RAND NATIONAL DEFENSE RESEARCH INSTITUTE

The Impact of Health Reform on Purchased Care Access

National Health Reform and Modernization of the Military Health System Study

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Preface

This document outlines the RAND National Defense Research Institute's assessment of the impact of a key aspect of reform in the broader U.S. health care system: the Affordable Care Act's coverage expansion. The analysis estimated how an influx of newly insured patients through the coverage expansion may change the way that civilian providers choose to interact with TRICARE enrollees. RAND's approach for this analysis combined data from the Defense Health Agency (DHA), publicly available data sources, and projections of health insurance coverage in 2016 from the RAND COMPARE microsimulation model to predict how physicians' decisions to treat TRICARE enrollees will change over time. This research culminates in lists and maps of counties where civilian physicians are most likely to face financial incentives to substitute newly insured patients for current TRICARE patients. We found that about 7 percent of current TRICARE visits are delivered by a community provider who could face financial incentives after the Affordable Care Act's coverage expansion to replace their current TRICARE patients with the newly insured. Our work is one indicator of potential future TRICARE access concerns rather than an exact prediction of providers' decisions.

The goal of this study is to highlight the potential impacts of the coverage expansion on TRICARE in aggregate and for specific geographic regions and physician specialties. One potential use of the results presented in this study is to flag regions and physician specialties where access to purchased care should be monitored more closely over time by DHA and TRICARE managed care support contractors. The contents of this report will be of interest to national policymakers, DHA, TRICARE managed care support contractors, and others who seek to maintain adequate access to purchased care.

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Summary

The Military Health System (MHS) provides and pays for health care delivered to active-duty service members, their dependents, military retirees, and other beneficiary groups by military treatment facilities and civilian providers. The U.S. Department of Defense's (DoD's) TRICARE program is the health benefit that covers access to civilian providers, also referred to as the purchased care system. Because the MHS relies in part on civilian providers, policymakers have a keen interest in how the expansion of health care coverage under the Affordable Care Act (ACA) will affect access to care for TRICARE beneficiaries.

The increase in the number of Americans with health insurance and changes in the type of insurance policies they have will change the demand for health care. In addition, changes in payment and delivery could motivate physicians to change the type of insurance policies they accept and, in some cases, even drop patients with particular types of insurance, such as TRICARE. Should access to care become more difficult for TRICARE beneficiaries, there are policy options that DoD could exercise. But before any policy decisions can be made, DoD needs a better understanding of how ACA coverage expansion might affect TRICARE beneficiaries and whether those effects differ by locality across the United States.

As part of the "National Health Reform and Modernization of the Military Health System" study, we estimated the potential impacts of health reform on TRICARE enrollees' access to care in the purchased care sector. This report summarizes the results of this research, culminating in lists and maps of localities where civilian physicians are more likely to leave TRICARE contractor networks or reduce TRICARE volume as a result of the major shifts in the U.S. health care system introduced by ACA. These areas are characterized by a rapid influx of newly insured individuals and slow change, if any, in the supply of civilian physicians.

The study used data from a variety of sources, including TRICARE encounter data from the Defense Health Agency, survey data from the Census Bureau's American Community Survey, and provider data from a commercial vendor (SK&A). We used projections from RAND's COMPARE model, a microsimulation model developed to describe the likely impacts of health reform, to estimate the 2016 insurance coverage rates in each county. The overall approach involved first projecting changes in demand for health care as a result of the coverage expansion at the county level and then estimating how physicians who saw TRICARE patients prior to ACA could alter whether and how often they would see TRICARE patients in response to financial incentives. We report results for two specific access measures. First, we estimated the proportion of TRICARE physicians in each county that could replace all of their pre-ACA TRICARE net revenue with net revenue from the newly insured. Second, we calculated the proportion of TRICARE enrollees in each county that see one of these "at-risk" physicians.

Overall, we found that changes in visit volume due to the ACA coverage expansion are larger for Medicaid enrollees, individuals covered by private insurance, and individuals without insurance. However, we estimated that 19 percent of TRICARE physicians would find that they could replace all of their current TRICARE net revenue with net revenue from the newly insured post-coverage expansion and were therefore "at risk." These physicians accounted for about 7 percent of TRICARE visits. Primary care physicians were more likely to be at risk than specialist physicians.

Our analysis was sensitive to assumptions on the relative payment rates between TRICARE, marketplace plans, and Medicaid; assumptions on potential future Medicaid policy decisions outside the control of DoD; and assumptions on the demand for care from the newly insured. We preset a range of sensitivity analyses to describe how our results changed as we varied these assumptions. Under a scenario in which Congress increases Medicaid payment rates for certain primary care providers and services to Medicare levels (as was done in 2013 through 2014), the proportion of TRICARE visits to primary care providers able to replace all of their current TRICARE net revenue with net revenue from the newly insured increases from 7.2 percent under our base assumptions to 17.0 percent.

Physicians and physician practices consider many factors, including non-financial factors, when making decisions related to contractual arrangements with payers and the number and mix of patients that they serve. We cannot know for certain whether specific physicians will change their interactions with TRICARE because of the coverage expansion. However, the framework and measures that we developed in this study are one tool to help DoD identify providers at a higher risk for scaling back their TRICARE participation.

Abbreviations

ACA	Affordable Care Act
ACO	accountable care organization
ACS	American Community Survey
CBSA	Core-Based Statistical Area
CMS	Centers for Medicare & Medicaid Services
DHA	Defense Health Agency
DoD	U.S. Department of Defense
HCPCS	Healthcare Common Procedure Coding System
KFF/HRET	Kaiser Family Foundation/Health Research and Economic Trust
MEPS	Medical Expenditure Panel Survey
MHS	Military Health System
MSA	metropolitan statistical area
MTF	military treatment facility
NAMCS	National Ambulatory Medical Care Survey
NDRI	RAND National Defense Research Institute
NPI	National Provider Identifier
OSD	Office of the Secretary of Defense
PSA	prime service area
RVU	relative value unit
SIPP	Survey of Income and Program Participation

CHAPTER ONE

Introduction

The Military Health System (MHS) provides and pays for health care delivered to active-duty service members, their dependents, military retirees, and other beneficiary groups. MHS care is delivered through two interconnected systems—the *direct care* system of U.S. Department of Defense–operated (DoD-operated) military treatment facilities (MTFs) and the *purchased care* system in which DoD, through commercial health insurer intermediaries, pays for care delivered by civilian providers. DoD's TRICARE program is the health benefit covering access to the purchased care system.

