest that much of the variation in VA use would remain if either place or individual factors were counterfactually made uniform nationwide. We consider this formally by using our estimates to characterize the impact of equalizing all place-based factors—all features of local healthcare markets that affect the relative attractiveness of VA versus Medicare. Figure A11 displays estimates from this analysis, which illustrate that 46% of the cross-sectional variance in VA share would persist even if all place-based factors were made uniform nationwide.

Two caveats are worth noting when interpreting this analysis. First, it holds individual factors fixed, making our estimates more appropriate for short- to medium-run counterfactuals, as individual preferences and health may adjust in the long run. Second, while movers and nonmovers are broadly similar on observables, these estimates are identified from movers and other differences may limit their broader applicability.

3.3 Supplemental Evidence

We present two sets of supplemental analyses considering potential mechanisms. We begin by exploring correlates of the estimated place and average individual effects. We then investigate the role of distance, quality, and wait times in explaining our findings.

Correlates of Place and Average Individual Effects We consider place characteristics describing features of local VA and non-VA healthcare systems. For example, we consider VA characteristics such as performance indices (for inpatient, outpatient, and mental health care), timeliness indices (for outpatient and ED care), VA healthcare supply (nurse turnover and physician capacity), and patient ratings (for hospital and outpatient care). Additionally, we consider characteristics of local non-VA health care, including measures of timeliness (for ED care), hospital quality (patient ratings, mortality index, hospital-acquired infections index, preventable complications, patient safety index), utilization (primary care visits per 1,000, ACSC discharges per 1,000), hospital capacity (acute care beds per 1,000), and overall quality (adjusted mortality rate, share of diabetics receiving appropriate testing).[8] We also consider measures of access to VA and non-VA services, such as Medicare prices (geographic area factors), distance to VA medical center, as well as measures of relative distance—distance to closest VA vs. non-VA facility—for primary, specialty, and hospital

[7] Table A3 presents further detail on these estimates.
[8] Measures of utilization, hospital capacity, and overall quality are constructed by the Dartmouth Atlas based on non-VA care delivered to Medicare beneficiaries.

care. We also analyze characteristics of area residents, based on demographic information from the Census (e.g., SES, high school education, higher education, share elderly, share disabled, and share veterans) and basic demographic information from our veteran sample (average age, share white, share male, service-connected disability). See Appendix Section A.3 for details on these measures.

Figure 4 displays coefficients from bivariate OLS regressions for the indicated characteristic. Reported coefficients represent the estimated effect (in standard deviation units) of a one-standard-deviation increase in the associated characteristic. The left panel of Figure 4 displays correlations for the estimated place effects. These estimates indicate place effects are larger in areas with higher-quality VA care—higher-quality VA outpatient care, lower VA wait times for outpatient care, and better patient coordination within the VA. Further, place effects are lower in areas with higher quality non-VA care—areas with better non-VA hospitals (with higher patient ratings, lower incidence of hospital-acquired infections), more hospital capacity (more acute care beds per 1,000), and higher primary care utilization (primary care visits per 1,000). In addition, place effects are larger in areas with better relative access to the VA than to Medicare (places with shorter distances to VA hospitals relative to Medicare hospitals and places with higher Medicare prices). While this evidence on health system choice is novel, it broadly aligns with both intuition and prior work suggesting that demand for health care in general is sensitive to quality, distance, and price (e.g., Manning et al., 1987; Dranove et al., 2003; Petek, 2022).

The right panel of Figure 4 displays the analogous correlates for average individual effects. The estimates indicate that average individual effects are higher in areas where individuals are, on average, younger, lower-SES, less educated, and more likely to be disabled. Moreover, average individual effects are higher in areas where a greater share of veterans have a service-connected disability. Comparing the right and left panels, we see that average individual effects are generally less correlated with features of the VA and non-VA healthcare systems, and there are fewer systematic patterns in these correlations. Overall, this evidence suggests age, SES, and service-connected disability status are key correlates of demand for health care through the VA versus non-VA sources. This evidence broadly aligns with intuition. Those with service-connected disability may particularly value the veterans' health expertise available among VA providers, and age and health status have been shown to be correlates of healthcare demand in other settings (Finkelstein, Gentzkow and Williams, 2016; Brot-Goldberg et al., 2021).

Role of Distance, Quality, and Timeliness Policymakers have long been concerned about veterans' access to health care. Recent federal legislation reflects specific concerns about limited access to VA providers among veterans living far from a VA facility or facing long wait times for VA care. Motivated by this policy focus, we conduct supplemental analysis assessing the roles of distance and wait times in explaining variation in health system choice among veterans.

We begin by analyzing the role of distance by augmenting our baseline event study with controls for distance to the nearest VA and non-VA hospital, primary care provider, and specialist; see Appendix Section A.4 for details. Figure 5 Panel (a) illustrates that the event study estimates are qualitatively and quantitatively similar when controlling for distance, with estimates from this specification indicating the shift in VA use among movers is 87% of the implied shift in the baseline specification. In other words, less than 13% of the overall estimated impact is attributable to differences in travel distances for VA or non-VA care.[9]

Figure 5 Panel (b) summarizes analogous estimates by type of care. While including distance controls has limited impact on the estimates across all types of care, distance controls matter relatively more for inpatient and ED care—reducing the estimated impacts by 21% and 19% respectively—with slightly more muted impacts for outpatient care and almost no impact for primary care. These patterns are consistent with the notion that commuting for inpatient and ED care may be more difficult, given that this care is often time-sensitive and local access may be particularly valuable. Moreover, these findings suggest that primary care use is not sensitive to distance from the VA.

Next, we explore the potential role of wait times and patient-facing quality measures in explaining the importance of place, through augmenting the baseline specification with controls for timeliness and quality of care at the closest VA facilities.[10] Figure 5 Panel (c) illustrates that the event study estimates are nearly identical when controlling for timeliness and VA quality measures, suggesting a negligible amount of the impact of place is attributable to differences in these features. Figure 5 Panel (d) illustrates that these patterns are similar across types of care, with no statistically distinct differences. Moreover, Figure 5 Panel (e) illustrates these patterns are similar when controlling for distance, timeliness, and quality measures simultaneously; compared to the baseline estimates, the shift in VA care is only 19% smaller when all controls are included simultaneously.

Recent legislative efforts—the Choice Act (2014) and the Mission Act (2018)—focus on expanding access to primary and outpatient care for veterans living far from a VA provider or facing long wait times for VA care. Our findings are particularly interesting in light of this focus, given that our estimates indicate outpatient and primary care are less affected by distance and wait times. In this way, our results suggest a rationale for policymakers concerned with place-based disparities to shift their focus to other types of care (e.g., inpatient and ED care) or to other supply-side determinants of access to care beyond distance and wait times.

4 Conclusion

This paper explores how individuals allocate healthcare across public and private healthcare systems, focusing on elderly veterans' choices between care provided through the VA and Medicare. Our estimates suggest that roughly 50–60% of the variation in the share of care obtained from the VA is attributable to demand-side individual factors such as preferences and health, with the remainder attributable to place-based factors.

The allocation of healthcare across public and private systems varies widely across regions, with some areas exhibiting particularly low VA use. For example, half of areas have a mean VA share below 40%. Policymakers have often interpreted areas with low VA use as evidence of unequal access

[9] Consistent with these findings, Figure A13 illustrates that both the rural population and distance have a weak relationship with VA Share.

[10] Quality and timeliness measures for nearby VA facilities include: patient outpatient ratings, patient hospital ratings, and indices for the timeliness of care received in ED and outpatient settings.

to high-quality VA care and, accordingly, have pursued place-based interventions aimed at reducing VA wait times, improving VA quality, and expanding access to non-VA care for veterans living far from VA facilities or facing long wait times. Our findings suggest a more nuanced interpretation. While place-based factors matter, individual factors—such as income, health, and preferences—are at least as important in explaining geographic variation in VA use. Moreover, the two specific supply-side barriers emphasized in recent policy efforts—wait times and distance—account for only a small share of the variation attributable to place-based factors. These findings imply that observed geographic disparities in VA use should not be interpreted solely as evidence of unequal access to VA care and suggest that policies targeting the equalization of supply-side factors are unlikely to eliminate geographic differences in health system allocation.

More broadly, geographic disparities in the use of public healthcare systems are often attributed to features of those systems—such as quality, wait times, and distance. Our findings suggest that individual factors can play an equally important role, and that similar analyses decomposing place- and individual-based drivers may be valuable for interpreting geographic disparities in other settings where individuals choose between public and private provision.

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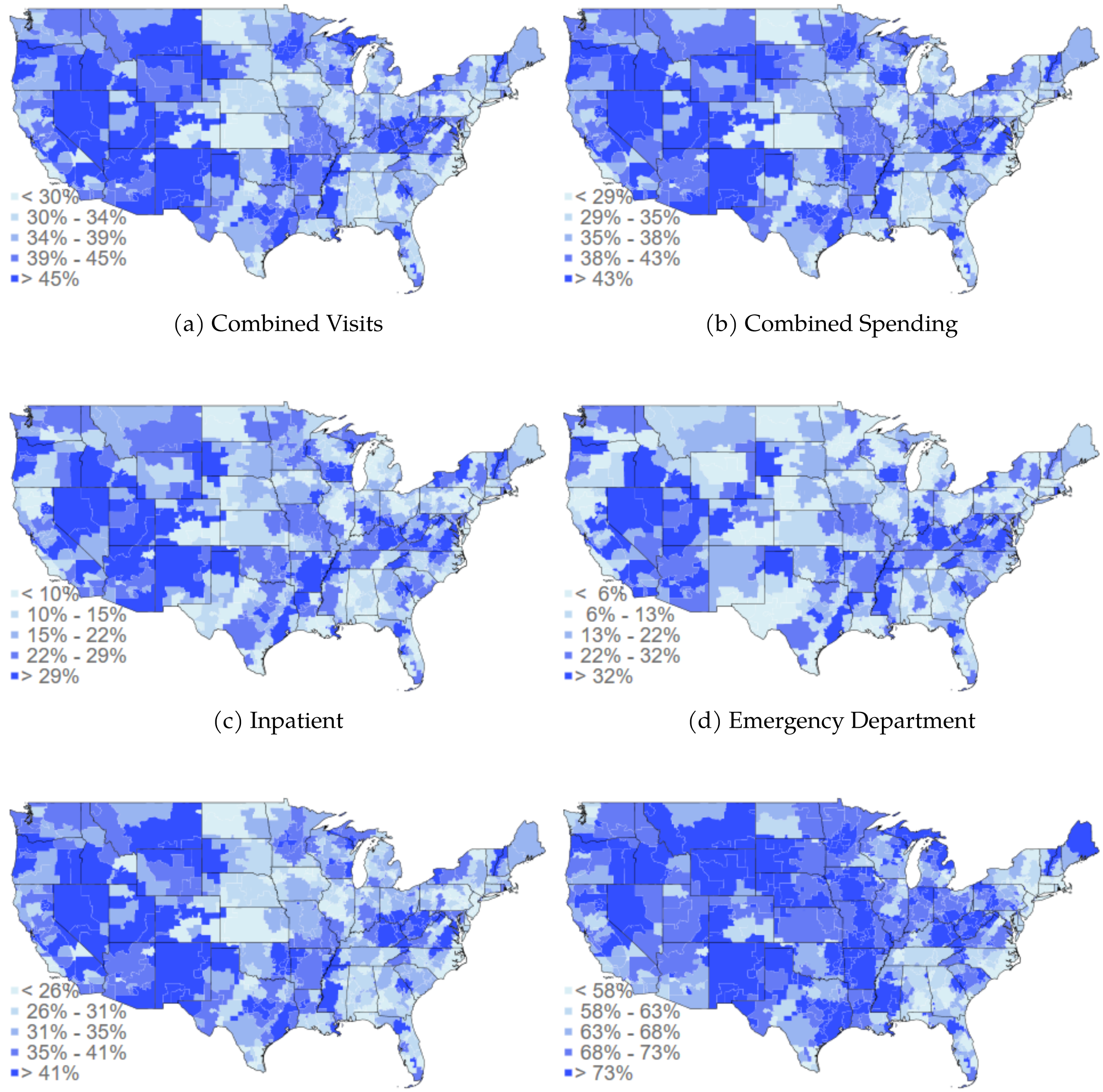
Figure 1 – Geographic Variation in VA Share by Measures of Care



(a) Combined Visits

(b) Combined Spending

(c) Inpatient

(d) Emergency Department

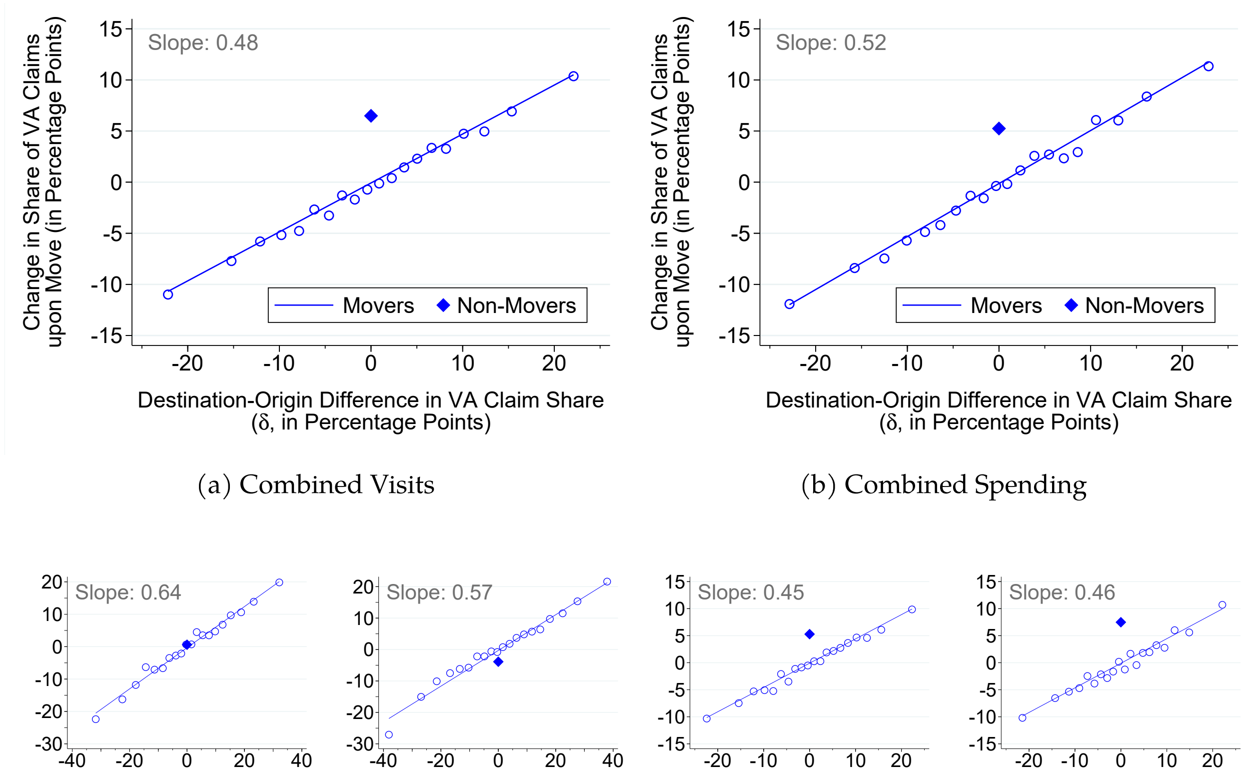
(e) Outpatient

(f) Primary Care

Notes: The purpose of this figure is to display identifying variation in VA Share across geography and by types of care (e.g., outpatient, inpatient, emergency, and primary care). See Appendix Figure A4 for geography-level correlations across care-types and Figure A6 for the distributions of VA Share.

Source: Author calculations using Medicare claims and VA Administrative data.

Figure 2 – There is a Linear and Symmetrical Relationship Between Move Size and the Change in VA Share



(a) Combined Visits

(b) Combined Spending

(c) Inpatient

(d) Emergency

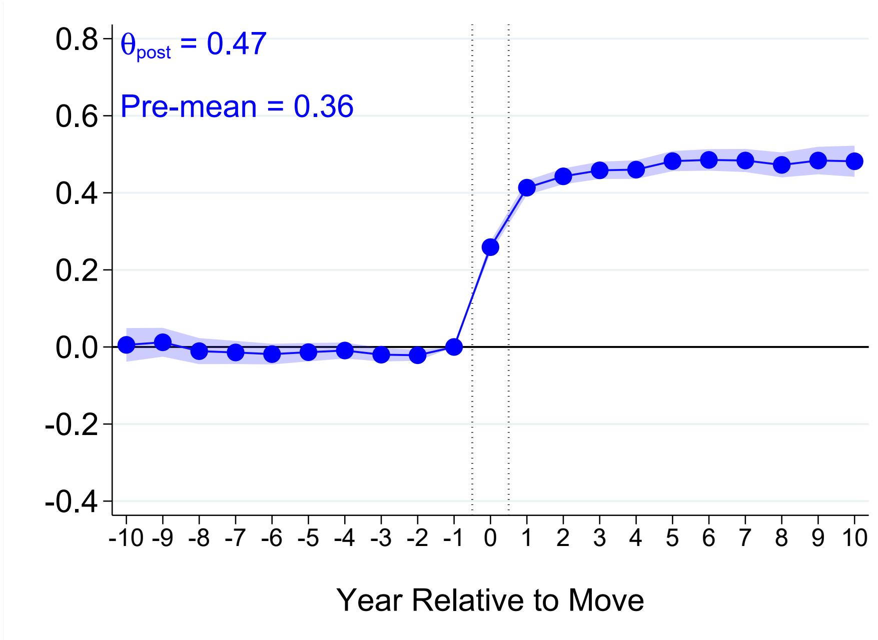
(e) Outpatient

(f) Primary Care

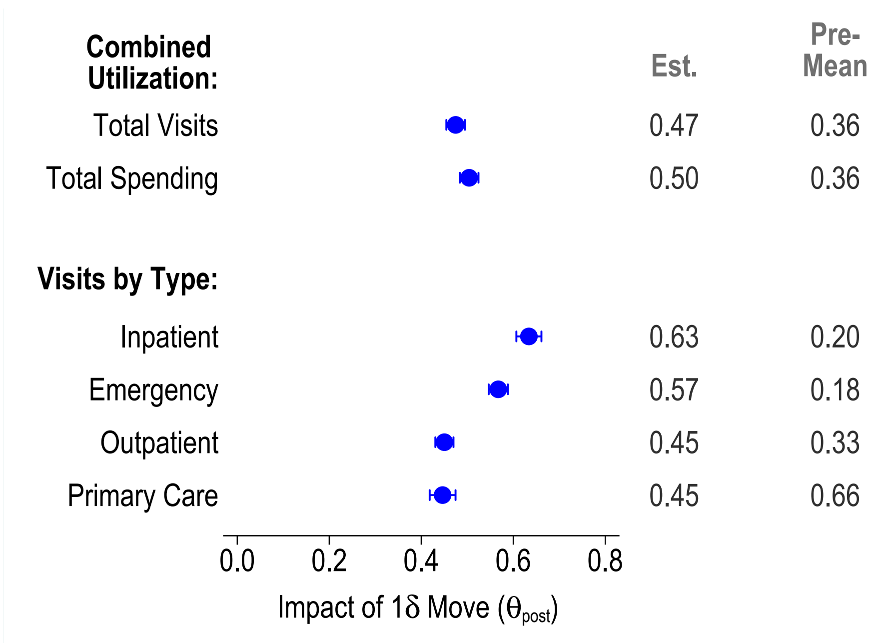
Notes: The purpose of this figure is to display the relationship between size of an individual's move ($\widehat{\delta_i}$), which is displayed in ventiles, and their change in VA Share before and after a move, where the before-move period spans the fifth through second years preceding the move, while the after-period spans the second through fifth post-move years. Presenting the data in this way demonstrates that the relationship between the treatment and outcome variables are linear (which justifies modeling choices in Equation 1) and also provides evidence that our effects are symmetrical–i.e., that moving from a high-to-low VA Share area has roughly the same effect (in absolute terms) as moving from a low-to-high VA Share area.