The MHS manages a set of complex trade-offs between the direct and purchased care systems. The direct care system is under the control of DoD and provides important capabilities to support deployment and ensure readiness for DoD's combat mission. On the other hand, it may be more cost-effective to outsource care to the private sector, particularly for some health care services and clinical needs for which DoD has few providers or is operating at capacity. These complex interactions between the MHS and the broader health care system boil down to a set of "make versus buy" decisions—that is, should the MHS produce a specific type of care in a specific market, or should it opt to purchase this care from the private sector? When there is compelling health, economic, and/or capacity justification to purchase care, the MHS relies on the purchased care system and civilian providers. In this sense, the purchased care system acts as both a gap filler and a safety valve for the overall MHS to ensure that DoD is able to provide medically necessary services to its enrollees.

Given the linkages between the MHS and the overall U.S. health care system through purchased care, changes in the latter are likely to affect how the MHS provides and pays for health care for its beneficiaries. The U.S. health care system is in the midst of what may be the most substantive reform since the implementation of Medicare and Medicaid in 1966, with ongoing changes occurring on two fronts. First, the Affordable Care Act (ACA) coverage expansion provisions—including a mandate that individuals obtain coverage, the introduction of health insurance marketplaces and subsidies for low-income individuals to purchase coverage, and Medicaid eligibility expansion in some states—have already resulted in more than ten million newly insured Americans (Patient Protection and Affordable Care Act, 2010; Carman, Eibner, and Paddock, 2015; Long et al., 2015; Sommers et al., 2014). Additional reductions in the uninsured rate are likely moving forward as the last ACA provisions, including the employer mandate, are implemented.

The reduction in the number of uninsured Americans has important implications for safety net providers (including hospitals, clinics, and other providers serving uninsured patients prior to the coverage expansion), health care providers more broadly, and health care payers. In particular, because of changes in the number of insured Americans and the type of coverage

that they have, providers will face different demand for care. The second main area of change is in payment and delivery. While ACA promoted demonstrations and innovation in accountable care organizations (ACOs)—arrangements where providers have incentives to coordinate care and share risk with payers—and alternative payment models to replace traditional fee-for-service arrangements, the movement toward payment and delivery reform began in earnest prior to ACA in the private sector.

These coverage expansion and payment and delivery reform changes will undoubtedly have important impacts on MHS patients and providers. It is important for the MHS to understand the potential impacts of these changes and, where appropriate, to consider strategies and policies to mitigate undesired impacts. In the case of ACA coverage expansion, it is clear that there are now more insured patients vying for access to civilian providers who may already be stretched to capacity (Bodenheimer and Pham, 2010; U.S. Department of Health and Human Services, Health Resources and Services Administration, and National Center for Health Workforce Analysis, 2013). One concern is that civilian providers may change the way that they interact with TRICARE, given this influx of patients and differences between payment rates from TRICARE and other payers. In the most extreme outcome, civilian providers could choose to no longer accept TRICARE patients. This outcome would put stress on TRICARE managed care support contractors to ensure adequate networks. It would also have important access and potential health implications for TRICARE enrollees. If a decline in access to civilian providers becomes a reality for TRICARE enrollees, DoD and the TRICARE managed care support contractors have a range of policy levers—including changing payment rates or other features of the TRICARE program and contracts—to ensure adequate purchased care access.

While there is some early evidence of the coverage implications of ACA, we are not aware of studies that have examined how increases in health care coverage may affect decisionmaking by providers. This report describes an empirical approach to examine this issue by (1) estimating local (county-level) changes in demand for health care as a result of ACA coverage expansion and (2) describing the potential impact of shifts in demand and payment for care on physician decisions to participate in TRICARE. We combined several sources of data and analytic methods to estimate, quantitatively, the individual physicians and areas within the United States that might face particularly large increases in patient demand and shifts in net revenue across payers because of ACA. Our goal is to identify current TRICARE providers who would be able to offset all of their current TRICARE net revenue with net revenue from the newly insured. We consider such providers "at risk" from the perspective of the MHS because it may be financially advantageous for these physicians to shift their patient panel toward the newly insured and, as a result, see fewer or no TRICARE patients in the future.

Affordable Care Act Background

ACA introduced dramatic changes to the U.S. health insurance and health care delivery landscape. One main goal of ACA was to extend health insurance coverage to tens of millions of uninsured Americans through two main channels. First, ACA as originally implemented would have expanded Medicaid eligibility to households below 133 percent of the federal poverty limit across the United States. In 2012, the Supreme Court ruled that the decision to expand or not expand Medicaid would be left to the states (*National Federation of Independent*

Business v Sebelius, 2012). As of December 2015, 34 states have expanded or are considering expanding Medicaid. Second, ACA created insurance marketplaces operated by the states or federal government paired with subsidies for low-income individuals and penalties for individuals who remain uninsured.

The Congressional Budget Office estimated that, collectively, the ACA coverage expansion provisions would extend coverage to 32 million individuals by 2019 (Congressional Budget Office, 2010). As of early 2015, more than 11.7 million people had signed up for coverage through the marketplace and more than 12.2 million people had gained Medicaid/Children's Health Insurance Program coverage through February 2015 (U.S. Department of Health and Human Services, 2015a; Centers for Medicare & Medicaid Services, 2015). Many of the newly enrolled had other coverage, and evidence on the net impact of the coverage expansion is still emerging. One study using the National Health Interview Survey reported a net reduction of uninsured individuals aged 18–64 from 20.4 percent in 2013 to 16.3 percent in 2014 (Cohen and Martinez, 2015).

Evidence on the impact of the coverage expansion on demand for health care is also slowly emerging. Many newly insured individuals had previously obtained some health care through clinics, emergency departments, and out-of-pocket payments to private providers. By gaining insurance, these individuals will face lower out-of-pocket costs when receiving care, and, as a result, they should increase the volume of care that they consume. They may also be more likely to seek care from physician offices rather than hospital emergency departments for nonurgent care after gaining coverage. Some individuals gaining Medicaid or exchange coverage were previously insured by their employer or another source (Carman and Eibner, 2014). For these individuals, it is important to consider how coverage, cost-sharing, and other features of their prior coverage compare to their new coverage when estimating the likely changes in utilization over time.

While health insurance can lower financial barriers to receiving appropriate care, patients need to be able to locate and see the right providers to actually receive care. It is not clear whether the U.S. health care delivery system—including physicians, other health care providers, and facilities—has the capacity today to meet the growth in demand for health care from the coverage expansion and the increasing health care needs of a growing, aging population. Even if the total supply of physicians is adequate to treat the U.S. population, it is not distributed evenly (in accordance with demand) across the United States (Bodenheimer and Pham, 2010). If areas with particularly limited physician supply are also areas experiencing particularly large expansions of insurance coverage, local shortages could be particularly acute in some areas, assuming that supply remains constant or is slow to adjust to changes in demand.

The physician workforce—at least in some specialties—may have been operating at capacity even before ACA. In primary care, for example, studies estimated shortages of tens of thousands of physicians required to meet demand prior to the coverage expansion (Bodenheimer and Pham, 2010; U.S. Department of Health and Human Services, Health Resources and Services Administration, and National Center for Health Workforce Analysis, 2013; Sommers et al., 2014). In response, the Health Resources and Services Administration identifies primary care shortage areas and administers policies to steer new physicians to these regions (U.S. Department of Health and Human Services, 2015b). There are a range of underlying causes of shortages in primary care, including payment and workload differentials across specialties.

Physician Responses to the Coverage Expansion

Physicians can respond to an influx of newly insured individuals—for example, newly insured individuals with Medicaid and exchange coverage due to the ACA coverage expansion—in several ways. Physicians can (1) increase the volume of services that they provide, (2) change the composition of their panel of treated patients across different insurance providers, (3) both increase volume and shift their patient panel, or (4) do nothing. When trying to accommodate higher demand by increasing volume, physicians can change treatment intensity and decrease their work per patient. While this increases volume and the number of patients that the physician treats, it may also raise quality of care concerns if the previous treatment intensity was optimal from the payer or patient perspective (Garthwaite, 2012; McDonald et al., 1974). On the other hand, studies have shown that physicians might simply work longer hours to see more patients without changing treatment intensity or expand health care supply through a broader use of nurse practitioners, physician assistants, or other providers (Kaiser Family Foundation, 2013). For instance, compared with a solo practitioner, a physician working in a group practice can see 12.2 percent more patients during the same time (Glied and Ma, 2015).

Furthermore, increased demand for health care accompanied by diverse relative payment rates across insurance providers and different costs of interacting with payers might induce a change in the mix of patients with different kinds of coverage that physicians treat, or, in extreme cases, physicians may stop treating patients with some types of coverage altogether (Bronstein, Adams, and Florence, 2004). Shifts in the coverage that a physician accepts may or may not be associated with a change in the total number of patients that a physician treats. Depending on the marginal revenue of seeing patients insured through higher reimbursement rates (e.g., privately insured), physicians may reduce their caseload or stop treating patients with lower relative payments, such as those insured by TRICARE or Medicaid (Kemp, 2012). Indeed, data show that despite increases in both Medicaid payment rates and its enrollment over the previous decade and some evidence on increased access to care (Baker and Royalty, 1997; Garthwaite, 2012), the share of physicians accepting Medicaid patients had decreased (Cunningham and May, 2006).[1] Several studies have shown, however, that low or nonparticipation rates varied spatially, as they are associated with such factors as the size of the Medicaid-eligible population in the geographic area (Mitchell, 1991) and other community-level characteristics, such as income per capita (Perloff et al., 1997).

To this end, concerns about access to care for Medicaid enrollees or beneficiaries of other public health insurance systems, such as TRICARE, following a broad coverage expansion like the one catalyzed by ACA are not equally pressing across the country. There is substantial variation in health care utilization per capita across the United States, which depends on both the physician supply and the rate at which people under different providers seek health care services. For instance, Medicare beneficiaries vary in their physician visits: In the Bronx, New York, only 60 percent visit a primary care physician annually, yet in Florence, South Carolina, about 90 percent do (Goodman et al., 2010). Additionally, while utilization rates overall are very low in the Northeast, the highest ratios of visits per physician are observed in the Midwestern states (Glied and Ma, 2015). Therefore, concerns related to access to care are most acute in areas with

[1] More than 85 percent of physicians identified relatively low Medicaid fees as the main reason for refusing to accept Medicaid patients (Cunningham and May, 2006).

the largest increases in demand for care and constrained supply (Bronstein, Adams, and Florence, 2004; Glied and Ma, 2015).

CHAPTER TWO

Overview of Research Approach

The aim of this study was to quantify the potential impact of the ACA coverage expansion on the decisions of private-sector providers to participate in TRICARE. To do so, we developed a model that translates estimates of coverage changes due to ACA into changes in demand for care assigned to individual physicians. We assumed that some physicians might respond to changes in coverage and the mix of payers by no longer contracting with payers who represented a small share of their pool of patients. In particular, we analyzed the case of TRICARE patients and characterized situations in which TRICARE patients were "at risk" of being squeezed out of a physician's panel.

Thus, the changes in demand, along with evidence and assumptions on payment rates and costs, were used to flag "at-risk" physicians—that is, physicians who could face at least financial incentives to shift care away from TRICARE enrollees and toward newly insured individuals. Using a "net revenue" criterion described later in this chapter, physicians were flagged as at risk if they were (1) operating at or near capacity prior to passage of ACA and (2) could replace all of their pre-ACA TRICARE net revenue with net revenue from the newly insured.

Data

Our approach required linking data from six sources:

1. *County-level data on health insurance coverage by type prior to ACA*. We used data describing the population living in each locality, including such demographics as age, gender, and income and, importantly, the current distribution of individuals across different sources of health insurance. Data covered the following categories of health insurance: Medicaid, Medicare, direct purchase, employer-sponsored insurance, and TRICARE.
2. *State-level ACA forecast data for estimating how health insurance coverage will change because of ACA coverage expansion*. We used RAND COMPARE to obtain state-level coverage predictions. COMPARE is an agent-based microsimulation model used to estimate the effects of health policy changes, including ACA. The model is based on nationally representative survey data from the Survey of Income and Program Participation (SIPP), the Medical Expenditure Panel Survey (MEPS), and the Kaiser Family Foundation/Health Research and Economic Trust (KFF/HRET) annual survey of employer benefits. Individuals and firms in the model make decisions by comparing the cost and benefits of available health insurance options.

3. *Physician-level data on the supply of physician services overall*. Among the data collected were the zip code of the practice location, each physician's unique National Provider Identifier (NPI), whether they accepted new Medicare patients, whether they accepted new Medicaid patients, the size of the physician group, the total visit volume, and the physician's specialty. Data were obtained for snapshots of the physician workforce once per year from 2008 to 2014.
4. *Physician-level data on the supply of health care services to patients with particular sources of coverage, including TRICARE*. We combined data from several sources to describe the universe of civilian physicians and the subset of civilian physicians who provide care to TRICARE patients.
5. *Data on relative visit rates for patients with different sources of coverage*. For baseline demand for care from patients with different sources of coverage, we used estimates of per capita annual visit rates from the Centers for Disease Control and Prevention and from published studies using the MEPS.
6. *Data on the relative payment rates across payers*. We merged data from a number of sources to calculate relative payment rates, including claims data from TRICARE, Medicare, and Truven's Marketscan database of commercial group health plan claims and a geographic crosswalk to determine locality.