Source: Author calculations using Medicare claims and VA Administrative data.

Figure 3 – Individuals are Highly Responsive to Environment When Choosing between VA and Non-VA Care



(a) Event Study (Combined Visits)

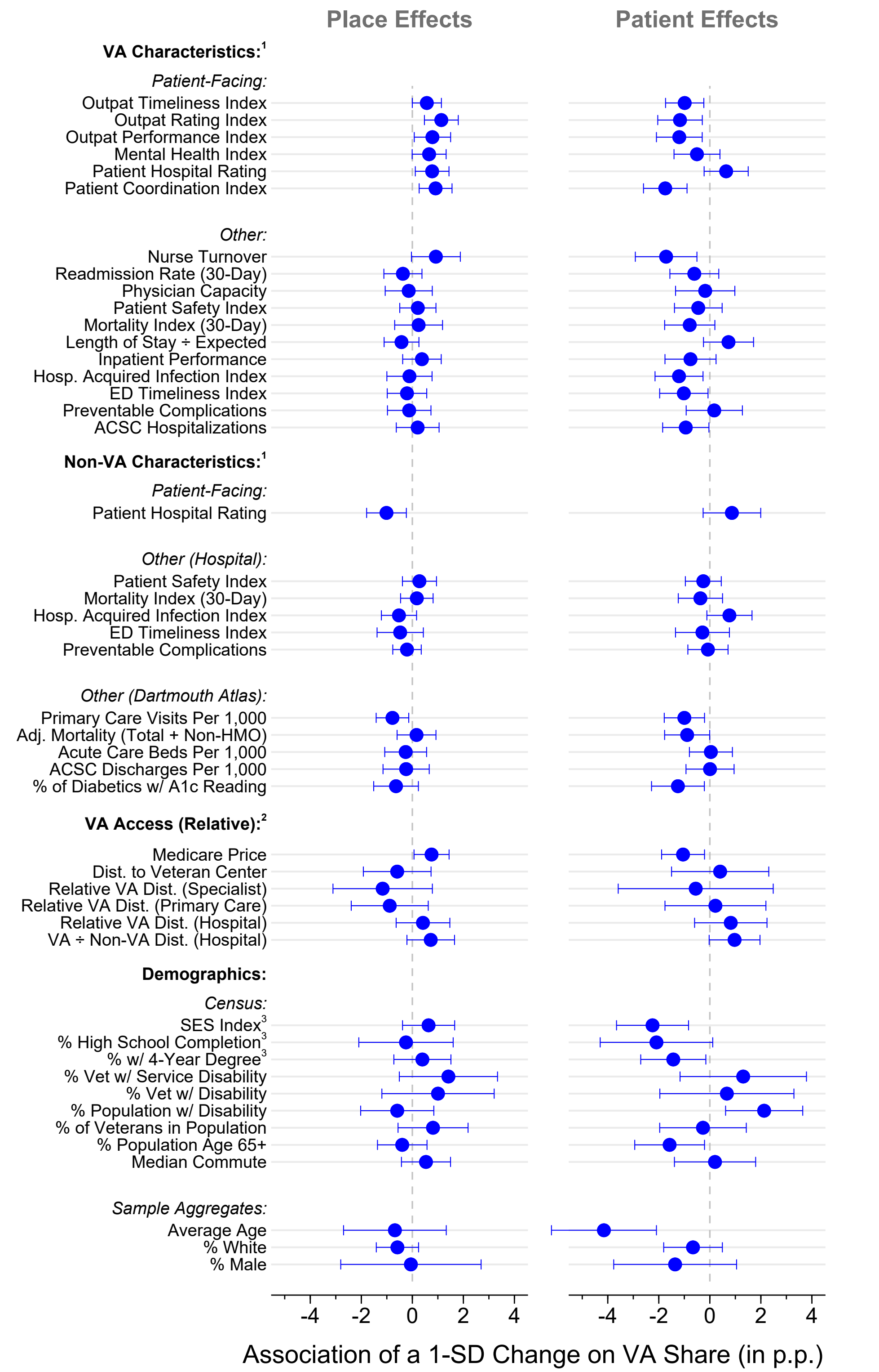


(b) Summary Coefficients (All Care Types)

Notes: The purpose of this figure is to display the results of our main estimating equation (Equations 1 and 2). See text for further discussion of results.

Source: Author calculations using Medicare claims and VA Administrative data.

Figure 4 – Correlates Analysis



Notes: The purpose of this figure is to display the results of our correlates analysis discussed in Section 3.3. Panel (a) displays correlates of place effects ($\hat{\gamma}_j$), while Panel (b) displays correlates of average individual effects ($\overline{\text{VA Share}}_j - \hat{\gamma}_j$). Standard errors calculated by 100 bootstrap repetitions of the patient-level regression described by Equation 3. See Appendix Section A.3 for more detail on data construction.

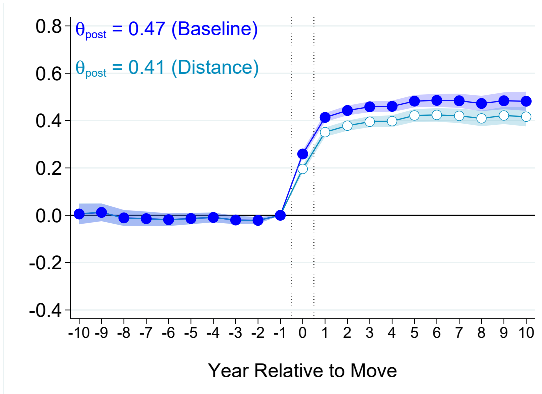
[1] VA and Non-VA Characteristics are coded so that higher values are better for patients.

[2] VA Access is coded so that higher values represent better relative access to VA facilities. In practice, this means that higher values for Medicare Prices are seen as advantageous for VA facilities, since patient cost-sharing is relatively more onerous for non-VA visits.

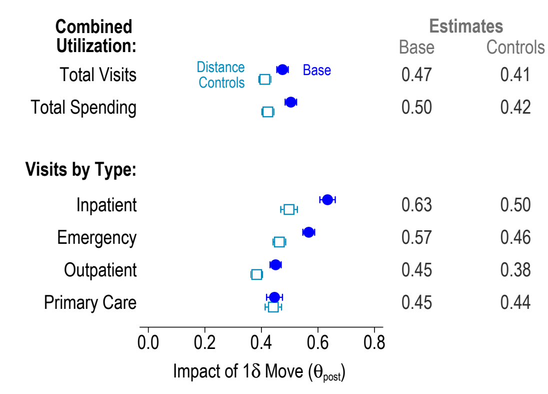
[3] Lines represent averages of veteran-specific and population-wide characteristics.

Source: Author calculations using data from Medicare claims, VA Administrative databases, 2008-2012 American Community Survey (Manson et al., 2023), Dartmouth Atlas of Care, Hospital Compare, and VA SAIL.

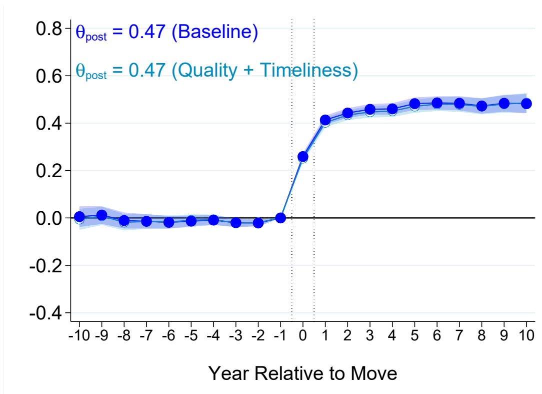
Figure 5 – Controlling for Distance, VA Quality Ratings, and Timeliness Measures Yields Qualitatively Similar Results



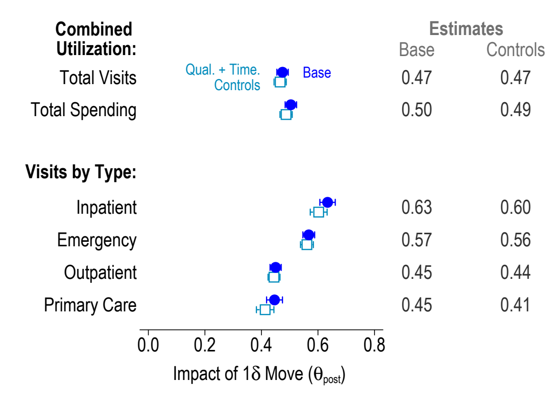
(a) Event Study w/ Distance Controls



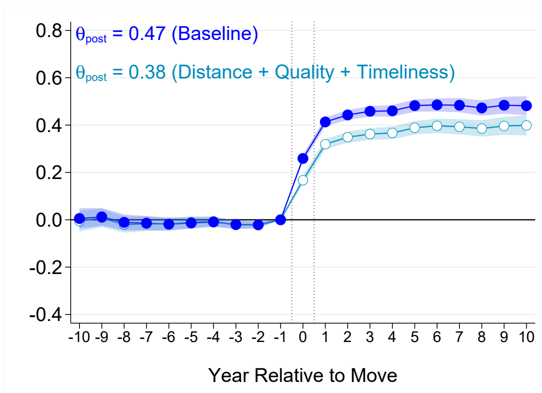
(b) Summary Coef. w/ Distance Controls



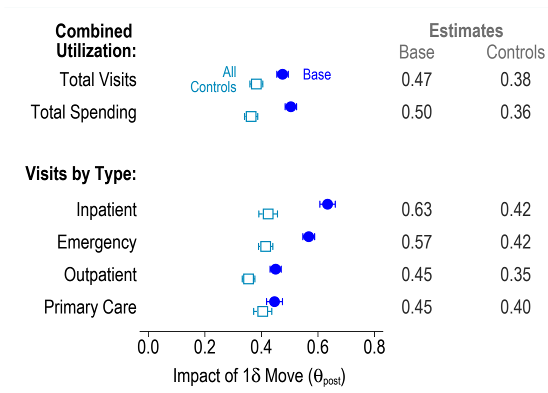
(c) Event Study w/ Quality and Timeliness Controls



(d) Summary Coef. w/ Quality and Timeliness Controls



(e) Event Study w/ Distance, Quality, and Timeliness Controls



(f) Summary Coef. w/ Distance, Quality, and Timeliness Controls

Notes: The purpose of this figure is to display the results of our main estimating equation (Equations 1 and 2). In Panels (a) and (b), we estimate the effect of place on VA Share while flexibly controlling for distance to the nearest VA and non-VA medical facilities. In Panels (c) and (d) we control for indicators of outpatient and ED timeliness, as well as outpatient quality and hospital ratings (See Appendix A.4 for further discussion of these variables). Panels (e) and (f) control for all variables included in the previous two rows. See text for further discussion of results.

Source: Author calculations using Medicare claims and VA Administrative data.

Appendix: for Online Publication

A Data Construction

A.1 Additional Details on Sample Construction

Sample Definition. As discussed in Section 1, the construction of our sample begins with individuals associated with the Veterans Administration. Individuals associated with the VA include people who have received treatment as patients, initiated enrollment paperwork, or have some other documented connection with the VA, such as participation in a VA pension plan or utilization of educational assistance programs.

To integrate Medicare claims data with VA records, we provided this universe of individuals to the Centers for Medicare and Medicaid Services ("CMS") via a Finder's File. This process allows us to obtain applicable Medicare claims data, as well as demographic details, such as age, sex, and zip code of residence.

From this merged dataset, we apply a series of restrictions to define our primary analytic sample. First, we exclude all patient-years for individuals under the age of 65. Moreover, we require that individuals be covered by Traditional Medicare Parts A and B for the entire year and not be enrolled in Medicare Advantage during any given point during that year, which allows us to observe all claims made under Medicare. Additionally, patients must have been enrolled in the VA by the age of 65, with the exception of those who had enrolled prior to our sample period, beginning in 2001.[1]

Identification of Movers. To identify movers within our sample, we focus on individuals who relocated *exactly once* during our sample period. A "move" is defined as a change in residence from one VA×HRR region to another, where veterans are matched to their VA×HRR region using information on zip code of residence in the Medicare data which is based on addresses on file with the Social Security Administration (SSA). All geographic information is as of mid-year. Calendar years and move years are based on SSA-years, which run from April 1 to March 31.

VA×HRR zones are constructed based on the spatial intersection of two geographic regions:

1. **Hospital Referral Regions ("HRRs"):** These regions, defined by the Dartmouth Atlas of Health Care, represent local medical markets based on utilization patterns among Medicare beneficiaries.

2. **VA Catchment Zones:** These zones are created by assigning zip codes to the VA facility where enrolled veterans in that zip code receive the majority of their medical care.

To ensure we capture meaningful relocations, we apply two additional restrictions. First, individuals who moved more than once during our sample period are excluded from the dataset. Second, individuals who changed their residential zip code but did not shift the majority of their care to their new location are also dropped. The latter condition helps to eliminate cases where address changes

[1] As robustness, we also consider an alternative stricter sample restriction by retaining only those individuals who were known to enroll in the VA before turning 65. This functionally limits our sample to a younger patient population—since older patients aged into Medicare prior to 2001—but yields qualitatively similar results.

do not correspond to actual relocations—such as when an individual updates their contact without truly changing their residence.

A.2 Construction of Utilization Measures

To examine how place influences healthcare choices among veterans dually eligible for care through Medicare and the VA, we construct several measures of utilization. The primary metrics used in our analysis are based on visits, which are defined as follows for different types of care:

- **Outpatient and Primary Care Visits** are defined as any day with a *Stop Code*, which is the VA's primary unit for categorizing clinical responsibility and for internal cost accounting. Medicare visits are identified as any day associated with a unique claim in the Medicare Carrier Claims File. [2]

- **Inpatient Visits** are defined as any day during which a patient is admitted to a hospital as an inpatient.

- **Emergency Department ("ED") Visits** are defined as any claim originating from an emergency department. This category is mutually exclusive from others—for instance, physician services that would otherwise be classified as outpatient care are counted as ED utilization if they occur in an emergency department setting.[3]

While visit-based measures offer a straightforward approach to capturing healthcare utilization, they do not account for differences in resource intensity. If VA-related visits tend to involve more extensive use of resources—such as imaging, diagnostic tests, or longer consultations—than Medicare visits (or vice versa), simple visit counts may misrepresent true utilization patterns. To address this limitation, we construct a spending-based utilization measure that is independent of geographic variation, following the methodology of Finkelstein, Gentzkow and Williams (2016). Specifically, we implement the following steps:

- For all services with associated Healthcare Common Procedure Coding System (HCPCS) identifiers, we apply the relative value units (RVUs) defined by CMS and multiply them by the year-specific conversion factor provided by CMS. For services without RVUs, we substitute the median Medicare payment for that service in the corresponding year.

- For services reimbursed under the Diagnosis-Related Group (DRG) system, we apply the applicable year-specific rates obtained from CMS.

[2] Primary care for the VA is defined using Stop Codes 301, 318, 322, 323, 348, and 350. Primary care for Medicare is any claim with (a) an HCPCS code in the following ranges: 99201-99205, 99211-99215, 99381-99387, 99381-99387, or 99391-99397; (b) a specialty code of 1, 8, 11, 38, 50, 70, or 97; *or* (c) a place of service code of 11, 22, 50, or 72. These exclusions ensure that evaluation and management care is being administered by providers who typically deliver primary care services and in places where primary care is typically obtained (e.g., office-based clinics, rural clinics, outpatient centers, etc.).

[3] Specifically, this is defined within the VA as service with a Stop Code of 130 *or* the combination of a primary Stop Code of 102 and a secondary Stop Code of 101. For Medicare, this consists of a unique claim with a revenue center of 450, 451, 452, 456, 459, or 981.

- Importantly, no geographic price adjustments are applied in the dollarization of Medicare or VA services.

A.3 Construction of Measures for Correlates Analysis

Data for our correlates analysis (displayed in Figure 4 and Appendix Figure A14) were constructed as described below. All characteristics were transformed into a z-score to facilitate comparison across characteristics.

VA Characteristics

All data in this section were obtained from the VA's Strategic Analytics for Improvement and Learning Value ("SAIL") model. This hospital-level data was collapsed to the VA $\times$ HRR-Zone by using the zip code of the hospital's main location. Hospital estimates were weighted within each zone using the number of beds reported.

All measures were sourced from 2015 SAIL reports (the earliest year of available data) unless a variable only existed in the 2019 version, in which case that data point was used. All variables were oriented so that higher values indicate better outcomes for patients and/or higher care quality.