Behavior Modeling Methodology

Our general approach involved three steps, as illustrated in Figure 2.1:

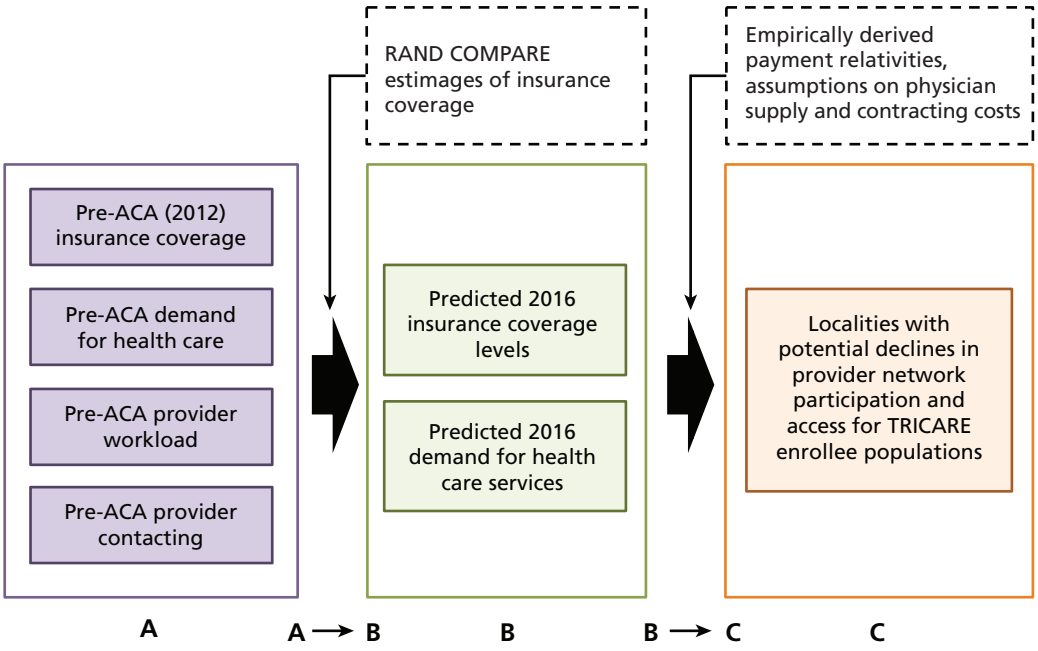
1. Estimate the physician's current volume of care supplied to patients of different payers, including physicians' observed decisions about contracting with TRICARE as of 2013 (before the main provisions of ACA took place).
2. Estimate how demand for care furnished by individual physicians will change as a result of the ACA coverage expansion, both at the physician level and at the geographic level.
3. Identify potential situations in which physicians could be better off financially by shifting their patient panels away from their current TRICARE patients and toward newly insured patients.

We then mapped the results of our analysis to identify localities with potential declines in provider network participation and access for TRICARE enrollee populations. The remainder of this section briefly describes each of these three steps. A complete discussion of data and methods—including specific assumptions, price and cost differentials, and analytic steps—is contained in the appendix.

Step 1. Construct Each Physician's Patient Volume and Payer Mix

The initial set of tasks (Box A in Figure 2.1) assembled county-level data and described the status quo in terms of 2012 population demographics, insurance coverage levels and demand for health care, and provider TRICARE participation decisions and volume for each physician in our data. We built on data available in the SK&A dataset, which reports on patient visits at the practice level, to approximate the panel of patients seen by each physician. More specifically, we estimated total patient volume for individual physicians; the number of TRICARE

Figure 2.1
Approach to Estimating Changes in Demand



visits per provider (using the 2012 TRICARE encounter data); and the number of visits from private coverage (separately for employer-based and individually purchased coverage), Medicaid, Medicare, the uninsured, and others. For each physician, we calculated the share of visits for each payer type and adjusted to take into account the fact that not all doctors accept Medicaid or Medicare patients.

Step 2. Estimate the Change in Demand Caused by ACA

In the next step (Box B in Figure 2.1), we analyzed the change in demand for health care in response to coverage changes under ACA. We defined *demand* as the number of visits individuals seek as a function of their health insurance coverage. We began (A→B) with estimates from the RAND COMPARE model to project the impact of ACA on insurance coverage at the county level. In addition to the main COMPARE estimates of ACA impacts at the national level, for this study we also used estimates from 51 state-specific models (including the District of Columbia) that were modified to account for state-specific demographics and state policies (such as Medicaid eligibility). Additional details on the methodology underlying COMPARE can be found in Cordova et al., 2013.

We then estimated the expected change in visits that patients were likely to make upon changing health care coverage using data from the research literature. Generally, the literature has found that individuals changing from one coverage state to another do not necessarily adopt the visit rate of others already covered under the new coverage category (either Medicaid or coverage for those gaining coverage under ACA). Our approach was to assume that individuals would adopt the relative visit rate midway between those of individuals currently covered under each type of coverage. We then made assumptions about whether individuals would see care from the same physicians after changing coverage.

Step 3. Identify At-Risk TRICARE Providers and Visits

In the final step, we determined physicians' net revenue from TRICARE relative to net revenue from the newly insured (Box C in Figure 2.1) and identified at-risk TRICARE providers and visits. We used a behavioral modeling approach to operationalize parts of the step labeled B→C in the figure. Specifically, we combined data and assumptions on a number of factors to suggest which physicians faced at least an economic rationale for shifting the composition of their patient panel:

- estimates from the literature and from publicly available data on health care utilization volume
- actual relative payment rates across payer categories within specialties at the level of metropolitan statistical area (MSA)
- assumptions on the costs borne by physician practices when they interact with managed care organizations
- assumptions on the ability of physician practices to accommodate new demand in a net revenue framework.

While payment differentials across payers are widely recognized, there is surprisingly little research on variability in their magnitude, both spatially and across specialties. We developed an empirical approach to estimate payment relativities (i.e., payment for one source relative to payment from another source for the same service) between TRICARE, Medicare, and commercial payers. We used 2013 Medicare, TRICARE, and commercial group health insurance claims data aggregated at the physician level to calculate payment relativities for seven study specialties (cardiology, psychiatry, pediatrics, general practice, neurology, orthopedic surgery, and obstetrics and gynecology) in 388 MSAs. We relied on assumptions and the literature for estimates of the payment relativities between TRICARE and other payers, including Medicaid, the uninsured, exchange coverage, and other coverage.

Our physician-level data combine a database on the near-universe of practicing physicians (SK&A) with TRICARE encounter and Medicare claims data using NPIs. As a final step, we used the 2016 projections to flag localities in which TRICARE beneficiaries and the MHS were likely to be most affected by ACA changes.

Our approach, and particularly the criteria used to flag at-risk physicians, assumes that the supply of physician services remains constant over time. We focused on only one of the physician responses to changes in demand introduced above—specifically, provider shifts in patient panels to maximize net revenue subject to a constraint to overall supply.

Access Measures

The main outputs from our study are county-level estimates of the proportion of current TRICARE physicians that *could* face financial incentives after the ACA coverage expansion to drop TRICARE patients in favor of newly insured individuals (primarily with private coverage through the exchanges, rather than expanded Medicaid coverage, because of the typically low Medicaid payment rates). We refer to these physicians as being at risk of changing the way that they interact with TRICARE and TRICARE patients because they could, under the assump-

tion that they do not expand supply in response to the coverage expansion, be better off financially if they treated non-TRICARE patients instead of TRICARE patients.