To facilitate the analysis, several indices were constructed from harmonized variables. The indices contain the following measures, with equal weight given to each measure. These are listed in order of appearance in Figure 4:

- Outpatient Timeliness Index:
  1. Percentage of patients who always received a timely primary care / mental health appointment.
  2. Percentage of patients who always received a timely specialty appointment.
  3. Percentage of patients who have a 0-to-1-day wait for an urgent appointment.
  4. Percentage of patients who have a less-than-30-day wait for a primary care appointment.
  5. Percentage of patients who have a less-than-30-day wait for a specialty appointment.
  6. Percentage of patients who have a less-than-30-day wait for a mental health appointment.

- Outpatient Rating Index:
  1. The average rating given to primary care providers within this system.
  2. The average rating given to specialists within this system.

- Outpatient Performance Index:
  1. Healthcare Effectiveness Data and Information Set (HEDIS) composite score related to outpatient behavioral health screening, prevention, immunization, and tobacco.

2. HEDIS composite score related to outpatient care for diabetes and ischemic heart disease.

- Mental Health Index:

  1. Ratings for mental health continuity of care.
  2. Ratings for mental health population coverage.
  3. Ratings for mental health experience of care.

- Patient Coordination Index:

  1. Ratings for coordination for patient-centered medical home.
  2. Ratings for coordination among specialists.

- Patient Safety Index.

  Average of CMS Patient Safety Index (“PSI”) measures:

  #3: Pressure Ulcer Rate,

  #4: Death Rate Among Treatable Conditions,

  #6: Iatrogenic Pneumothorax Rate,

  #7: Central Venous Catheter-related Bloodstream Infections,

  #9: Perioperative Hemorrhage and Hematoma Rate,

  #10: Postoperative Acute Kidney Injury Rate,

  #11: Postoperative Respiratory Failure Rate,

  #12: Perioperative Pulmonary Embolism and Deep Vein Thrombosis Rate,

  #13: Postoperative Sepsis Rate, and

  #14: Postoperative Wound Dehiscence Rate.

- Mortality Index. 30-Day Mortality Measures for:

  1. Acute myocardial infarction (AMI),
  2. Congestive heart failure,
  3. Pneumonia,
  4. Chronic obstructive pulmonary disease (COPD), and
  5. Stroke.

- Hospital Acquired Conditions Index:

  1. Urinary tract infection (UTI),
  2. Central line-associated bloodstream infection (CLABSI),
  3. Ventilation, and

4. Methicillin-resistant Staphylococcus aureus (MRSA).

- Emergency Department Timeliness Index:

  1. Percentage of patients who left the emergency department without being seen.
  2. Median minutes from arrival in emergency department to departure.
  3. Median minutes from admission to departure.

Non-VA Characteristics: Patient-Facing and Other (Hospital)

All data in this section were obtained from the Hospital Compare Database provided by CMS. This hospital-level data was collapsed to the VA $\times$ HRR-Zone by using the zip-code of the hospital's main location and hospital estimates were weighted within each zone using the number of beds reported.

All measures were sourced from 2015 Hospital Compare reports unless variables only existed in the 2019 version of the data, in which case that data point was used. These years were chosen to match the VA SAIL data. All variables were oriented so that higher values indicate better outcomes for patients and/or higher care quality.

To facilitate the analysis, several indices were constructed from harmonized variables. The indices contain the following measures, with equal weight given to each measure. These are listed in order of appearance in Figure 4:

- Patient Safety Index.

  Average of CMS Patient Safety Index ("PSI") measures:

  #4, #6, #12, #14: See descriptions above.

  #15: Unrecognized Abdominopelvic Accidental Puncture/Laceration Rate.

- Mortality Index. 30-Day Mortality Measures (same as in VA SAIL data).

- Hospital Acquired Conditions Index:

  1. UTI, CLABSI, and MRSA (same as in VA SAIL data).
  2. Clostridioides difficile (C.Diff).

- Emergency Department Timeliness Index (same as in VA SAIL data).

Non-VA Characteristics: Other (Dartmouth Atlas)

These HRR-level measures were obtained from the Dartmouth Atlas of Care for 2012 year. All variables were oriented so that higher values indicate better outcomes for patients and/or higher care quality.

VA Access (Relative)

Medicare prices represent geographic adjustment factors obtained from CMS. Distance measures were calculated as follows:

- **VA Measures**. Longitude and latitude were obtained for each VA location type, and distance was calculated to patients based on the centroid of their zip-code of residence. For primary care, distance was calculated based on the nearest primary-care clinic, multi-specialty clinic, or healthcare center. For specialists, distance was calculated based on the nearest specialist clinic, multi-specialty clinic, or healthcare center.

- **Non-VA Measures**. Longitude and latitude were obtained for each hospital, and the distance was calculated using the same measure above. For primary care and specialist distances, address data was obtained from the 2012 Medicare Physician and Other Supplier Data File, which contains address locations for physicians who treat Medicare patients. This dataset was collapsed to the zip code level, and distance was calculated from the nearest zip code that held a primary care or specialist, respectively.

Demographics (Census)

All measures in this section were obtained from the 2008-2012 American Community Survey zip-code-level estimates (Manson et al., 2023). Data were aggregated to the VA $\times$ HRR-Zone level using a veteran-weighted average.

The "SES Index" included in this section is an average of (1) overall median household income, (2) veteran-specific median household income, (3) the percentage of households below the poverty line (reverse-coded so that higher values indicate fewer below-poverty households), and (4) the percentage of veterans in below-poverty households (also reverse-coded). Each characteristic receives an equal weight in the index.

Values for educational achievement include equally-weighted averages for overall educational attainment and veteran educational attainment (these measures are highly correlated).

Demographics (Sample Averages)

These averages were calculated using all individuals (movers and non-movers) in our sample.

A.4 Construction of Measures for Distance, Quality, and Timeliness

Distance Controls

Covariates for distance include several measures, including:

- Controls for distance to the nearest VA Medical Center and non-VA Hospital were included separately, measured as the longitude/latitude to the facility from the centroid of the patient's zip code. Moreover, an additional control for the ratio of VA/non-VA hospital distance is included.

- Controls for distance to the nearest (a) VA primary care facility, (b) VA outpatient facility (non-primary care or multi-specialty), and (c) Veterans' Center were included separately. Distance was calculated from the facility longitude/latitude to the centroid of the patient zip code.
- Controls for distance to the nearest (a) non-VA primary care and (b) non-VA specialist were calculated using distance between the patient zip code and provider zip code. Geographic information on providers was obtained from the public-use Medicare Physician Utilization Summary file.

Finally, all distance measures are scaled by the average commuting distance in each patient's zip code, obtained from the American Community Survey, to account for norms in travel distances that may vary across geography.

Quality and Timeliness Controls

Covariates for quality and timeliness consist of four measures obtained from VA SAIL: (1) the outpatient timeliness index, (2) the outpatient rating index, (3) hospital rating, and (4) the emergency department timeliness index. Other than the 'hospital rating' variable, these each represent a constructed index. See the "VA Characteristics" subsection of Appendix Section A.3, above, for more detail.

B Additional Results and Robustness

B.1 Robustness to an Alternative Estimator (Imputation Method)

This section demonstrates our baseline event study results are robust to an alternative estimation strategy that allows for treatment effect heterogeneity by move timing. The setup of this alternative specification closely follows a similar strategy used in (Finkelstein et al., 2022), which builds on the imputation strategy proposed by (Borusyak, Jaravel and Spiess, 2024). We describe each step of the alternative method in detail below.

- **Step 1**: Following the suggestions in (Borusyak, Jaravel and Spiess, 2024), we first regress VA Share$_{it}$ on VA $\times$ HRR zone-year (γ_{jt}) and five-year age bin (age_g) fixed effects using the sample of all **non-movers** to generate (coefficient) estimates that are uncontaminated by the behavior of movers:

$$\text{VA Share}_{it} = \gamma_{jt} + \text{age}_{it} + u_{it} \tag{B1}$$

  for each individual i in VA $\times$ HRR zone j in year t.

- **Step 2**: Then, we construct a counterfactual outcome for each mover using estimates of γ_{jt} and age_{it} obtained in Step 1. Specifically, we apply the appropriate VA $\times$ HRR zone-year and age-bin fixed effects to each mover based on their *origin* ($\gamma_{o(i),t}$) and age in a given year t. Then we subtract this "counterfactual" outcome from the true value of VA Share_{it} to form a residualized outcome $\widetilde{\text{VA Share}}_{it}$:

$$\widetilde{\text{VA Share}}_{it} = \text{VA Share}_{it} - \underbrace{(\gamma_{o(i),t} + \text{age}_{it})}_{\text{Counterfactual}} \quad \text{(B2)}$$

- **Step 3**: Next, we estimate the specification below by year of move (m) using only movers:

$$\widetilde{\text{VA Share}}_{it} = \alpha_i + \sum_{r \neq -1} \theta_r^m I_r \delta_{it} + \varepsilon_{it} \quad \text{(B3)}$$

  where $\delta_{it} = \overline{\text{VA Share}_{d(i),t}} - \overline{\text{VA Share}_{o(i),t}}$, such that $d(i)$ and $o(i)$ represent a mover's destination and origin, respectively. Further note that δ_{it} is a year-specific measure–i.e., it is the difference in destination-origin VA Share for a specific year t. This stands in contrast to the δ_i measure used in our main analysis, which is a time-invariant measure.

- **Step 4**: To obtain an aggregated event study coefficient (θ_r) for an event time r, we aggregate the event study coefficients θ_{rm} across move years—weighting by the number of movers associated with the estimates of θ_{rm}. We calculate the standard errors of the weighted average coefficients analogously, under an additional assumption that θ_{rm} are independent across move years. We can write these aggregations as:

$$\theta_r = \sum_{m=2002}^{2014} \frac{N_{rm}}{N_r} \theta_{rm} \quad \text{and} \quad SE(\theta_r) = \sqrt{\sum_{m=2002}^{2014} \left(\frac{N_{rm}}{N_r}\right)^2 \text{VAR}(\theta_{rm})} \quad \text{(B4)}$$

  where N_{rm} is the number of movers observed for an event time r among those who moved in year m and N_r is the total number of movers observed for an event time r across all move years (i.e., $N_r \equiv \sum_{m=2002}^{2014} N_{rm}$).

Appendix Figure A9 displays our baseline event study coefficients (Figure 3 in the text) as well as the (aggregated) event study coefficients (θ_r) that result from the alternative method described above. The estimates from this alternative imputation method are very similar to the baseline estimates.

B.2 Supplemental Analyses

This section discusses several analyses that were not covered in detail in the main text, each of which is discussed in its own sub-section, below.

B.2.1 Extensive Margin Analysis

While our primary measure for analysis is the share of patient visits at the VA, a measure which incorporates both extensive-margin usage and intensive-margin treatment intensity, we also perform additional analysis where $y = \mathbf{I}(VA > 0)$ to isolate the extent to which place determines whether individuals have any VA usage at all. The results of this analysis are displayed in Appendix Figures A15 and A16. As shown by the figure, the extensive-margin analysis yields highly similar results to our main specification, though the estimates are slightly larger across all types of care. In addition, overall utilization measures, along with outpatient and primary care, are generally less responsive to controlling for distance, implying that distance from VA facilities is more likely to affect the intensity or frequency of recurring treatment received through the VA, rather than dissuading veterans from utilizing those services altogether.

B.2.2 Alternative Analyses of Place-Based Estimates

In order to supplement our analysis of place effects in Section 3.3, we perform the following additional exercises:

Correlates Analysis with Summary Categories. In Appendix Figure A14, we collapse the results of our correlates analysis (Figure 4) into several aggregated categories to better understand which factors may be driving patients to increase their VA Share. As displayed in the figure, the only correlate-types that consistently and meaningfully affect place-based drivers of VA choice across all care types are patient-facing measures relating to the VA, such as outpatient satisfaction rankings and timeliness of care. Non-VA patient-facing measures are significant for emergency and outpatient care types, meaning that higher ratings of non-VA facilities are associated with lower causal place-effects on VA Share.

Decomposition of Variation in Place Effects. To supplement our decomposition of variance discussed in the main text (Figure A11), we also perform a Shapley-Owen decomposition (Israeli, 2007; Huettner and Sunder, 2012). The purpose of this decomposition is to determine the share of R-squared that is given to a given characteristic or set of characteristics on an outcome. In our application, we are interested in the recovered place effects ($\widehat{\gamma}_j$) as outcomes, while using covariates for VA Quality, Non-VA Quality, Demographics, and Access, respectively, as key characteristics. This apportionment is determined by obtaining the "marginal contribution" to R-squared, which is defined as the reduction in R-squared that occurs when the characteristics are removed from the model. Because the marginal contribution may vary depending on the order in which the characteristics are removed, several permutations are calculated, wherein each set of characteristics is removed first, second, third, and then fourth.

Formally, let K denote the set of characteristic blocks, let $\Theta(K)$ represent the set of $|K|!$ permutations of K, and let $P(\theta, g)$ represent the set of all characteristic groups that appear prior to characteristic group g. Then, the Shapley value of the group–i.e., that group's relative contribution to R^2–is defined as:

$$S_g = \frac{1}{|\Theta(K)|} \cdot \sum_{\theta \in \Theta(K)} \Big[R^2\big(P(\theta, g) \cup \{g\}\big) - R^2\big(P(\theta, g)\big) \Big]$$

The results of this exercise are presented in Appendix Figure A17, which demonstrates that observed characteristics contribute to 21-22% of the explained variation in our recovered place effects (when calculated using summary measures), and between 22% and 33% when examining individual care types. The most 'important' place characteristics, in terms of explanatory power, are place demographics, while quality and access measures all explain a roughly equal share of the summary measures.

Correlations of Place Effects ($\widehat{\gamma}_j$). After recovering the causal effects of place on VA share, we correlated them with the observed averages in the raw data, aggregated to the VA $\times$ HRR level. The results of this exercise are presented in Appendix Figure A18. As demonstrated by the figure, while place effects are moderately correlated with raw averages, there is substantial deviation. The correlations are strongest for inpatient utilization and weakest for combined measures of care.

Moreover, causal place effects for each care type were correlated with each other to assess the degree in which places that increased VA Share in a specific care type (e.g., outpatient) also increased it in others. The results of this analysis are presented in Appendix Figure A19. As displayed by the figure, the place effects are typically very highly correlated, with limited exceptions, and that these correlations are comparable to the relationships in the raw data presented in Appendix Figure A4.

Other Presentations of Place Effects ($\widehat{\gamma}_j$). We provide a map of our recovered place effects in Appendix Figure A20. Following the standards for presenting area-estimates of causal effects, we used an Empirical Bayes procedure (Walters, 2024) to adjust our estimates, and only present those that are statistically different from zero with 90% confidence. As demonstrated by the figure, causal place effects tend to be highest in the Western United States and Appalachia.

In an alternative presentation (Appendix Figure A21), we present causal effects aggregating up to the three-digit VA-station level. Places with positive impacts on VA share are colored blue, while those with negative impacts are colored red. Color intensity scales with effect size, and only estimates that significantly differ from zero with 90% confidence are presented. Our findings from this analysis reinforce earlier findings regarding (1) the degree to which causal effects are correlated across care type and (2) the fact that areas in the Western United States/Appalachia tend to have higher causal impacts.

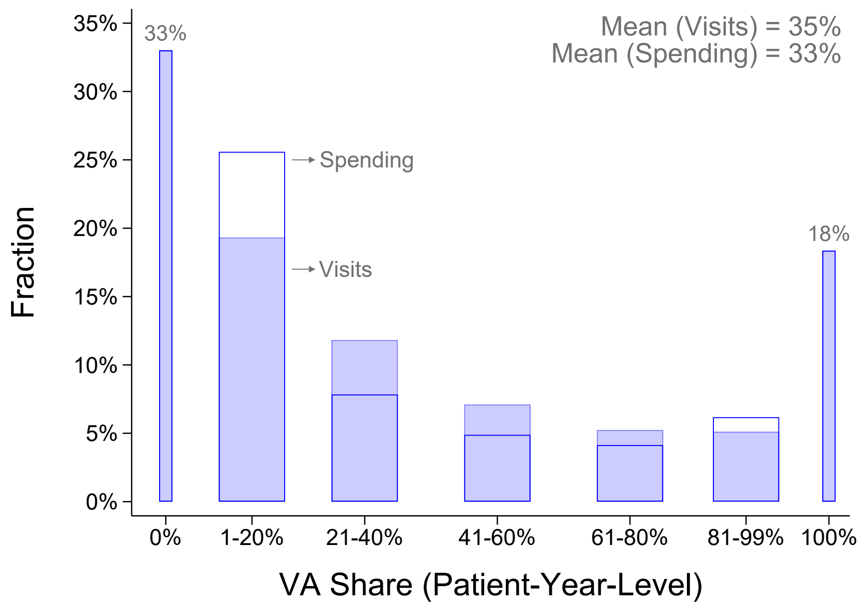
B.2.3 Analyses of Log(Utilization)

Comparability of Results with Finkelstein, Gentzkow and Williams (2016). In order to determine the comparability of our sample and data with that used in Finkelstein, Gentzkow and Williams (2016), we replicated their primary analysis, replacing the dependent variable and $\widehat{\delta}$ in Equation 1 with log(utilization), rather than VA Share. As displayed in Appendix Figure A22, 43% to 49% of the geographic variation in log utilization within our sample is driven by place effects. This is highly similar to the 40-50% figure found by Finkelstein, Gentzkow and Williams (2016), giving credence that veterans in our sample may make decisions in a way that is similar to the Medicare-eligible population at large.

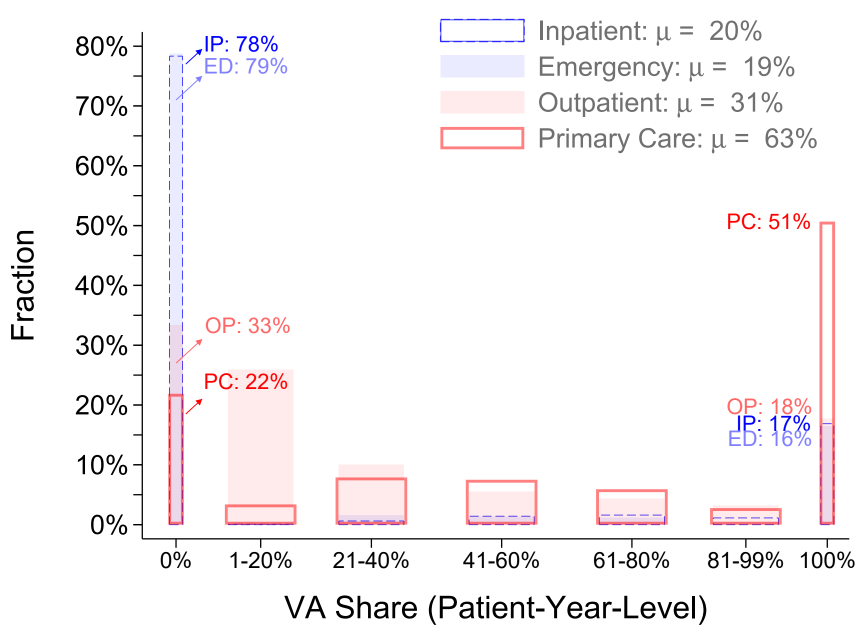
Relationship Between VA Share and Utilization. We also leveraged our sample to determine the relationship between VA Share and Utilization, as demonstrated by Appendix Figure A23. In the top row, we present descriptive statistics showing the VA $\times$ HRR-level relationship between overall utilization, VA utilization, and Medicare utilization (using measures based on visits and spending in Panels A and B, respectively). As demonstrated by these figures, as VA utilization increases, it is associated with a slightly-larger-than-offsetting decrease in Medicare utilization, leading to small decreases in overall utilization. We extended this analysis by re-estimating Equation 1 with log utilization as an outcome and a $\widehat{\delta}$ variable based on VA Share, the results of which are presented in the bottom row of the figure. We find that a 10 percentage-point change in VA Share is associated with a decrease in utilization of approximately 3.0% and 5.1% for visits (Panel C) and spending (Panel D), respectively.

As stated above, we consider this relationship to be an *association*, rather than a causal effect. Areas with higher VA Share may share a variety of factors that could be driving this decrease in utilization, aside from the direct impact of reallocating care to the VA. Nonetheless, the association does suggest that the VA is less resource-intensive when treating its patients.

Figure A1 – Many Veterans Receive Care from Both VA and Non-VA Providers



(a) Outpatient

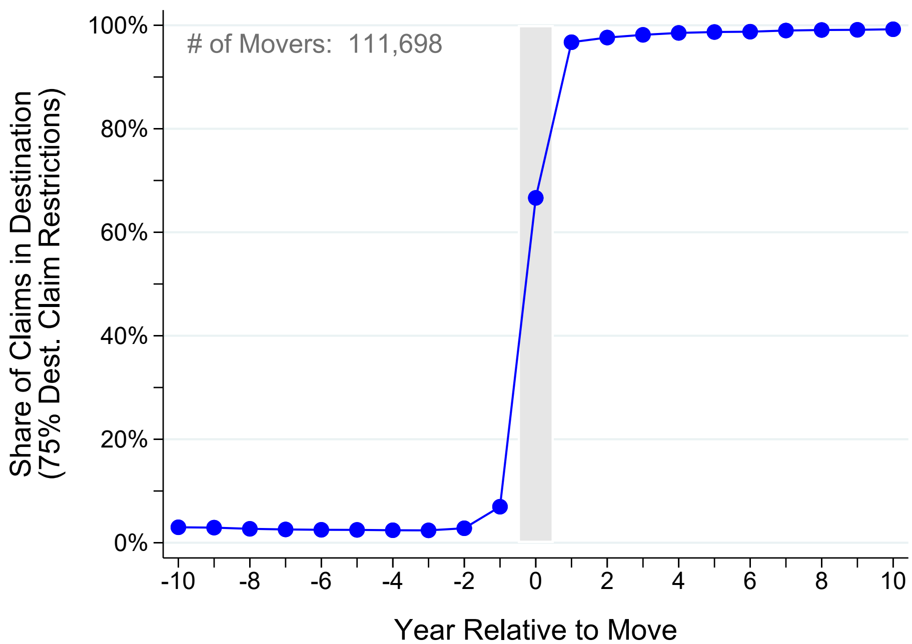


(b) Inpatient

Notes: The purpose of this figure is to demonstrate variation in VA Share on the individual level and by type of care. As demonstrated by the figure, while a plurality of veterans receive either none or all of their care at the VHA, many patients choose to receive care from both systems in any given year.

Source: Author calculations using Medicare claims and VHA Administrative data.

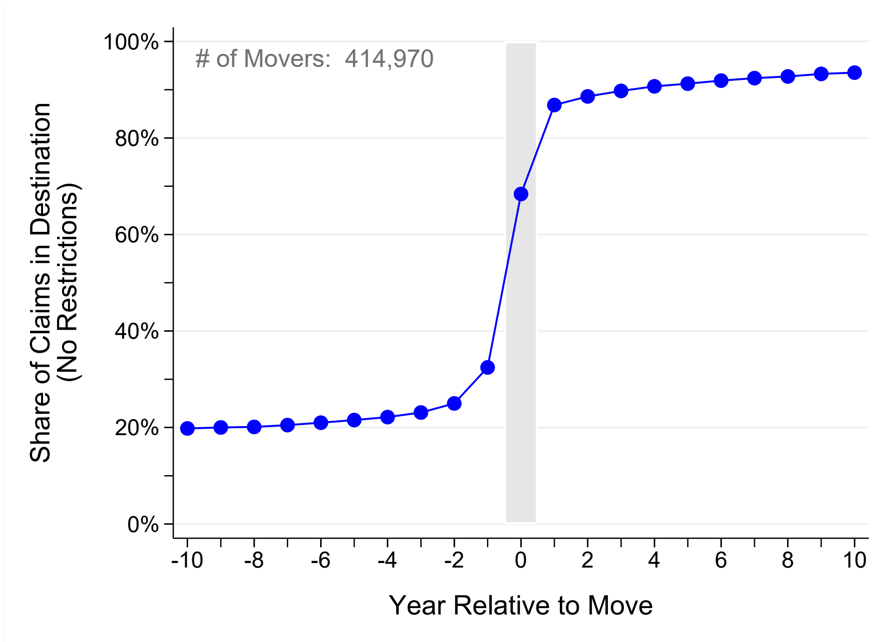
Figure A2 – Movers in our Final Sample Receive Effectively All Care in their Destination



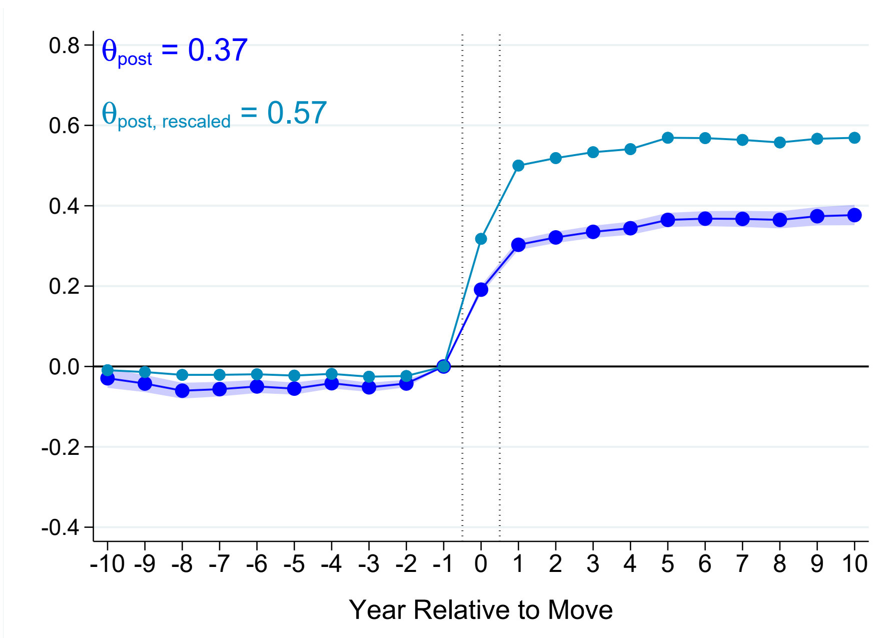
Notes: The purpose of this figure is to display the degree to which movers in our final sample obtain care in their destination VA×HRR.

Source: Author calculations using Medicare claims and VHA Administrative data.

Figure A3 – Scaled Results are Qualitatively the Same When No Sample Restrictions Are Imposed



(a) First-Stage with No Sample Restrictions

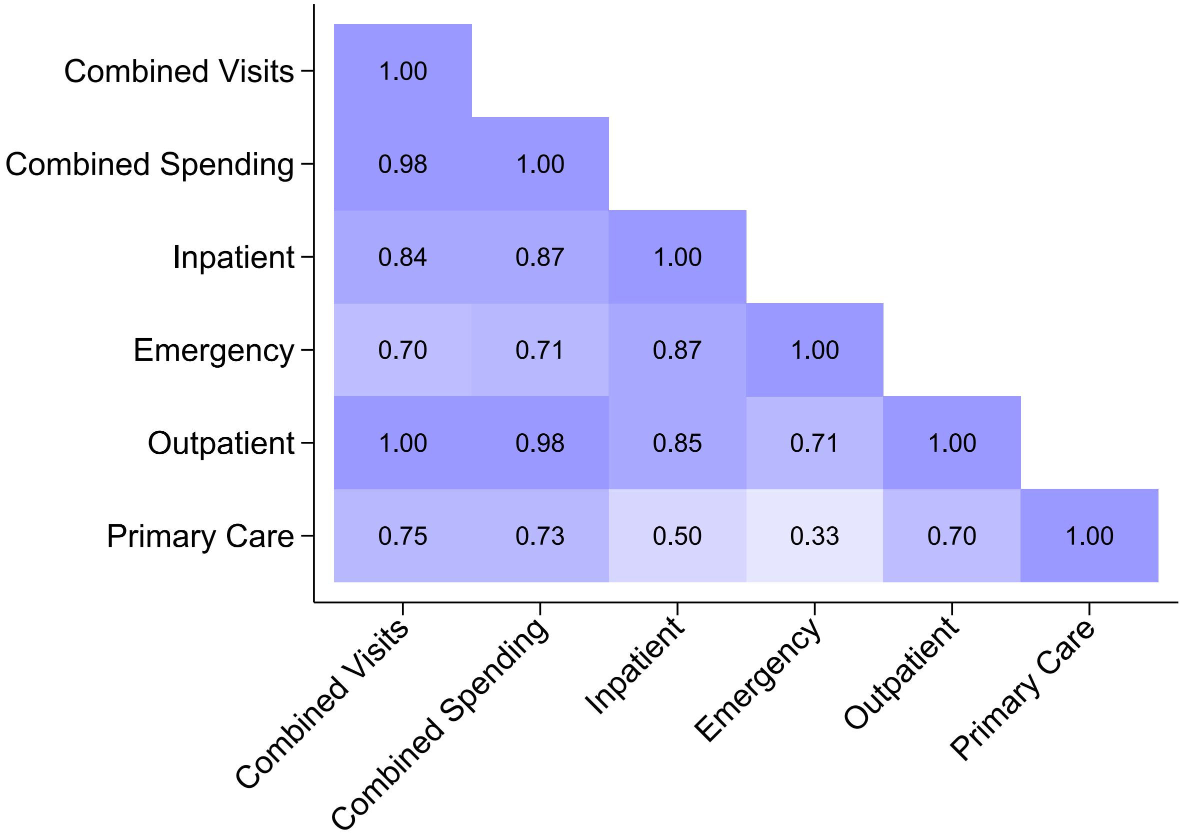


(b) Main Results with No Sample Restriction
(Combined Visits; Scaled)

Notes: The purpose of this figure is to demonstrate the degree to which movers obtain care in their destination VA × HRR when no sample restrictions are present (Panel (a)), and to reproduce our main analysis when using this unrestricted sample (Panel (b)). In Panel (b), the estimates are rescaled by the percentage of movers who demonstrate a shift in care from the origin to their destination VA × HRR.

Source: Author calculations using Medicare claims and VHA Administrative data.

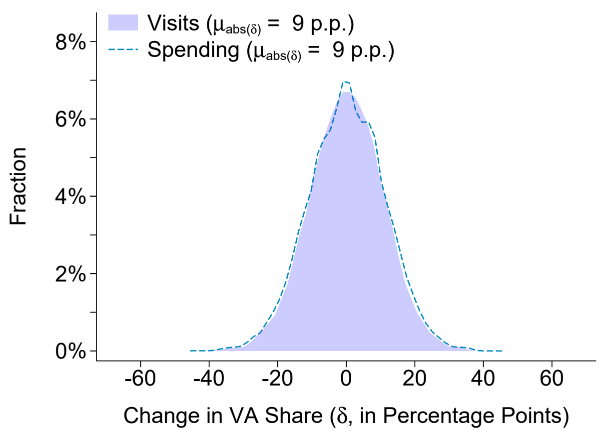
Figure A4 – VA Share is Highly Correlated Across Types of Care (VA $\times$ HRR Zone-Level)



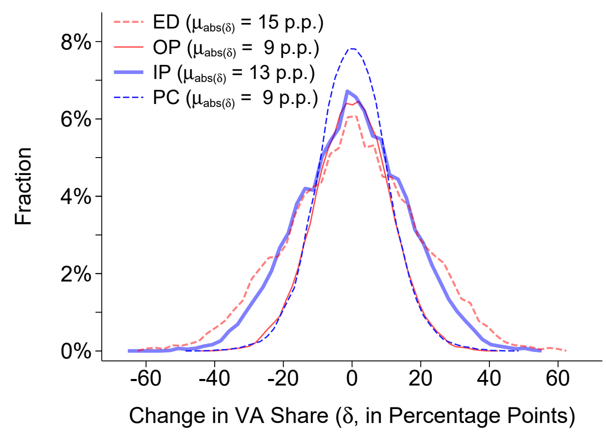
Notes: The purpose of this figure is to display cross-correlations of place-level VA Share across different measures of care. Each number in the figure displays the correlation coefficient between the types of care listed on the vertical and horizontal axes, which is also represented by the color intensity in the figure.

Source: Author calculations using Medicare claims and VHA Administrative data.

Figure A5 – There is Meaningful Geographic Variation in Move Size (By Measure of Care, VA × HRR Zone-Level)



(a) Move-Size Distribution: Combined Measures

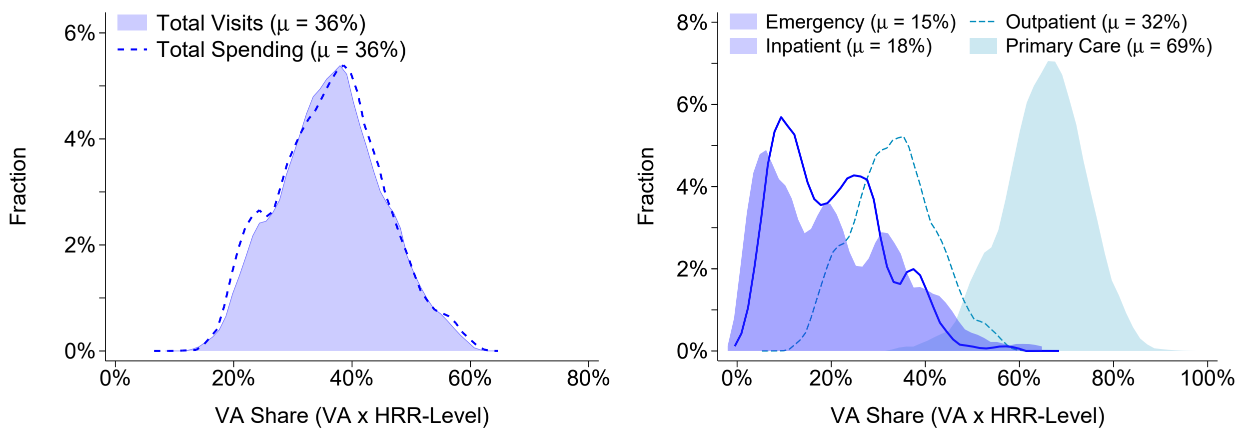


(b) Move-Size Distribution: Other Measures

Notes: The purpose of this figure is to display variation in move-size using different measures of care.

Source: Author calculations using Medicare claims and VHA Administrative data.

Figure A6 – There is Meaningful Geographic Variation in VA Share (By Measure of Care, VA × HRR Zone-Level)



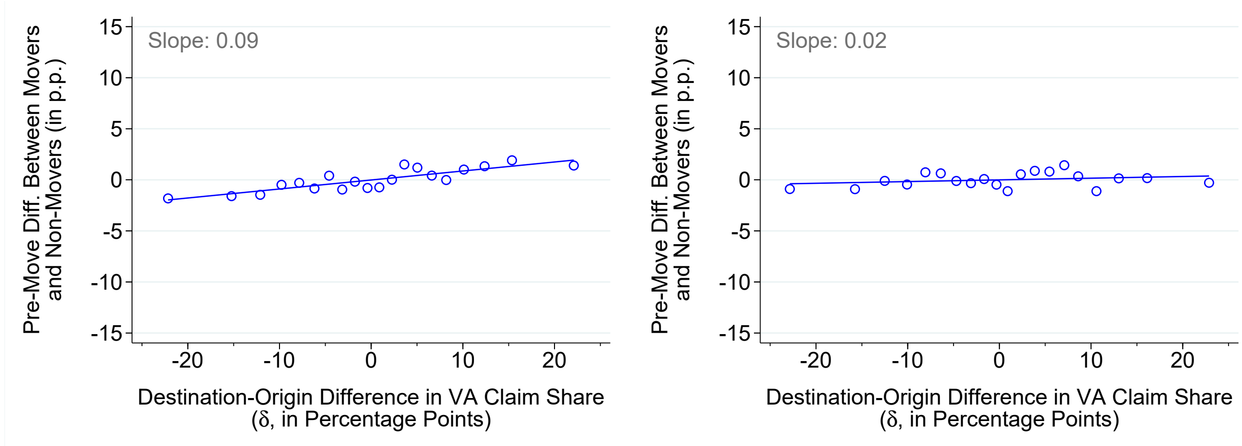
(a) VA Share Distribution: Combined Measures

(b) VA Share Distribution: Other Measures

Notes: The purpose of this figure is to display place-level variation in VA Share using different measures of care.

Source: Author calculations using Medicare claims and VHA Administrative data.