As mentioned at the outset of this chapter, to be at risk a physician must (1) have pre-ACA volume in the top half of the distribution for his or her specialty and (2), based on our estimates, have greater net revenue if he or she were to see newly insured rather than TRICARE patients. The first criterion identifies physicians who are unlikely to be able to absorb new demand and will find themselves able to choose between TRICARE patients and visits or patients and visits covered by other forms of coverage. The second criterion identifies physicians who may face at least a financial incentive to move away from TRICARE patients and visits.

Using our physician-level results, we calculated the proportion of TRICARE visits that were currently furnished by at-risk physicians. The TRICARE patients that at-risk physicians currently see could shift to a new provider (or in some cases to the direct care system), or they could face difficulty in accessing care. We stress that our work is one indicator of potential future TRICARE access concerns rather than an exact prediction of providers' decisions, and we recognize that there are many other factors (beyond solely economic considerations) that affect physicians' decisions to join the TRICARE managed care support contractor networks and to treat TRICARE patients. As a result, some of the physicians that we flag as at risk may not change the way that they interact with TRICARE and TRICARE enrollees, even though they might have a financial incentive to do so.

Presenting Data by Physicians and by Counties

To facilitate the analysis, we aggregated individual physicians' estimates to the county level. Thus, although the microsimulation model is at the physician level, we present information on how counties are distributed in terms of the proportion of physicians practicing in the county who could replace all of their current TRICARE net revenue with net revenue from the newly insured. We follow the same approach to present information regarding the share of TRICARE visits in each county that are provided by an at-risk physician. We report separate results for specific medical specialties and other county and provider characteristics (e.g., whether or not the physician is likely to be in the TRICARE managed care support contractor network).

CHAPTER THREE

Aggregate Effects of ACA Coverage Expansion on Purchased Care Access

As the previous chapter described, the first two steps in our analytic approach (steps 1 and 2) examined the pre-ACA landscape and the effect of ACA coverage expansion on insurance coverage, demand for health care, provider workload, and provider contracting. This chapter presents the results of that analysis. A potential determinant of who a provider accepts into his or her patient panel is the relative difference in payment received from individuals with varying types of health insurance. This chapter begins with an examination of these relative differences in payments, which are used, along with changes in demand, to determine how provider decisions may change as a result of ACA coverage expansion.

Relative Differences in Empirically Derived TRICARE, Medicare, and Commercial Payments

Detailed presentation and discussion of the payment relativity data and methodology can be found in the appendix. In brief, we observed significant spatial variation in payment rates per relative value unit (RVU), a "common denominator" unit of work used to describe the effort involved in furnishing health care services, within specialties between private and public payers (Table 3.1). For instance, payments to providers for care paid by commercial insurers are on average 30 percent higher than those under Medicare and TRICARE. The average ratio of commercial group health to Medicare payments per RVU across regions is as high as 1.67 in one region for care delivered in the inpatient facility setting and as low as 1.05 in another region for care provided in the physician office setting. In contrast, the within-specialty payments per RVU under TRICARE and Medicare overlap closely, and their average ratio equals or is close to 1.

Predicted Change in Visit Volume and Gross Revenue

We estimated the change in visits per physician per day under the strong assumption that supply does not change over time (that is, productivity and intensity of care is held constant). Changes in visit volume are likely to be modest at the physician level for all payers except Medicaid, direct purchase private insurance, and uninsured individuals (see Table 3.2). The predicted increases in other private and Medicaid volume and the decrease in uninsured volume

Table 3.1
Allowed Amounts per RVU Relative to Medicare, by Payer

	TRICARE			Commercial		
	Price	Std. Dev.	*N* (MSAs)	Price	Std. Dev.	*N* (MSAs)
Cardiology	1.02	0.04	315	1.52	0.28	304
General practice	1.01	0.03	342	1.28	0.22	327
Neurology	1.01	0.04	229	1.33	0.27	297
Obstetrics and gynecology	1.03	0.06	328	1.28	0.22	295
Orthopedic surgery	1.02	0.05	321	1.32	0.25	319
Pediatrics	1.02	0.05	41	1.28	0.22	94
Psychiatry	1.01	0.03	275	1.17	0.20	278
Total	**1.02**	**0.03**	**342**	**1.30**	**0.22**	**338**

NOTES: Reported values are allowed amounts relative to Medicare (Medicare = 1.0). Each value is the mean of the ratio between median payments per RVU across physicians at the region level under TRICARE or commercial insurance relative to Medicare. *N* refers to number of regions (MSAs or non-MSA counties in each state) for which payments are observed for TRICARE and Medicare and commercial and Medicare simultaneously for comparison. Numbers are reported in aggregate across place of service—for example, facility or office. See the appendix for details.

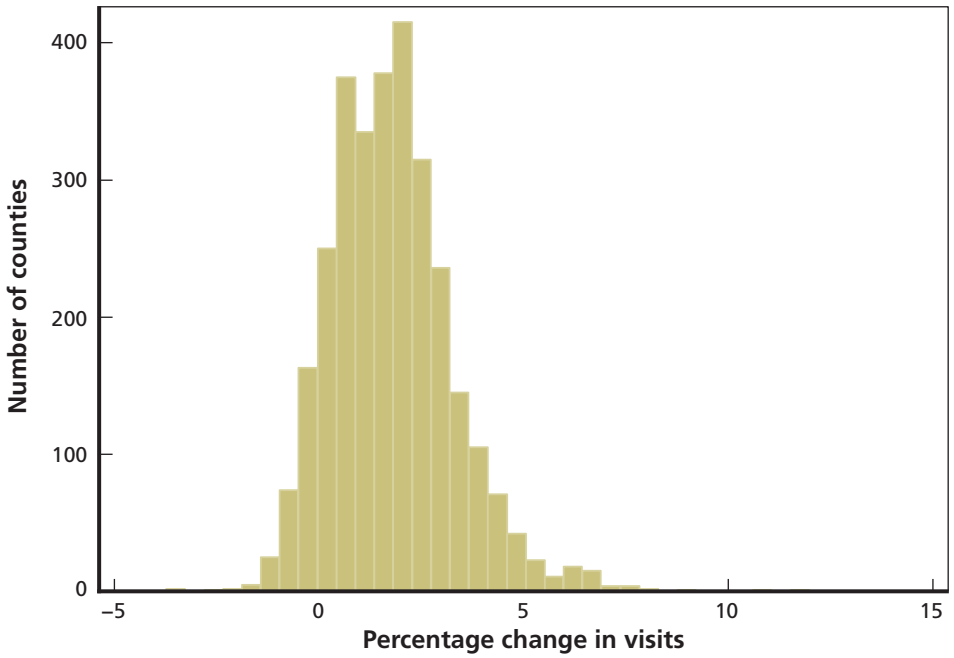
Table 3.2
Pre- and Post-ACA Average Visits per Physician per Day, by Payer

	Pre-ACA	Post-ACA	% Change
Medicare	5.1	5.1	0.0%
Uninsured	1.1	0.6	–41.2%
Medicaid	2.5	2.8	11.7%
TRICARE	0.6	0.6	0.0%
Employer-sponsored insurance	9.0	9.1	0.8%
Other private	1.0	1.4	45.5%
Other	2.3	2.3	0.0%
Total	21.6	22.0	1.7%

were expected, given the Medicaid expansion and the increase in the number of individuals gaining health care under ACA coverage expansion.