Figure A7 – There is a Small Correlation of Pre-Move Utilization and Move Size



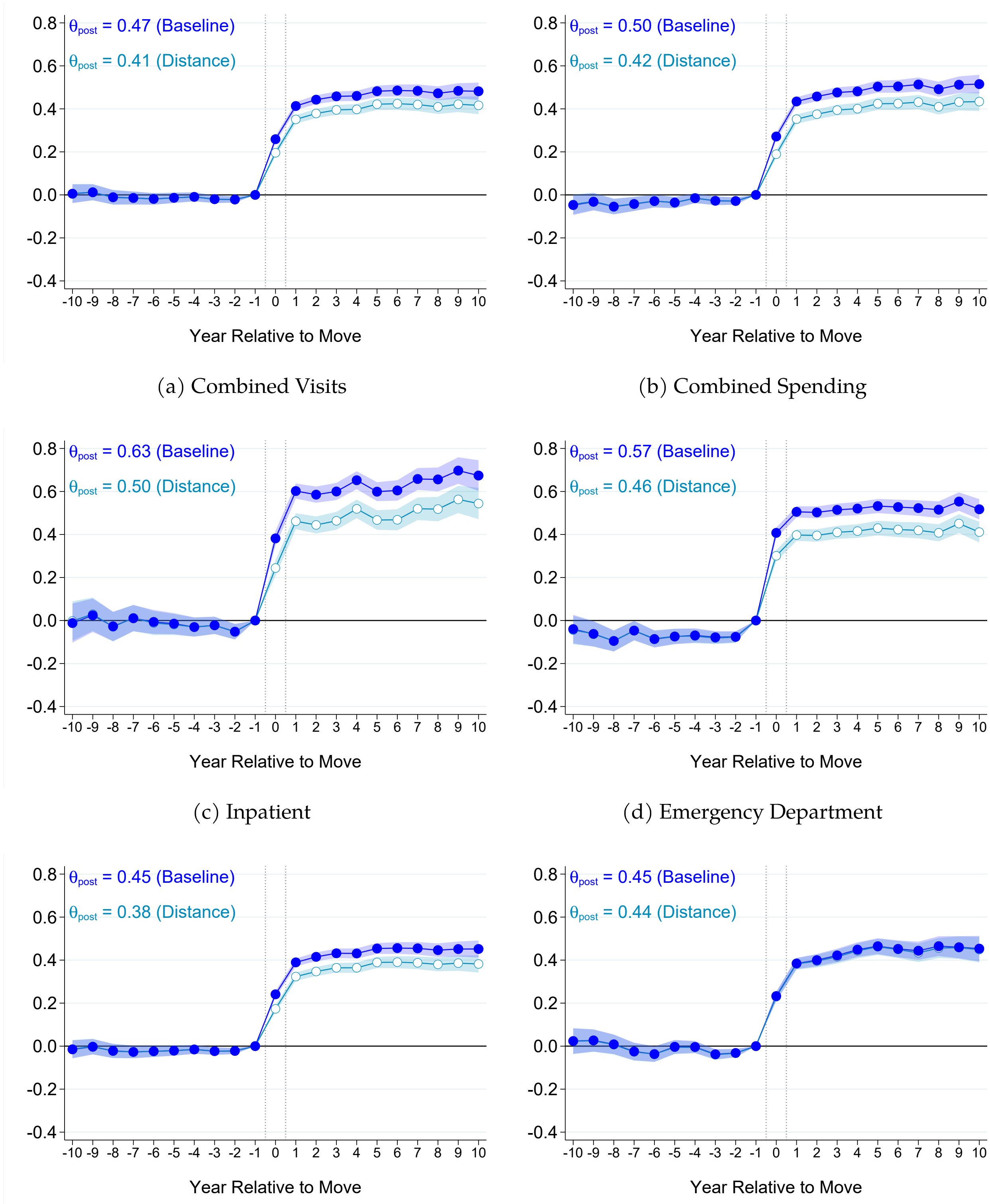
(a) Combined Visits

(b) Combined Spending

Notes: The purpose of this figure is to display the pre-move difference in VA Share by size of move (δ). Each dot represents a ventile of move size.

Source: Author calculations using Medicare claims and VHA Administrative data.

Figure A8 – VA Share is Responsive to Environment for All Types of Care



(a) Combined Visits

(b) Combined Spending

(c) Inpatient

(d) Emergency Department

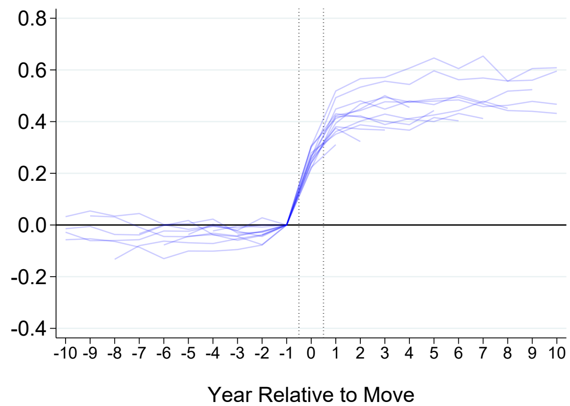
(e) Outpatient

(f) Primary Care

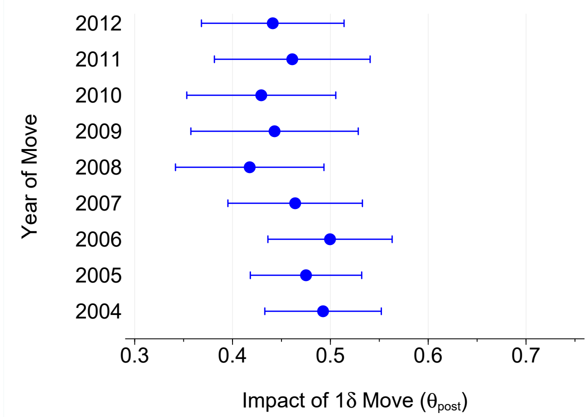
Notes: The purpose of this figure is to show main event study figures for VA Share. See main text for more discussion.

Source: Author calculations using Medicare claims and VA Administrative data.

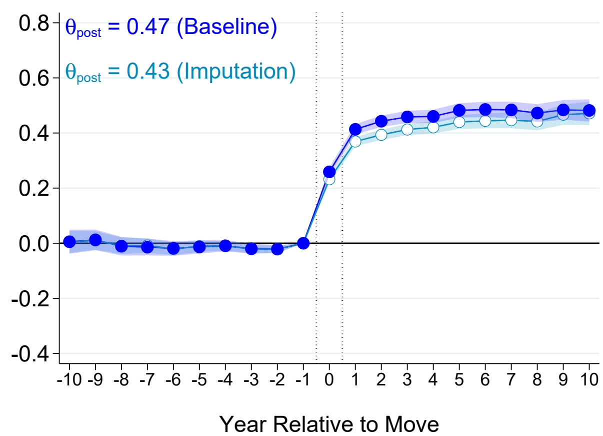
Figure A9 – Results are Robust to Alternative Estimation Methods - Imputation-Based Estimates and Estimates by Move Year



(a) Event Studies by Move Year



(b) Summary Estimates by Move Year

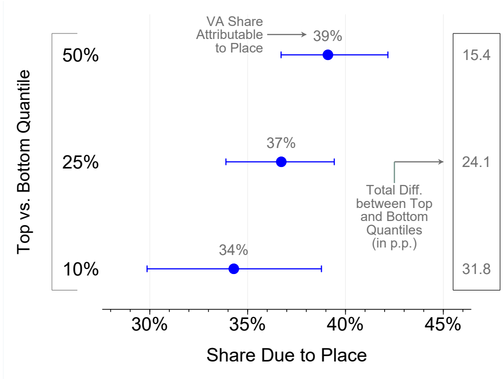


(c) Combined Visits: Baseline Estimates vs. Imputation-Based Estimates

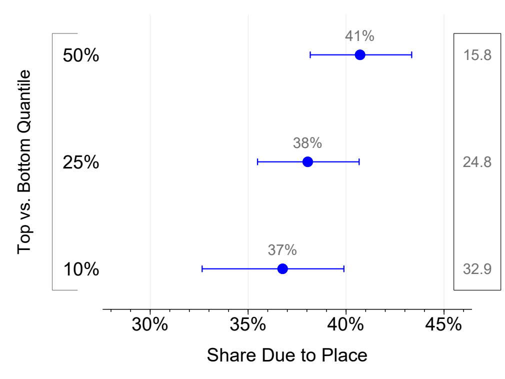
Notes: The purpose of this figure is to show robustness of our effects to estimation issues endemic to staggered difference-in-difference designs. Panel (a) illustrates the event study coefficients, derived from estimating Equation 1 separately for each move cohort. Finally, Panel (b) displays the results of estimating Equation 2 separately for each move cohort, so long as that cohort had at least three post-move and three pre-move periods. Panel (c) displays the main event study figure for VA Share (based on combined visits) contrasted with the alternative estimation results discussed in Appendix Section B.1.

Source: Author calculations using Medicare claims and VA Administrative data.

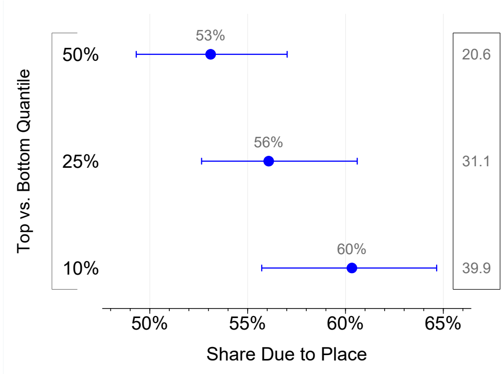
Figure A10 – Additive Decomposition in VA Share



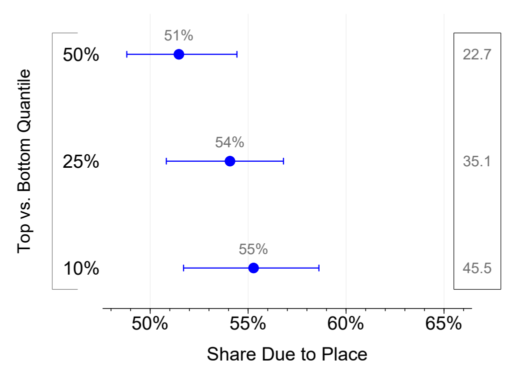
(a) Combined Visits



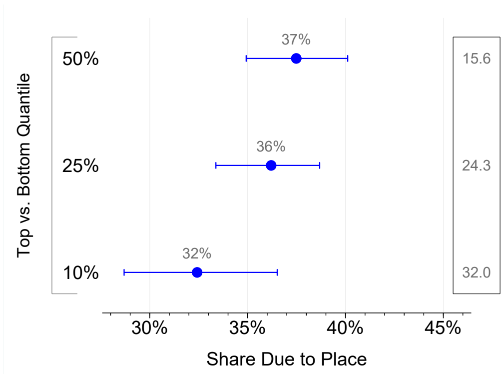
(b) Combined Spending



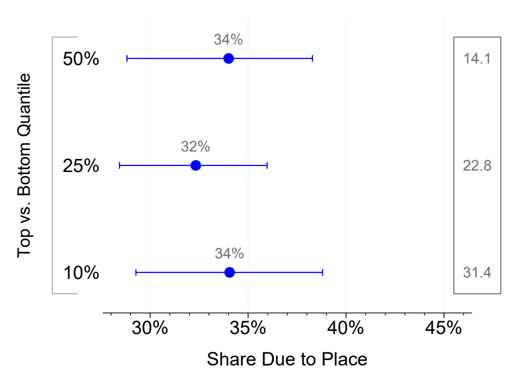
(c) Inpatient



(d) Emergency Department



(e) Outpatient



(f) Primary Care

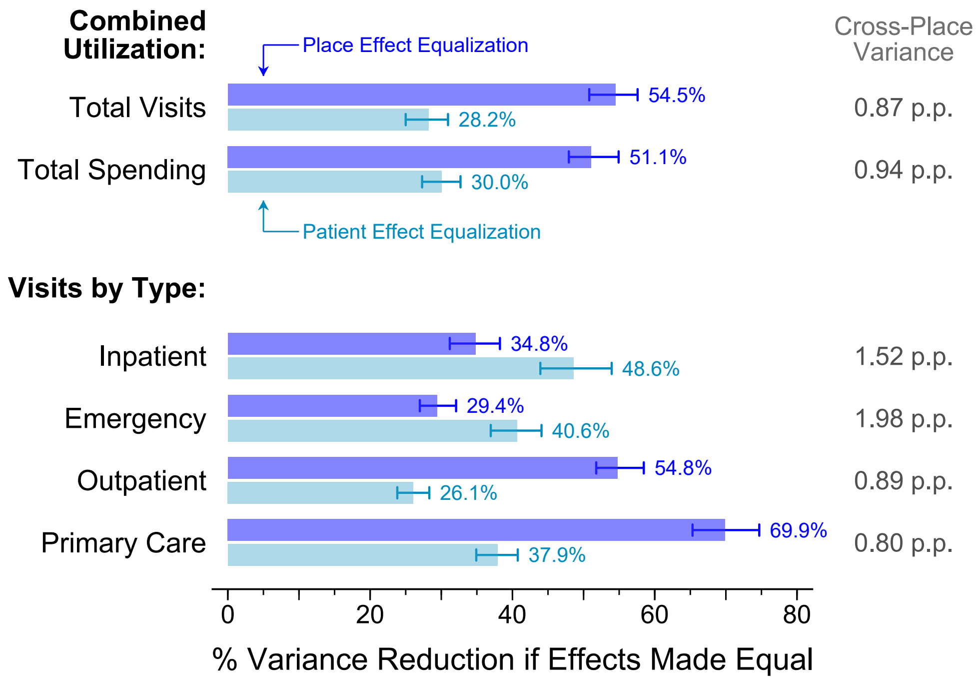
Notes: The purpose of this figure is to demonstrate the share of differences in geographic groups that are attributable to place effects ($\hat{\gamma}_j$). The geographies are grouped according to their respective averages of VA Share$_j$ (e.g., so that the 50% line above is comparing areas that are above-median VA Share vs. those with below-median averages). Then, the share of the difference in between two groups (J and J') attributable to place effects is calculated as follows:

$$\text{Share Due to Place}(J, J') = \frac{\gamma_J - \gamma_{J'}}{\overline{y}_J - \overline{y}_{J'}}$$

where $\overline{y}_J$ represents the average outcome within the group (i.e., $\overline{y}_J = \frac{1}{|J|}\sum_{j \in J} \overline{\text{VA Share}_j}$) and γ_J represents the average place effect within the group (i.e., $\gamma_J = \frac{1}{|J|}\sum_{j \in J} \hat{\gamma}_j$). Confidence intervals calculated by 100 bootstrap repetitions of the patient-level regression described by Equation 3. See Table A3 for more detail.

Source: Author calculations using Medicare claims and VA Administrative data.

Figure A11 – Decomposition of Variance in VA Share



Notes: The purpose of this figure is to illustrate the degree of variance reduction if place effects and/or average individual effects were made equal. Equalization was calculated as:

$$\text{Percent Reduction if Equal } \textbf{Place} \text{ Effects} = 1 - \frac{\text{var}(\overline{\text{VA Share}}_j - \hat{\gamma}_j + \overline{\gamma})}{\text{var}(\overline{\text{VA Share}}_j)}$$

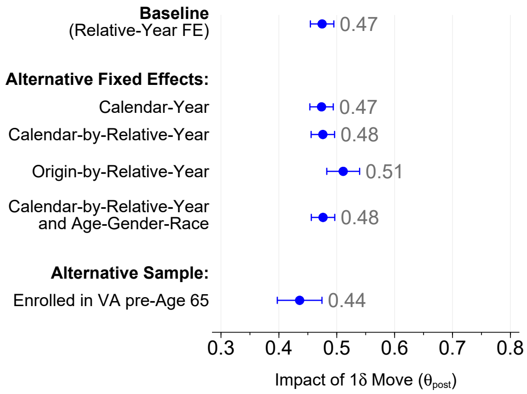
$$\text{Percent Reduction if Equal } \textbf{Patient} \text{ Effects} = 1 - \frac{\text{var}(\overline{\text{VA Share}}_j - y_j^* + \overline{y}^*)}{\text{var}(\overline{\text{VA Share}}_j)}$$

where $\overline{\gamma}$ is the average of all place effects, $y_j^* = \overline{\text{VA Share}}_j - \hat{\gamma}$ is the average individual effects in VA $\times$ HRR Zone j and $\overline{y}^*$ is the average of all individual effects. In other words, our equalization analysis subtracts out the applicable (place or average individual) effects from the given average and then re-adds the national average before computing the variance. It then divides this by the unmodified average (presented in the right-hand column of the figure) to determine the reduction of variance.

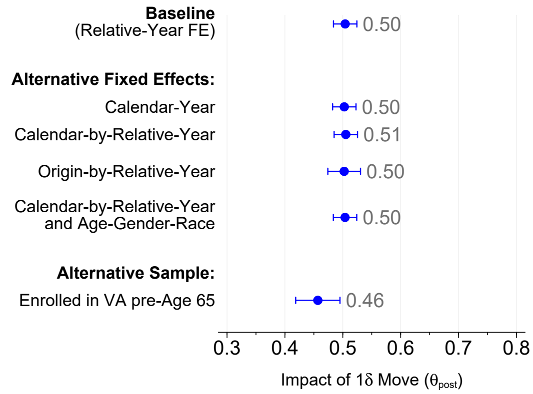
Confidence intervals calculated by 100 bootstrap repetitions of the patient-level regression described by Equation 3.

Source: Author calculations using Medicare claims and VA Administrative data.