Across all counties, we estimated a net increase of 32.2 million visits in 2016 compared with 2013, with a base of 1.87 billion visits. The median and mean 2013-to-2016 net change in the number of visits demanded across counties is 1.7 percent, with a standard deviation of 1.6 percentage points. Figure 3.1 illustrates the distribution of the net change in visits aggregated at the county level. While the county-level net change is small overall, the top 5 percent of counties are estimated to experience a 4.3 percent or greater increase in visits than the other 95 percent.

Figure 3.1
Distribution of County-Level Changes in Demand (measured in visits), All Payers



RAND *RR1627-3.1*

Figure 3.2 maps the county-level change in visits.[1] States with large populations of uninsured and less generous Medicaid programs in 2012—including Texas and other Southern states—are more likely to have larger predicted increases in visit demand, regardless of whether individual states opted to expand Medicaid eligibility.[2] New England and the Midwest tend to have lower estimated rates of new demand, in part because of low uninsured rates and broad enrollment in state Medicaid programs. Massachusetts, for example, had already implemented policies promoting universal coverage by 2012, and the projected new demand across all counties in the state is low.

Estimated county-level changes in gross revenues (without discounting administrative costs) are slightly larger than changes in volume: The median and mean increases are 2.1 percent and 1.9 percent, respectively, with a standard deviation equal to 2.4 percentage points. Figure 3.3 illustrates the distribution of county-level change in net revenue.

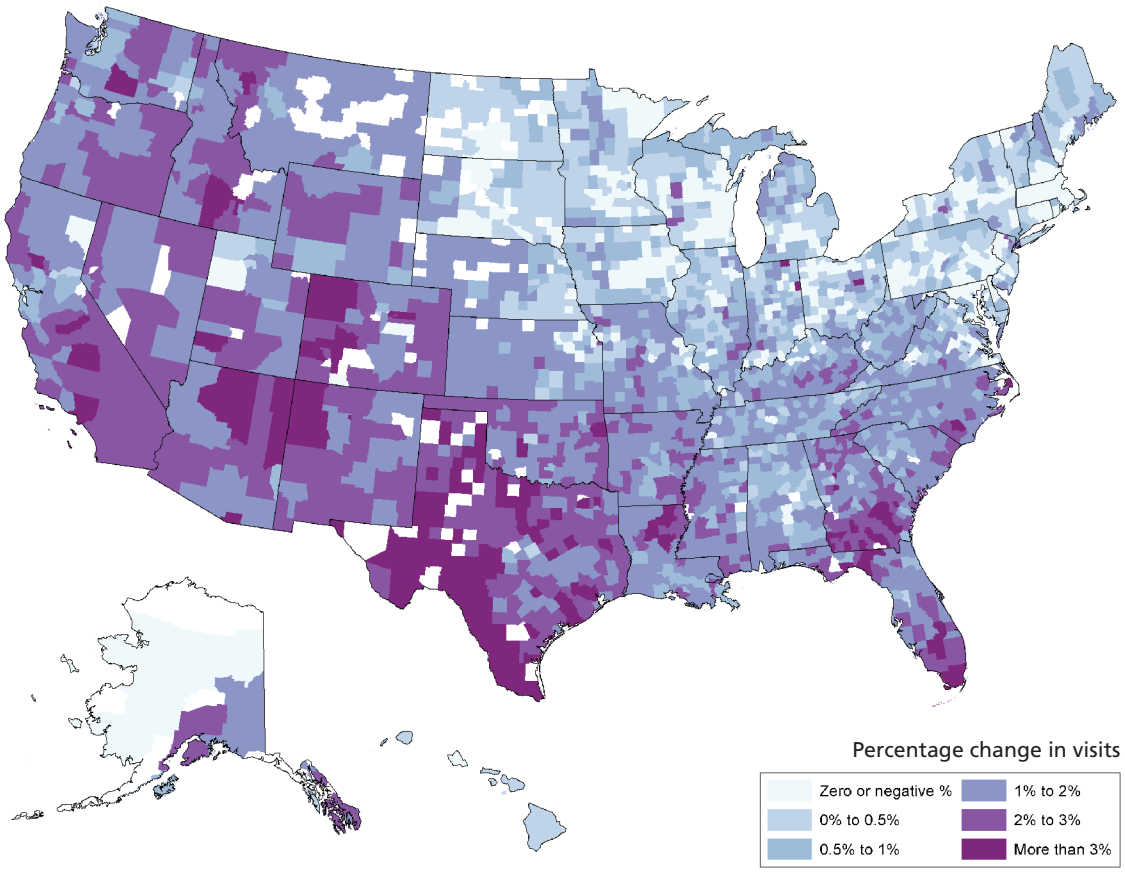
TRICARE Physicians and TRICARE Visits at Risk

Table 3.3 shows the percentage of TRICARE physicians who are at risk because, as described above, they had high per-provider volume prior to ACA and they can replace all of their pre-ACA TRICARE net revenue with net revenue from the newly insured. About 19 percent of

[1] The percentage ranges for all maps in this report are closed on the right side—that is, any range listed in the legend as "*x*% to *y*%" includes all percentages that are greater than *x*% and are less than or equal to *y*%.

[2] The RAND COMPARE estimates that we used to project 2016 coverage account for each state's decision to expand or not to expand Medicaid. See the appendix for more information.