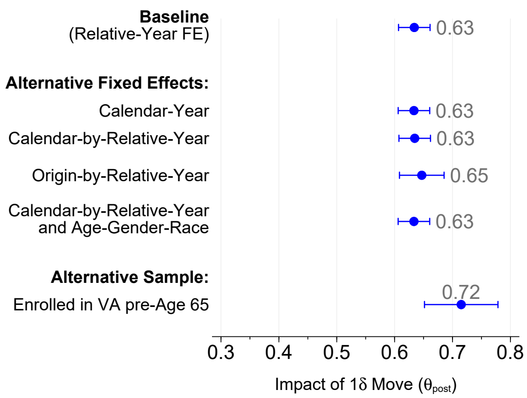
Figure A12 – Results are Robust to Alternative Fixed Effect Specifications and Samples



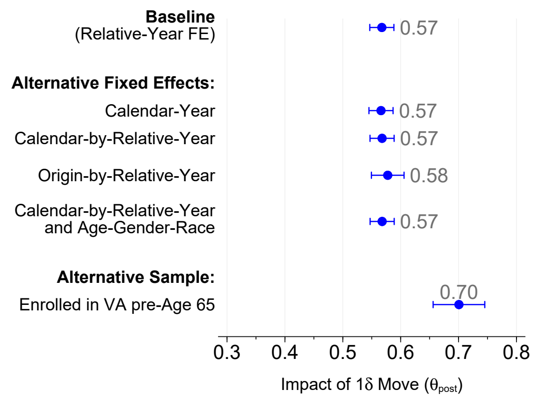
(a) Combined Visits



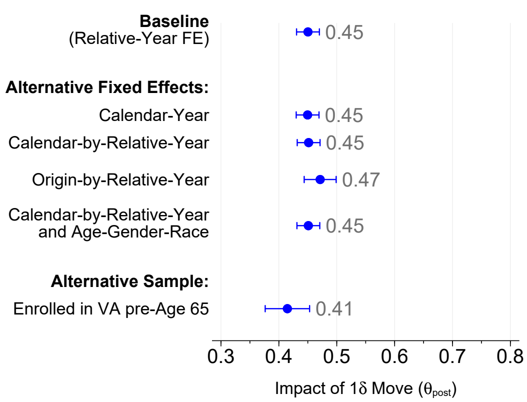
(b) Combined Spending



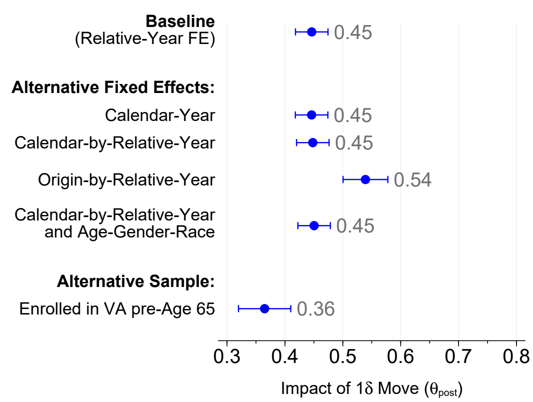
(c) Inpatient



(d) Emergency Department



(e) Outpatient



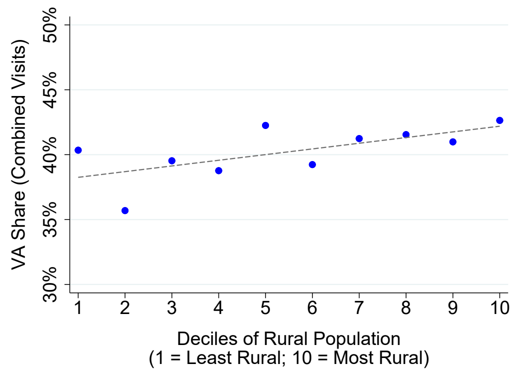
(f) Primary Care

Notes: The purpose of this figure is to show summary estimates from Equation 2 with different fixed-effect controls and sample frames to demonstrate robustness of our results.

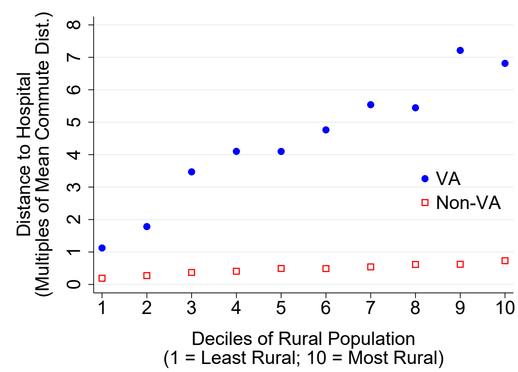
The top row represents our baseline specification, which includes relative-year fixed effects (in addition to individual- and age-bin-fixed effects). The second row ("Absolute-Year FE") switches the relative-time FE for absolute-time FE, while the third row ("Calendar-by-Relative-Year FE") interacts them both. The fourth row interacts movers' origin VA × HRR zone with relative-year to account for possible endogenous move choices. The last row of the "Alternative Fixed Effects" section includes relative-by-calendar time FE and also age-bin-by-race-by-gender FE. Finally, the last row utilizes an alternate sample of only individuals who were known to have been associated with the VA prior to age 65.

Source: Author calculations using Medicare claims and VA Administrative data.

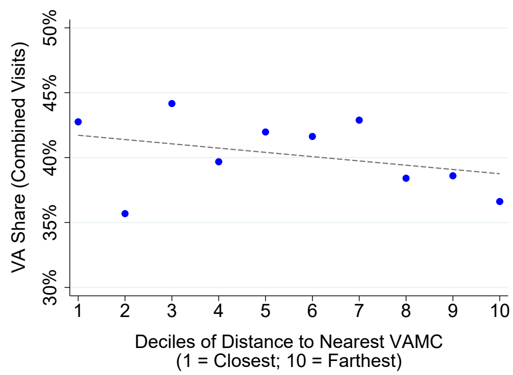
Figure A13 – VA Share is Only Loosely Correlated with Rurality and Distance to the Nearest VA Hospital



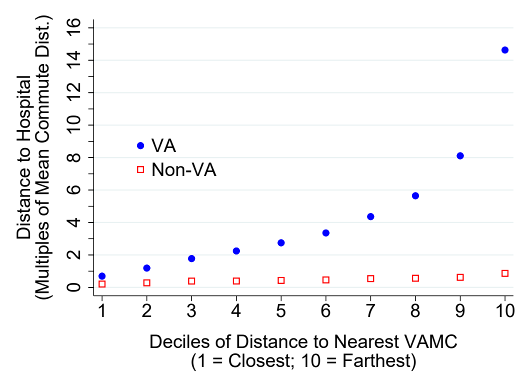
(a) VA Share by Rurality of VA × HRR Zone



(b) Hospital Distance by Rurality of VA × HRR Zone



(c) VA Share by Avg. Dist. to Nearest VA Hospital in VA × HRR Zone



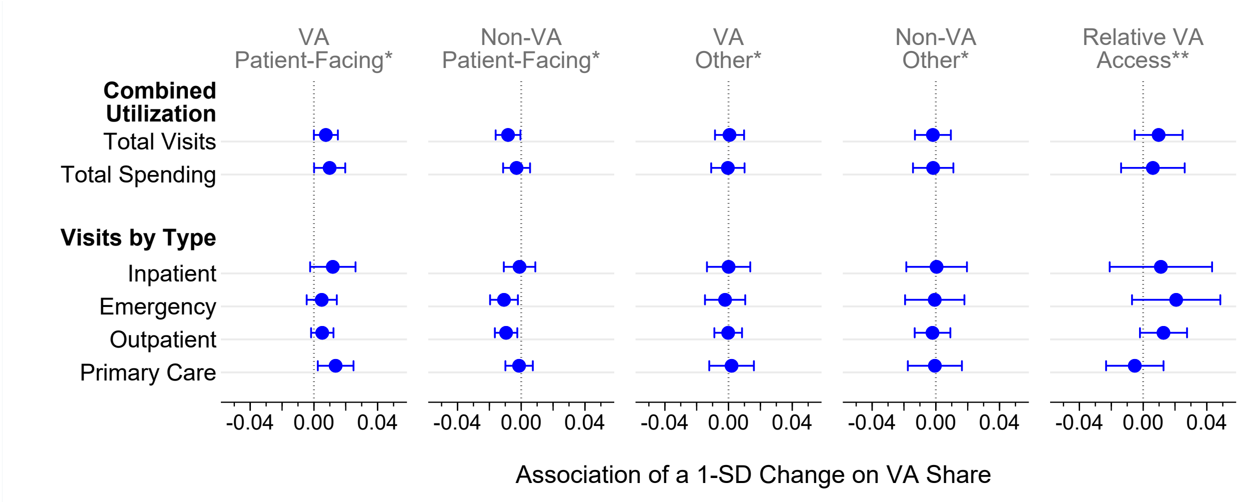
(d) Hospital Distance by Avg. Dist. to Nearest VA Hospital in VA × HRR Zone

Notes: The purpose of this figure is to demonstrate how VA Share varies by deciles of rurality and distance to the nearest VA hospital (Panels (a) and (c), respectively). For context, Panels (b) and (d) display the average distance for each of these measures.

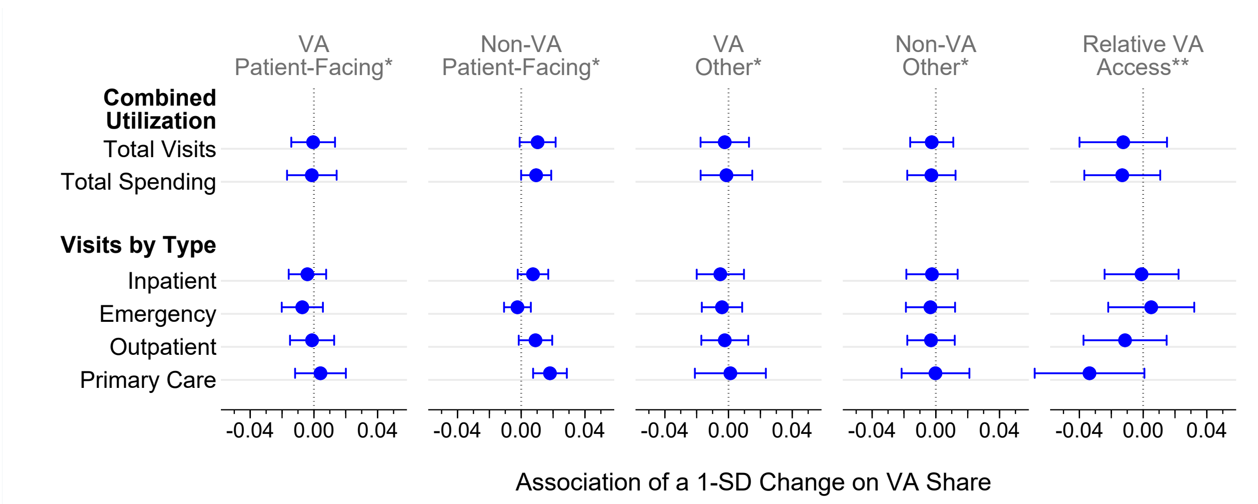
As shown by the figure, VA Share is weakly related with both the degree of rural population (positive relationship) and average distance to the nearest VA (negative relationship), suggesting that neither are a major factor in the choice between obtaining care through the VA or via private provision.

Source: Author calculations using Medicare claims, VA Administrative data, and 2008-2012 American Community Survey (Manson et al., 2023). ‘

Figure A14 – Correlates Analysis by Measure of Care (Summary Categories)



(a) Average Place Effects



(b) Average Person Effects

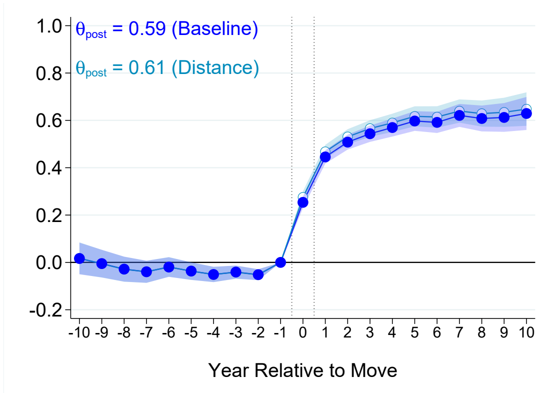
*VA and Non-VA Characteristics are coded so that higher values are better for patients.

**VA Access is coded so that higher values represent better relative access to VA facilities.

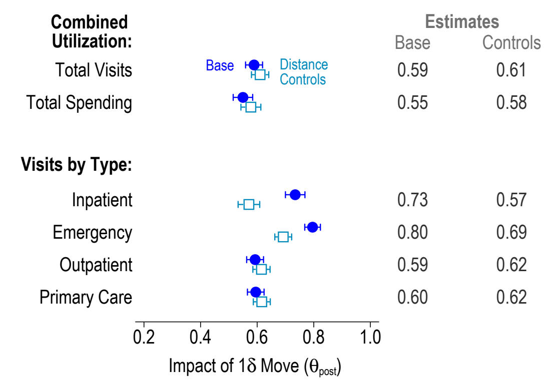
Notes: The purpose of this figure is to display the results of our correlates analysis discussed in Section 3.3. These estimates are collapsed to the group-level for purposes of clarifying analysis. Panel (a) displays correlates of place effects ($\hat{\gamma}_j$), while Panel (b) displays correlates of average individual effects ($\overline{\text{VA Share}}_j - \hat{\gamma}_j$). Standard errors calculated by 100 bootstrap repetitions of the patient-level regression described by Equation 3.

Source: Author calculations using Medicare claims and VA Administrative data. Author calculations using data from Medicare claims, VA Administrative databases, 2008-2012 American Community Survey (Manson et al., 2023), Dartmouth Atlas of Care, Hospital Compare, and VA SAIL.

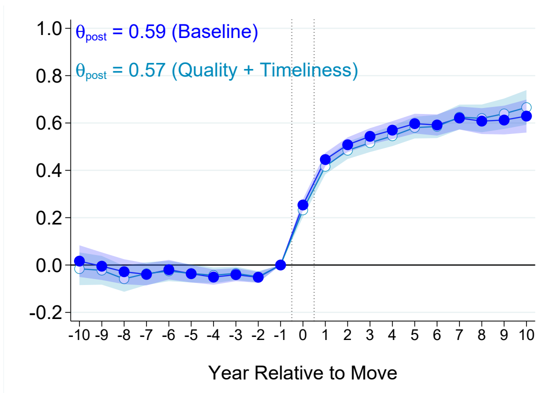
Figure A15 – Extensive-Margin Analyses Yields Qualitatively Similar Results to Using Main Outcome



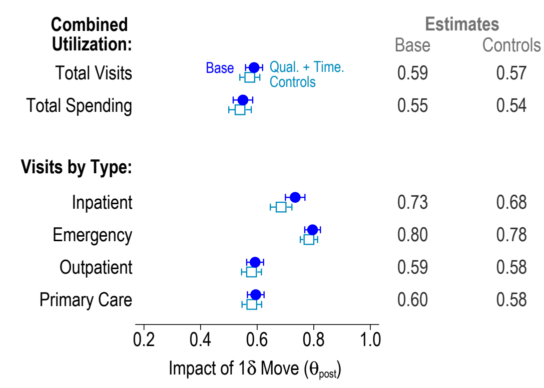
(a) Event Study w/ Distance Controls



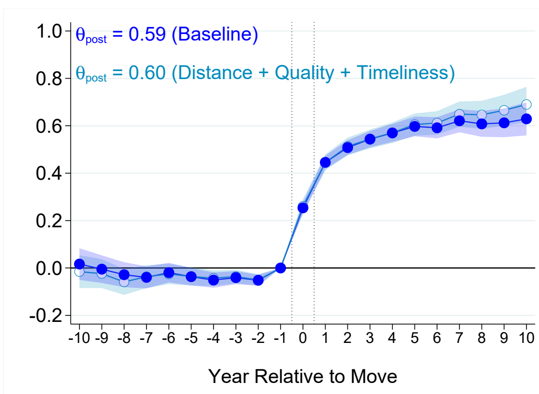
(b) Summary Coef. w/ Distance Controls



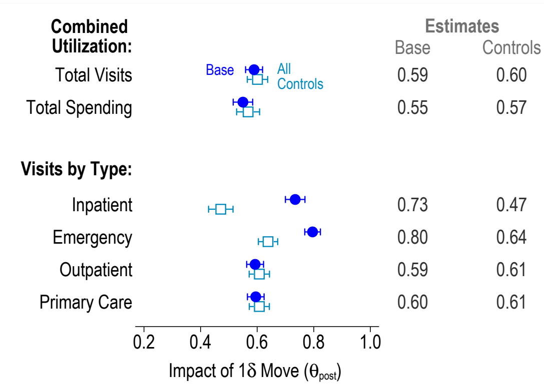
(c) Event Study w/ Quality and Timeliness Controls



(d) Summary Coef. w/ Quality and Timeliness Controls



(e) Event Study w/ Distance, Quality, and Timeliness Controls

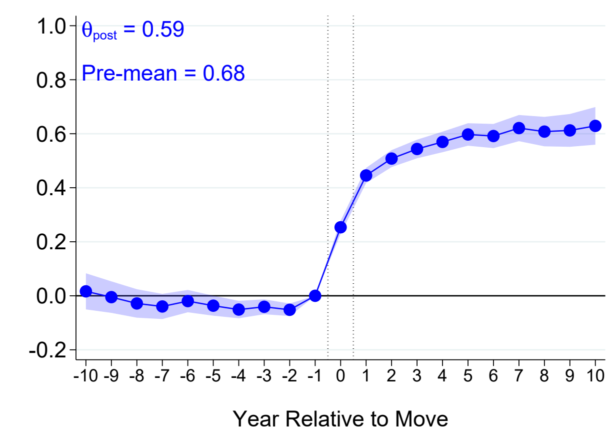


(f) Summary Coef. w/ Distance, Quality, and Timeliness Controls

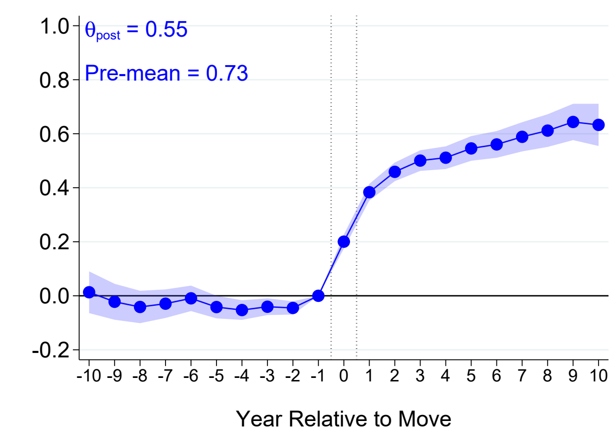
Notes: The purpose of this figure is to display the results of our main estimating equation (Equations 1 and 2) when applied to an extensive-margin measure (whether Any VA care is used). See notes to Figure 5 for more details.

Source: Author calculations using Medicare claims and VHA Administrative data.

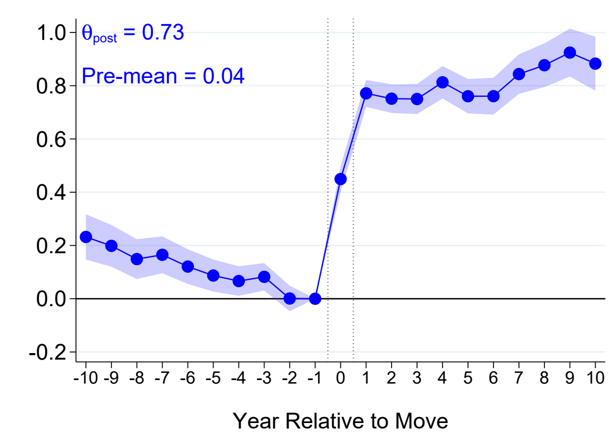
Figure A16 – Extensive-Margin VA Use is Responsive to Environment for All Types of Care



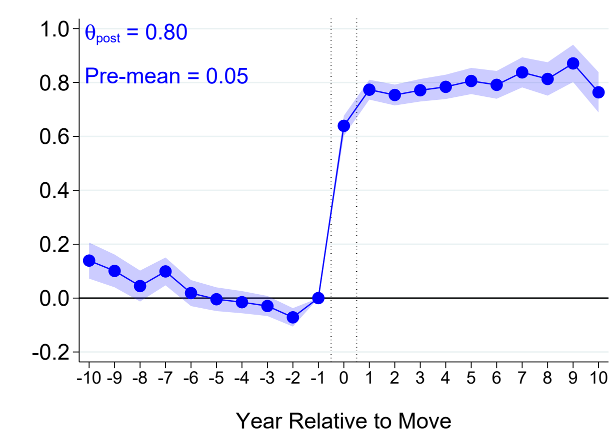
(a) Combined Visits



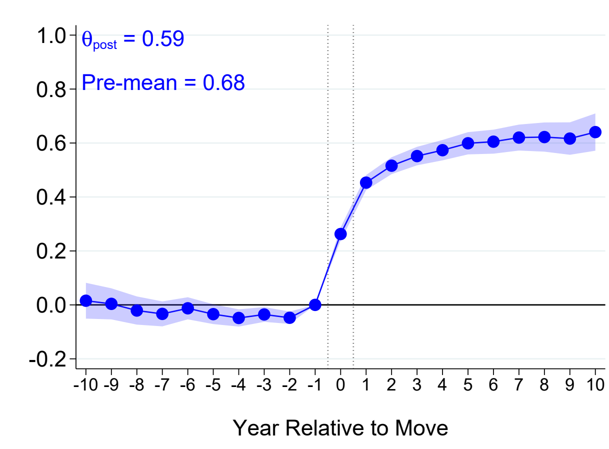
(b) Combined Spending



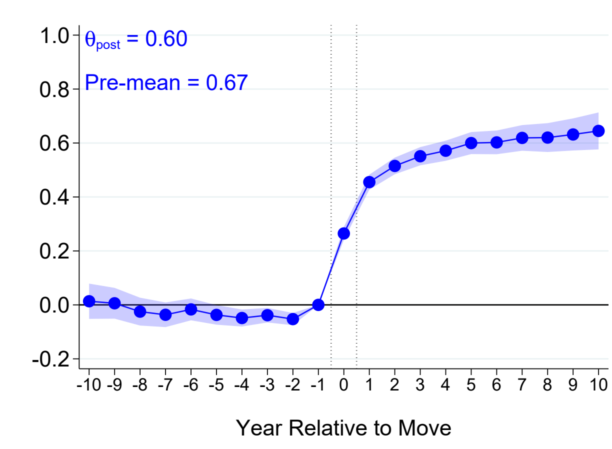
(c) Inpatient



(d) Emergency Department



(e) Outpatient

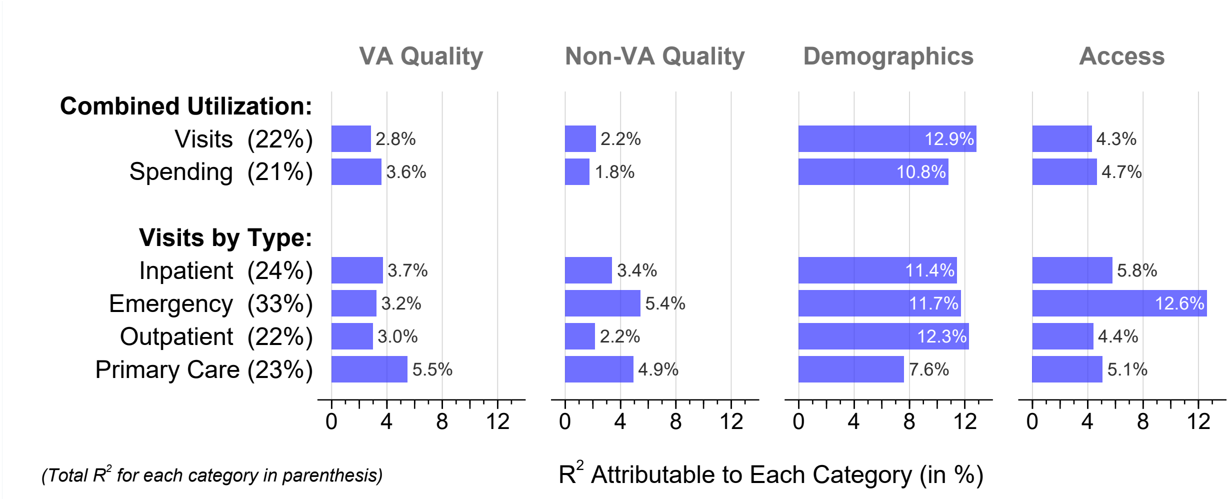


(f) Primary Care

Notes: The purpose of this figure is to show main event study figures for Any VA usage. See main text for more discussion.

Source: Author calculations using Medicare claims and VA Administrative data.

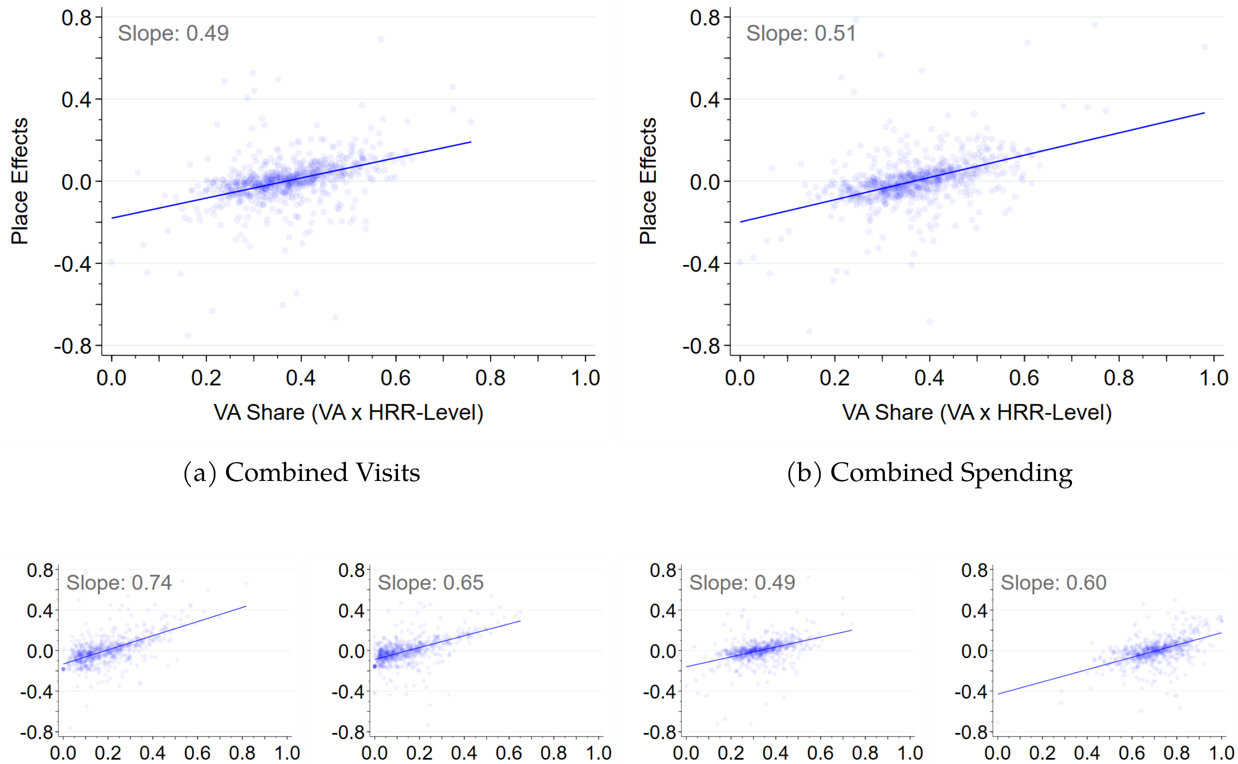
Figure A17 – Shapley-Owen Decomposition of R-Squared from Place-Effect Regressions



Notes: The purpose of this figure is to display the results of a Shapley-Owen decomposition (Israeli, 2007; Huettner and Sunder, 2012) of the regression of observable place characteristics on the causal place effects recovered from Equation 3. This method determines the amount of absolute R-squared that is attributable to a given characteristic or set of characteristics–in our application, the co-variates for VA Quality, Non-VA Quality, Demographics, and Access, respectively. This apportionment is determined by obtaining the "marginal contribution" to R-squared, which is defined as the reduction in R-squared that occurs when the characteristics are removed from the model. Because the marginal contribution may vary depending on the order in which the characteristics are removed, several permutations are calculated, wherein each set of characteristics is removed first, second, third, and then fourth. See Appendix Subsection B.2.2 for more detail.

Source: Author calculations using data from Medicare claims, VA Administrative databases, 2008-2012 American Community Survey (Manson et al., 2023), Dartmouth Atlas of Care, Hospital Compare, and VA SAIL.

Figure A18 – VA Share Averages are Moderately Correlated with Place Effects



(a) Combined Visits

(b) Combined Spending

(c) Inpatient

(d) Emergency

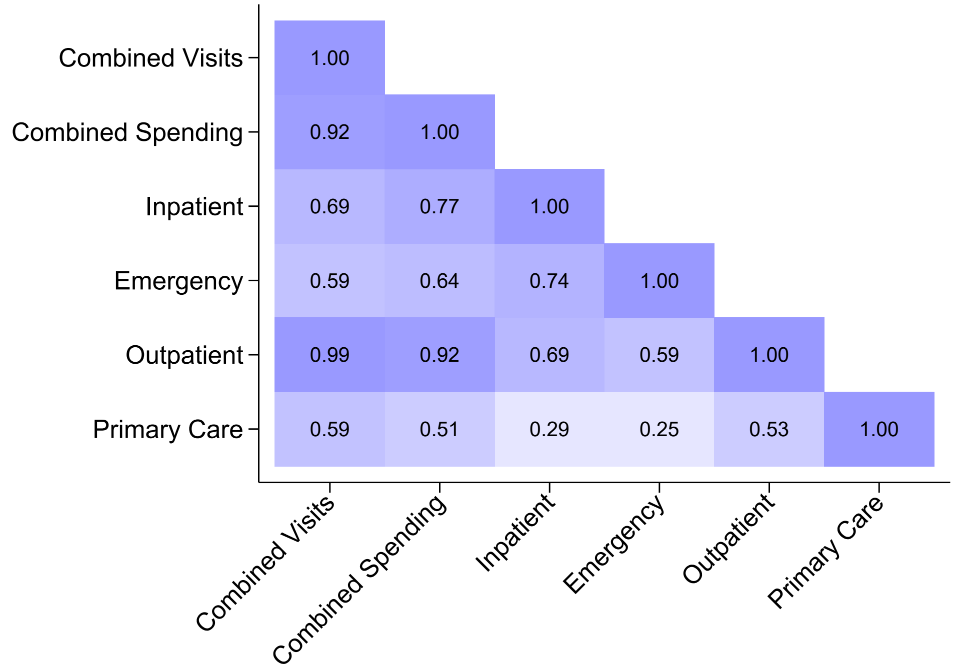
(e) Outpatient

(f) Primary Care

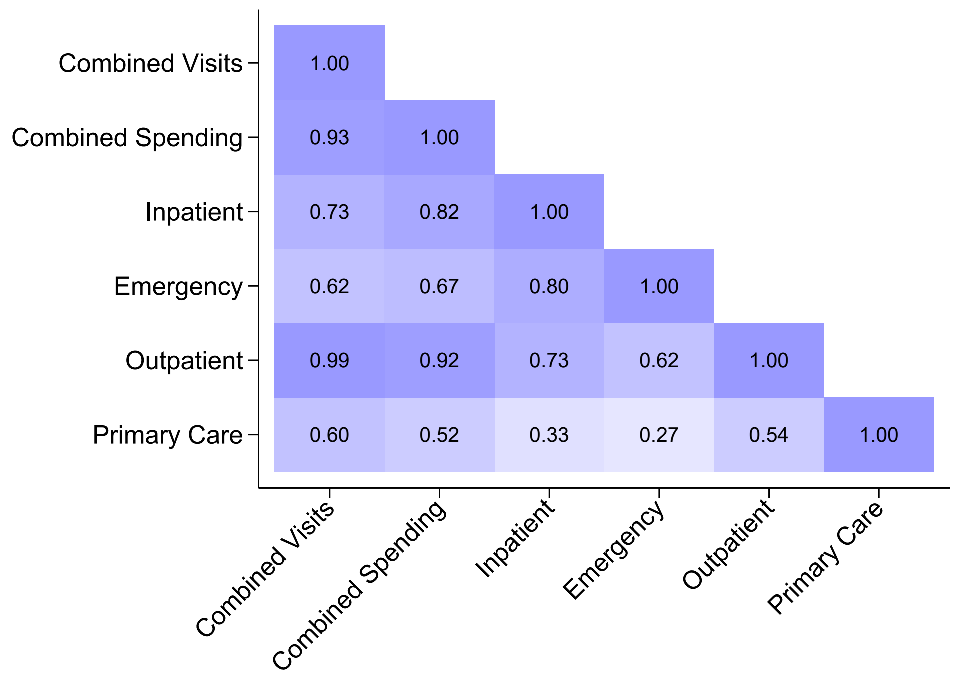
Notes: The purpose of this figure is to plot the relationship between VA Share averages on the VA $\times$ HRR Zone-level ($\overline{\text{VA Share}}_j$) and the causal place effects recovered from Equation 3 ($\hat{\gamma}_j$). Each point in the figure represents a different VA $\times$ HRR Zone.

Source: Author calculations using Medicare claims and VA Administrative data.

Figure A19 – Causal Place Effects ($\hat{\gamma}_j$) are Highly Correlated Across Types of Care



(a) Baseline ($\widehat{\gamma_j}$)

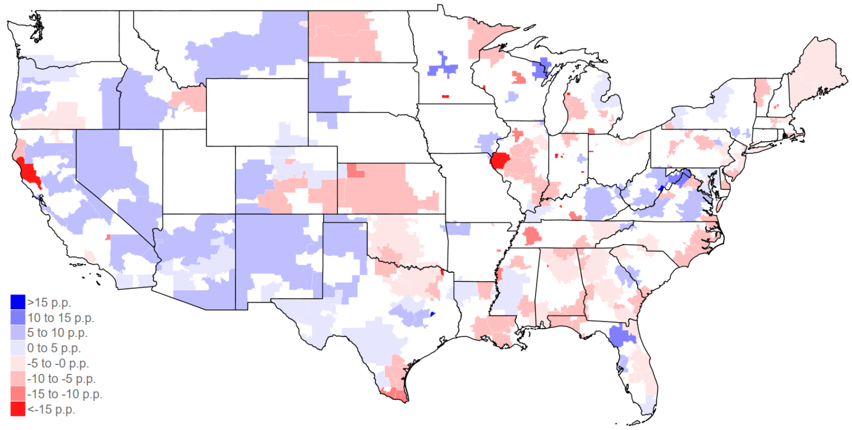


(b) Empirical-Bayes Adjusted ($\widehat{\gamma_j^{EB}}$)

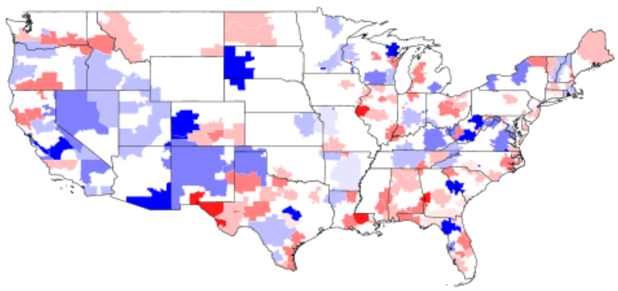
Notes: The purpose of this figure is to display cross-correlations of causal place effects ($\widehat{\gamma_j}$ from Equation 3) across different measures of care. The top panel presents baseline estimated effects, while the bottom presents correlations for Empirical-Bayes adjusted effects. Each number in the figure displays the correlation coefficient between the types of care listed on the vertical and horizontal axes, which is also represented by the color intensity in the figure.

Source: Author calculations using Medicare claims and VHA Administrative data.