Figure 3.2
Change in Demand Measured in Visits (all payers), 2012 to 2016, by County



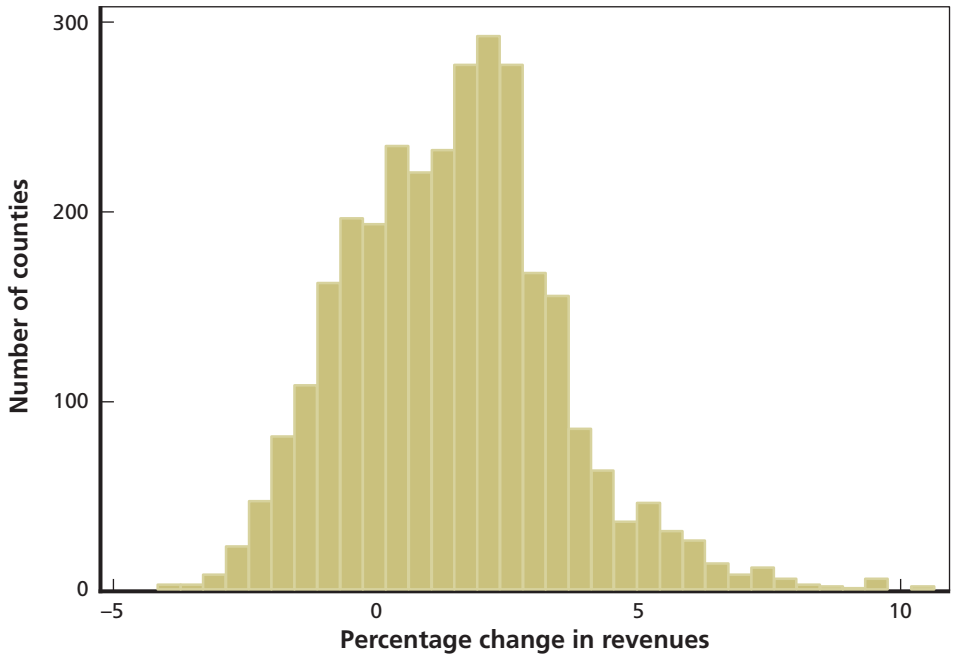
RAND *RR1627-3.2*

TRICARE physicians in the United States met the net revenue criterion. These at-risk physicians account for about 7.4 percent of all TRICARE visits in the United States.

Table 3.3 also shows that there are important differences among physician specialties, network status, and geographic location. Regarding specialties, Table 3.3 presents information for primary care physicians, for the aggregate of all specialties, and for the specialties that interact most with TRICARE patients. There are not substantial differences between primary care physicians and specialists in the aggregate—18.8 percent of primary care physicians are at risk, compared with 19.2 percent of specialty physicians. However, there are important differences among specific specialties. Physicians in some specialties are most often at risk—notably obstetrics and gynecology (28.0 percent) and psychiatry (27.2 percent)—while cardiologists are least often at risk (13.3 percent) under the net revenue criterion.

We also observed important differences by network status. We defined a TRICARE physician to be participating in a TRICARE managed care support contractor network ("in-network") if 50 percent or more of the physician claims in the TRICARE encounter data were coded as in-network. As expected, TRICARE out-of-network physicians have a larger risk of dropping TRICARE patients (21.9 percent are at risk versus 15.8 percent of in-network physi-

Figure 3.3
Distribution of County-Level Changes in Average Physician Revenue



RAND *RR1627-3.3*

Table 3.3
Percentage of TRICARE Physicians and TRICARE Visits at Risk

	% of TRICARE Physicians at Risk	% of TRICARE Visits at Risk
All physicians	18.8%	7.4%
By specialty		
Primary care	18.8%	7.2%
All specialties	19.2%	7.5%
Pediatrics	21.0%	8.8%
Obstetrics and gynecology	28.0%	16.2%
Cardiology	13.3%	4.7%
Neurology	20.1%	10.6%
Orthopedic surgery	17.2%	8.4%
Psychiatry	27.2%	11.4%
By network status		
In-network	15.8%	5.7%
Non-network	21.9%	12.0%
By Primary Service Area status		
PSA	19.5%	6.7%
Non-PSA	17.0%	10.3%

cians), mainly because TRICARE patients represent a smaller fraction of their total pool of patients.

Finally, we also observed differences by whether the county crosses a Prime Service Area (PSA) in which TRICARE managed care support contractors are required to maintain networks of physicians. TRICARE managed care support contractors may have different tools at their disposal and network adequacy requirements for PSAs than the rest of the country. While physicians practicing in counties that overlap with PSAs are slightly more likely to be at risk (19.5 versus 17.0 percent), the fraction of TRICARE visits at risk is higher in counties that do not overlap with PSAs (10.3 versus 6.7 percent).

CHAPTER FOUR

Geographic Variation in Impacts on Purchased Care Access

There are significant differences in the geographic distribution of TRICARE physicians who are at risk of dropping TRICARE patients. These geographic differences are not surprising, given the information presented in the previous chapter regarding how the predicted increase in demand (measured in visits) is dissimilar across the United States (as shown in Figure 3.2). In addition, the differential results between physicians in counties that cross and counties that do not cross a PSA suggest an important additional influence of geography on whether a TRICARE physician is at risk of dropping TRICARE patients.

Our goal in this chapter is to highlight high-level results and differences across broad geographic regions rather than focus on individual counties or other localities. While not part of our study, DoD may ultimately use the results from this section to more closely examine estimates in specific localities, such as counties surrounding individual PSAs or major TRICARE enrollee population centers. The last section in this chapter discusses findings for a small number of specific regions.

Variation in At-Risk Physicians and Visits Across Counties

Table 4.1 provides more-detailed information on the distribution of counties according to the fraction of their TRICARE physicians and TRICARE visits that are at risk. According to the net revenue criterion, about 19 percent of physicians are at risk of dropping TRICARE patients in the United States (Table 3.3). However, we found that in about 25 percent of counties, the fraction of physicians at risk is 50 percent or more, and in about 13 percent of counties, that fraction is 75 percent or more (Table 4.1). Thus, patients in these locales could be more likely to lose access to TRICARE physicians than in other areas of the country.

To better visualize the differences across the United States in the fraction of TRICARE physicians at risk, we illustrate these results in a series of maps that show the geographic distribution of at-risk physicians overall and by specialty, TRICARE network status, and whether the TRICARE physician is located in a PSA. Counties shown in white had no TRICARE providers or visits in our data and were not included in our analyses.