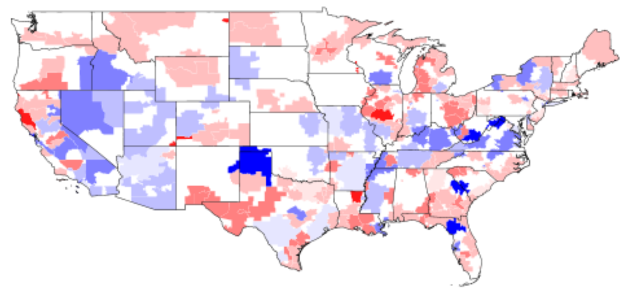
Figure A20 – Geographic Variation in the Causal Effect of Place on VA Share ($\hat{\gamma}_j$)



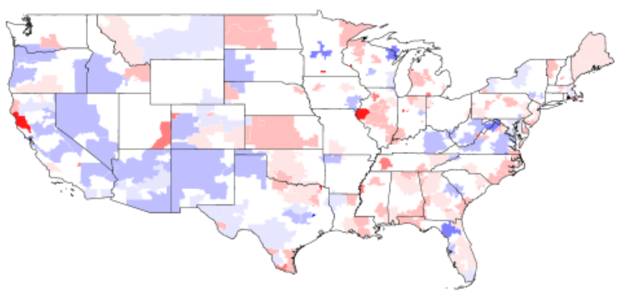
(a) Combined Visits



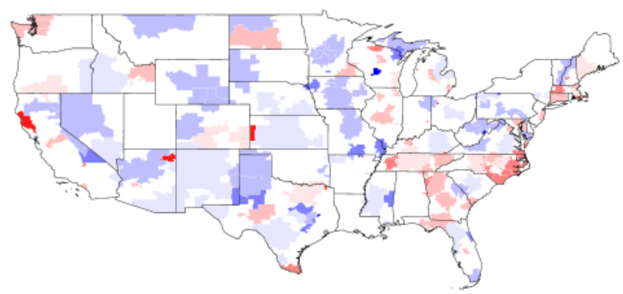
(b) Inpatient



(c) Emergency Department



(d) Outpatient

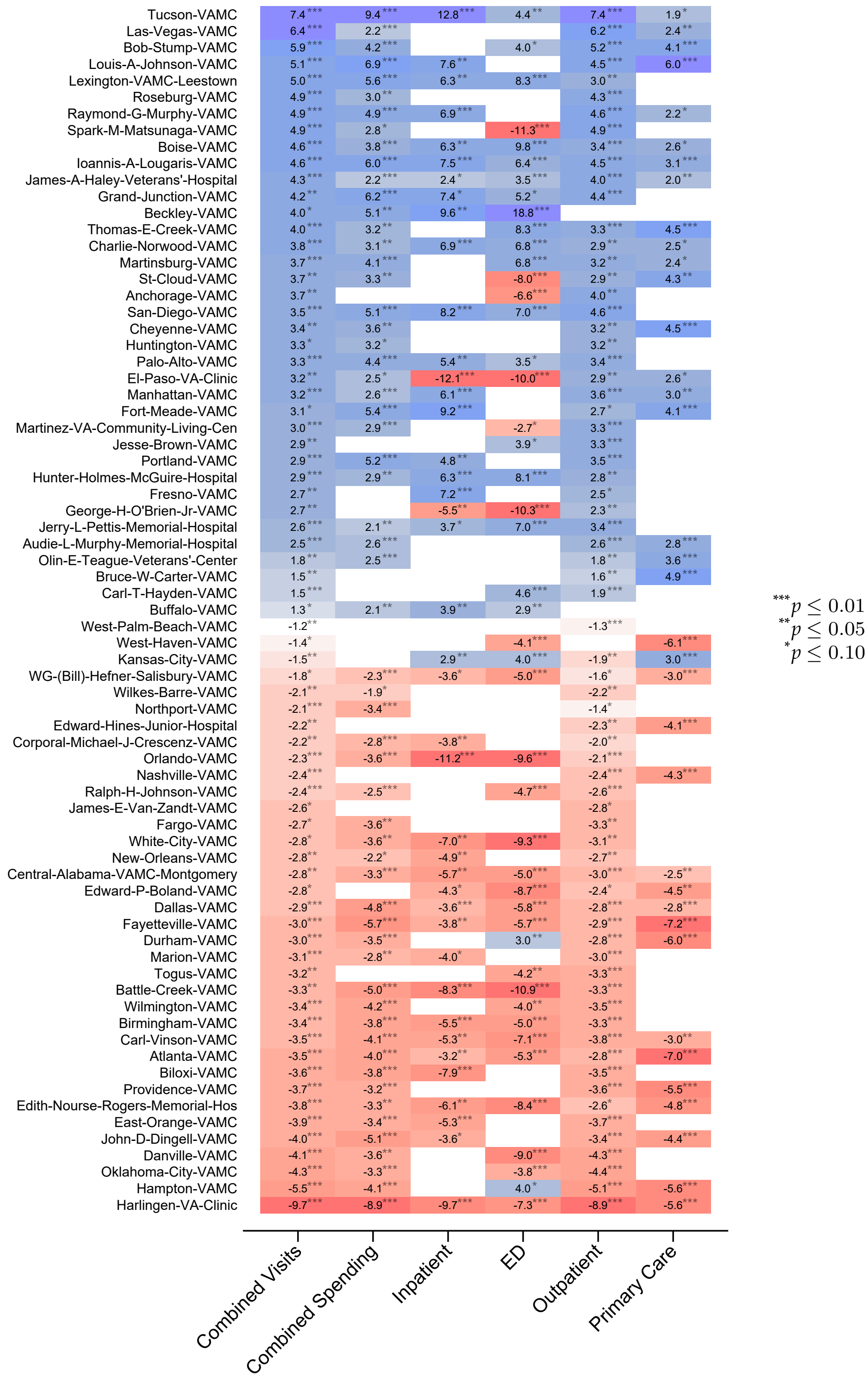


(e) Primary Care

Notes: The purpose of this figure is to display causal place effects ($\hat{\gamma}_j$ from Equation 3) by types of care (e.g., outpatient, inpatient, emergency, and primary care). All estimates are Empirical Bayes-adjusted (Walters, 2024), and only estimates that are statistically different from zero with 90% confidence are presented. See Appendix Figure A19 for geography-level correlations of these causal effects across care-types.

Source: Author calculations using Medicare claims and VA Administrative data.

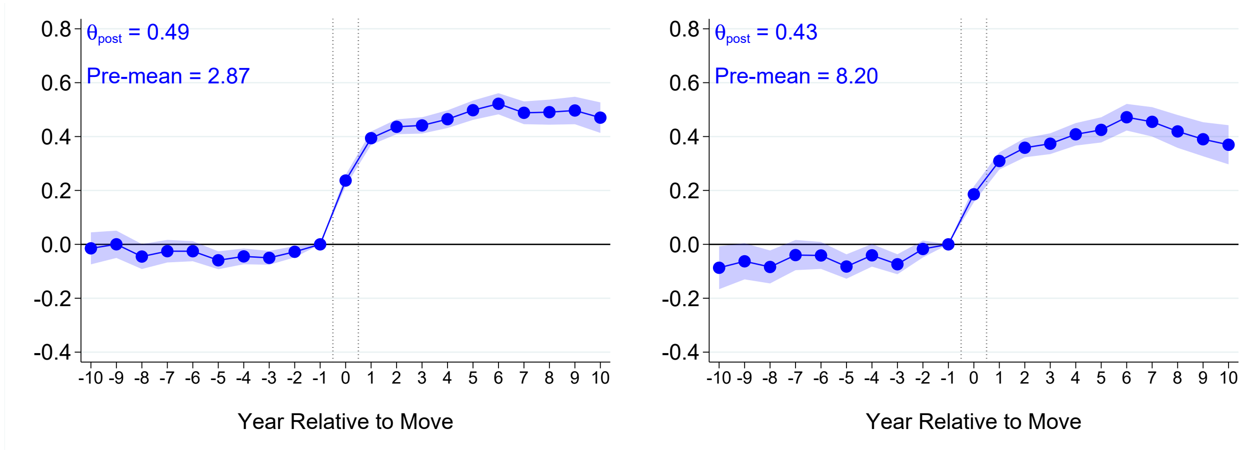
Figure A21 – Causal Place Effects by VA Station (3-Digit Level)



Notes: The purpose of this figure is to display Empirical Bayes-adjusted causal place effects across VA Stations (3-Digit Level). Stations are displayed only if the adjusted causal effect for the "Combined Visits" categories was statistically different from zero with 90% confidence. Other care types were only presented if they were statistically different from zero with 95% confidence.

Source: Author calculations using Medicare claims and VHA Administrative data.

Figure A22 – Specifications Analogous to Finkelstein, Gentzkow and Williams (2016) Yield Highly Similar Results



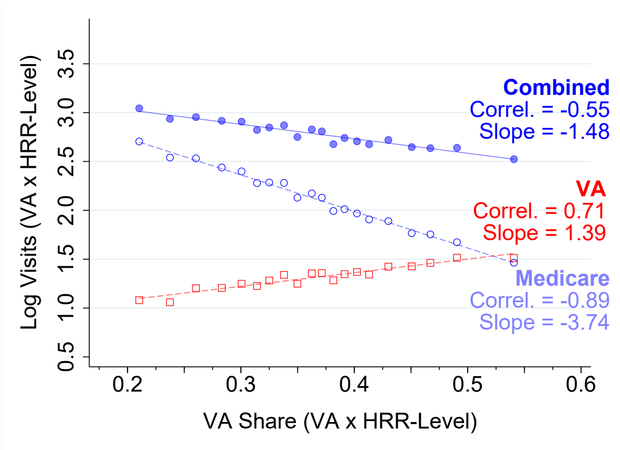
(a) Combined Visits

(b) Combined Spending

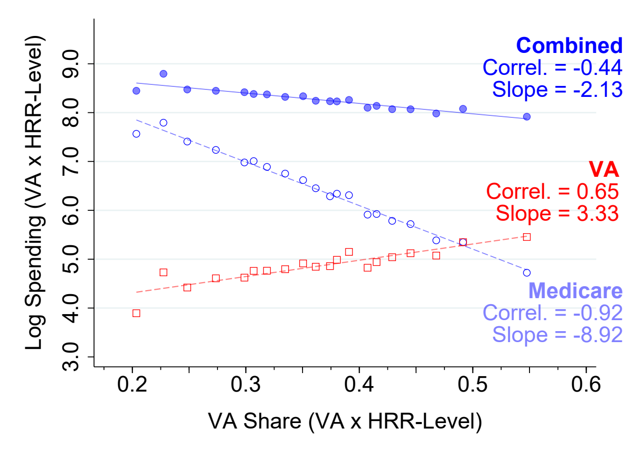
Notes: The purpose of this figure is to plot display results from Equations 1 and 2 for a specification with log(VA + Medicare Utilization) as the dependent variable and a corresponding δ variable that is also created using log utilization. These results are similar to those obtained by Finkelstein, Gentzkow and Williams (2016), who find an increase of slightly more than 0.5 log points in utilization.

Source: Author calculations using Medicare claims and VA Administrative data.

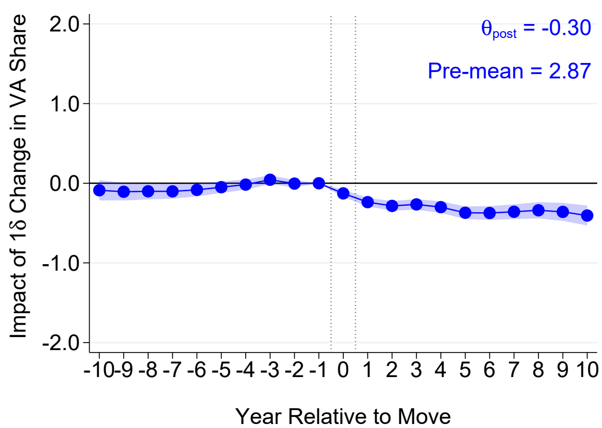
Figure A23 – The Relationship of VA Share with Overall Utilization



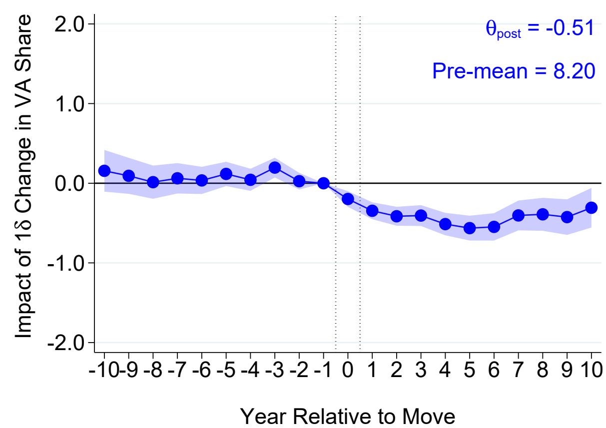
(a) Share vs. Utilization (Visits)



(b) Share vs. Utilization (Spending)



(c) Visit Utilization ($\hat{\delta}$ = VA Share)



(d) Spending Utilization ($\hat{\delta}$ = VA Share)

Notes: The purpose of this figure is to demonstrate the relationship between VA Share and Utilization. The top two panels demonstrate the association between VA Share (on the horizontal axis) and log utilization (vertical axis) defined using visits or spending in Panels (a) and (b), respectively. Each dot within these figures represents a ventile of VA Share (though correlations were calculated using underlying data on the VA $\times$ HRR-Level).

The bottom two panels represent results from Equations 1 and 2, where the outcome is log utilization is the outcome, but the variable of interest ($\hat{\delta}$) is based on move-level difference in VA Share. Thus, moving to an area with a 10 p.p. higher VA Share than the origin is associated with approximate decreases of 3.0% and 5.1% in combined visits and utilization, respectively.

Source: Author calculations using Medicare claims and VA Administrative data.

Table A1 – Comparison of VA-Users with Other Veterans

	Veterans Covered by the VA	Veterans Not Covered by the VA	Difference
Demographics			
White	89%	92%	-3%
Black	8%	6%	2%
Hispanic	3%	3%	0%
Male	97%	97%	-1%
Socioeconomic			
Employed	15%	19%	-3%
In Labor Force	16%	19%	-3%
Poverty	4%	5%	-1%
With Food Stamps	3%	2%	1%
With Housing Subsidies	3%	2%	1%
Education			
At Least High School Degree	89%	86%	3%
At Least Bachelors' Degree	28%	28%	-1%
Difficulty with:			
Seeing or Hearing	23%	18%	5%
Remembering	8%	6%	2%
Physical, Mobility, or Self-Care	25%	19%	6%
Health:			
Good or Better	65%	71%	-6%
Fair or Worse	35%	29%	6%
Other Insurance			
Insurance from Employer	21%	37%	-16%
Insurance from Medicaid	4%	4%	0%
% of Sample (Unweighted)	18%	82%	
% of Sample (Weighted)	17%	83%	
Observations	13,778	62,571	

Notes: The purpose of this table is to compare veterans who received healthcare services from the VA to those who do not. VA users were identified as veterans who indicated that they were covered by military health care programs. As indicated by the table, VA users were more likely to have functional difficulties, have worse self-reported health, and less likely to be covered by employer-provided insurance.

Source: Author calculations using 2001-15 Current Population Survey Annual Social Economic Supplement Data (Flood et al., 2023).

Table A2 – Summary Statistics by Movers and Non-Movers

	Movers	Non-Movers	Difference
VA Share (%):			
Combined Visits	34.6	38.0	-3.4
Combined Spending	33.8	37.5	-3.7
Outpatient	31.2	34.3	-3.1
Inpatient	19.8	22.0	-2.2
Primary Care	63.3	67.9	-4.5
Emergency	18.7	20.6	-1.9
Any VA (%):			
Combined Visits / Spending	65.5	69.1	-3.6
Outpatient	64.9	68.5	-3.5
Inpatient	5.4	5.9	-0.4
Primary Care	64.3	67.7	-3.4
Emergency	6.2	6.1	0.1
Any Utilization (%):			
Combined Visits / Spending	97.8	96.3	1.5
Outpatient	97.4	95.7	1.7
Inpatient	25.0	24.5	0.5
Primary Care	82.3	82.1	0.1
Emergency	29.3	26.8	2.5
Utilization:			
Combined Visits (Number)	26.6	25.5	1.2
Combined Spending ($)	$ 17,804	$ 17,800	4.5
Demographics:			
Age in Years	77.6	76.9	0.7
% Male	95.7	97.1	-1.5
% White	91.3	90.8	0.5
% Black	6.9	7.1	-0.2
% Hispanic	0.6	0.6	0.0
Miles to Nearest VA Hospital	41.7	39.8	1.9
Miles to Nearest Non-VA Hospital	5.0	5.0	0.1
Patients	111,698	2,224,220	
Patient-Years	1,129,226	6,568,104	

Notes: The purpose of this table is to display summary statistics of the veteran-movers in our analysis sample and to compare them to non-movers.

Source: Author calculations using Medicare Claims Data and VA Claims Data.

Table A3 – Additive Decomposition in VA Share

	VA Share			Level Difference		Percent of Difference	
	Quantile			Due to	Due to	Due to	Due to
Type of Care	**Top**	**Bottom**	**Diff.**	**Patients**	**Place**	**Patients**	**Place**
Above vs. Below Median							
Combined Visits	45.2	29.8	15.4	9.4	6.0	61%	39%
Combined Spending	45.0	29.2	15.8	9.4	6.4	59%	41%
Inpatient	32.0	11.3	20.6	9.7	11.0	47%	53%
Emergency	30.8	8.2	22.7	11.0	11.7	49%	51%
Outpatient	41.7	26.1	15.6	9.7	5.8	63%	37%
Primary Care	73.9	59.8	14.1	9.3	4.8	66%	34%
Top vs. Bottom Quartile							
Combined Visits	49.6	25.5	24.1	15.2	8.8	63%	37%
Combined Spending	49.5	24.8	24.8	15.3	9.4	62%	38%
Inpatient	38.8	7.7	31.1	13.7	17.4	44%	56%
Emergency	39.4	4.3	35.1	16.1	19.0	46%	54%
Outpatient	46.2	21.9	24.3	15.5	8.8	64%	36%
Primary Care	77.6	54.9	22.8	15.4	7.4	68%	32%
Top vs. Bottom Decile							
Combined Visits	54.1	22.3	31.8	20.9	10.9	66%	34%
Combined Spending	54.3	21.4	32.9	20.8	12.1	63%	37%
Inpatient	45.4	5.5	39.9	15.8	24.1	40%	60%
Emergency	48.0	2.5	45.5	20.4	25.2	45%	55%
Outpatient	50.9	19.0	32.0	21.6	10.4	68%	32%
Primary Care	81.4	49.9	31.4	20.7	10.7	66%	34%

Notes: The purpose of this table is to demonstrate the share of differences in geographic groups that are attributable to place effects ($\hat{\gamma}_j$). The geographies are grouped according to their respective averages of VA Share$_j$ (e.g., so that the 50% line above is comparing areas that are above-median VA Share vs. those with below-median averages). Then, the share of the difference in between two groups (J and J') attributable to place effects is calculated as follows:

$$\text{Share Due to Place}(J, J') = \frac{\gamma_J - \gamma_{J'}}{\overline{y}_J - \overline{y}_{J'}}$$

where $\overline{y}_J$ represents the average outcome within the group (i.e., $\overline{y}_J = \frac{1}{|J|}\sum_{j\in J}\overline{\text{VA Share}_j}$) and γ_J represents the average place effect within the group (i.e., $\gamma_J = \frac{1}{|J|}\sum_{j\in J}\hat{\gamma}_j$). See Figure A10 for a visual representation.

Source: Author calculations using Medicare claims and VA Administrative data.