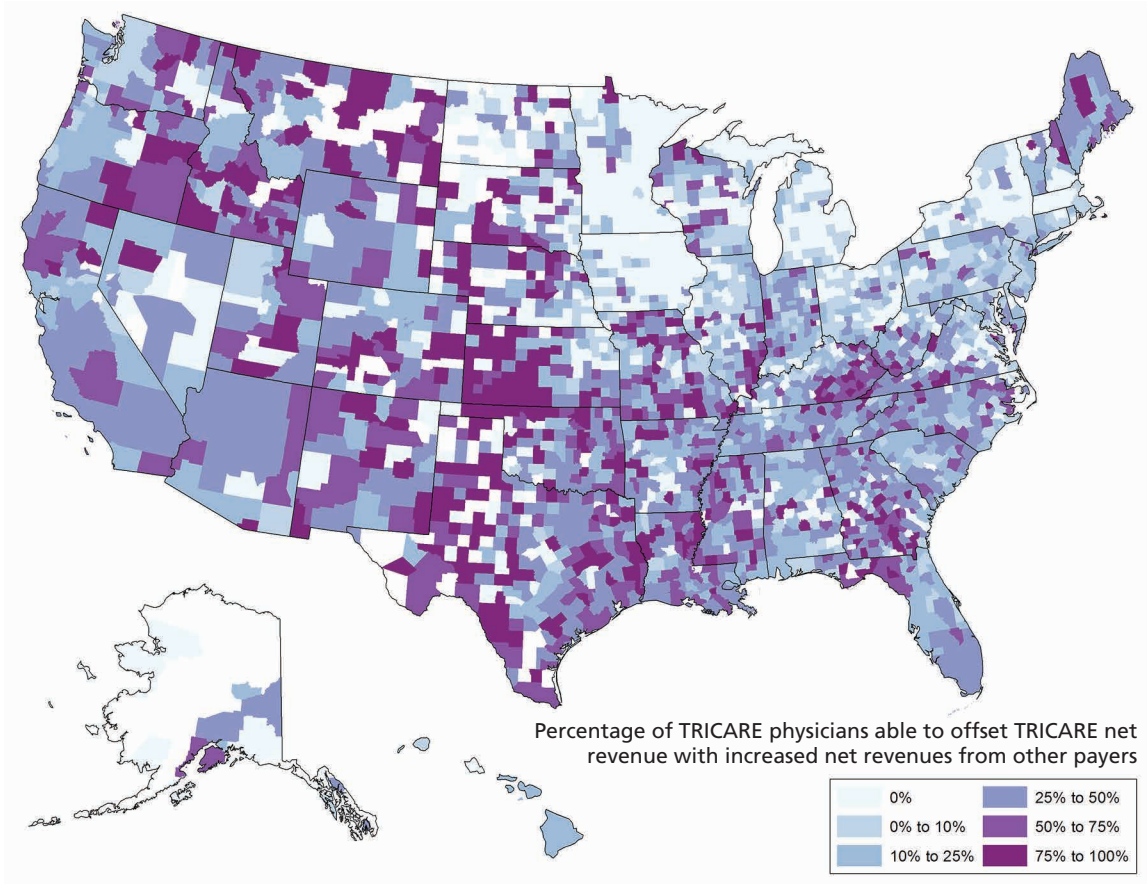
As shown in Figure 4.1, counties with the highest percentage of at-risk TRICARE physicians are located primarily in the Midwest (Texas, Oklahoma, and Kansas) and the Pacific Northwest; in the Northeast and such states as Michigan, Minnesota, and Iowa, fewer physicians would qualify as at risk. The distribution of the percentage of TRICARE visits by at-risk physicians is similar, as shown in Figure 4.2.

Table 4.1
Variation Across Counties in the Proportion of TRICARE Physicians and Visits at Risk

Percentage of TRICARE Physicians at Risk in the County	Number of Counties	Percentage of Counties	Percentage of TRICARE Visits at Risk in the County	Number of Counties	Percentage of Counties
0%	579	19.32%	0%	629	21.23%
1% to 10%	355	11.85%	1% to 10%	924	31.18%
11% to 25%	568	18.95%	11% to 25%	472	15.93%
26% to 50%	738	24.62%	26% to 50%	348	11.74%
51% to 75%	373	12.45%	51% to 75%	166	5.60%
76% to 100%	384	12.81%	76% to 100%	424	14.31%
Total counties	2,997	100%	Total counties	2,963	100%

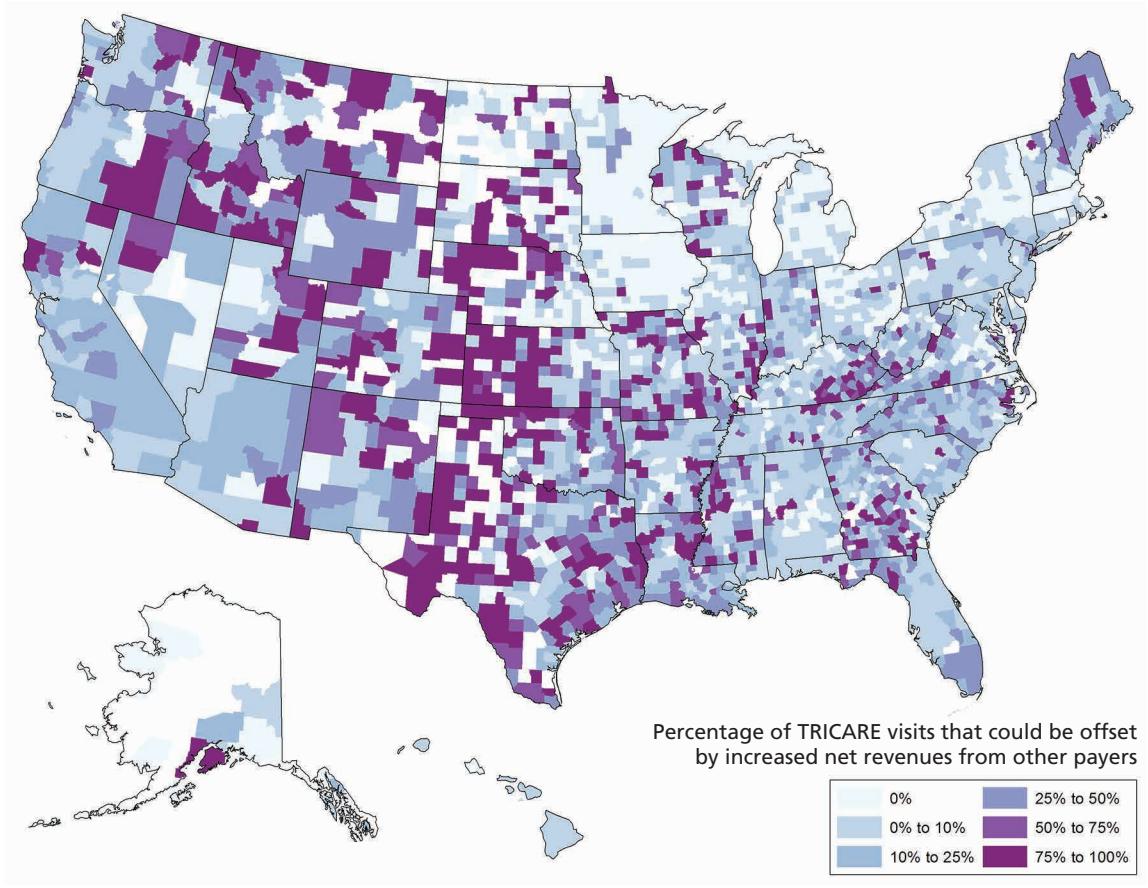
NOTE: Total counties are slightly different because a small number of counties (1.1%) have TRICARE-participating physicians but no TRICARE visits provided to enrollees.

Figure 4.1
Proportion of Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



RAND *RR1627-4.1*

Figure 4.2
Proportion of TRICARE Visits by Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



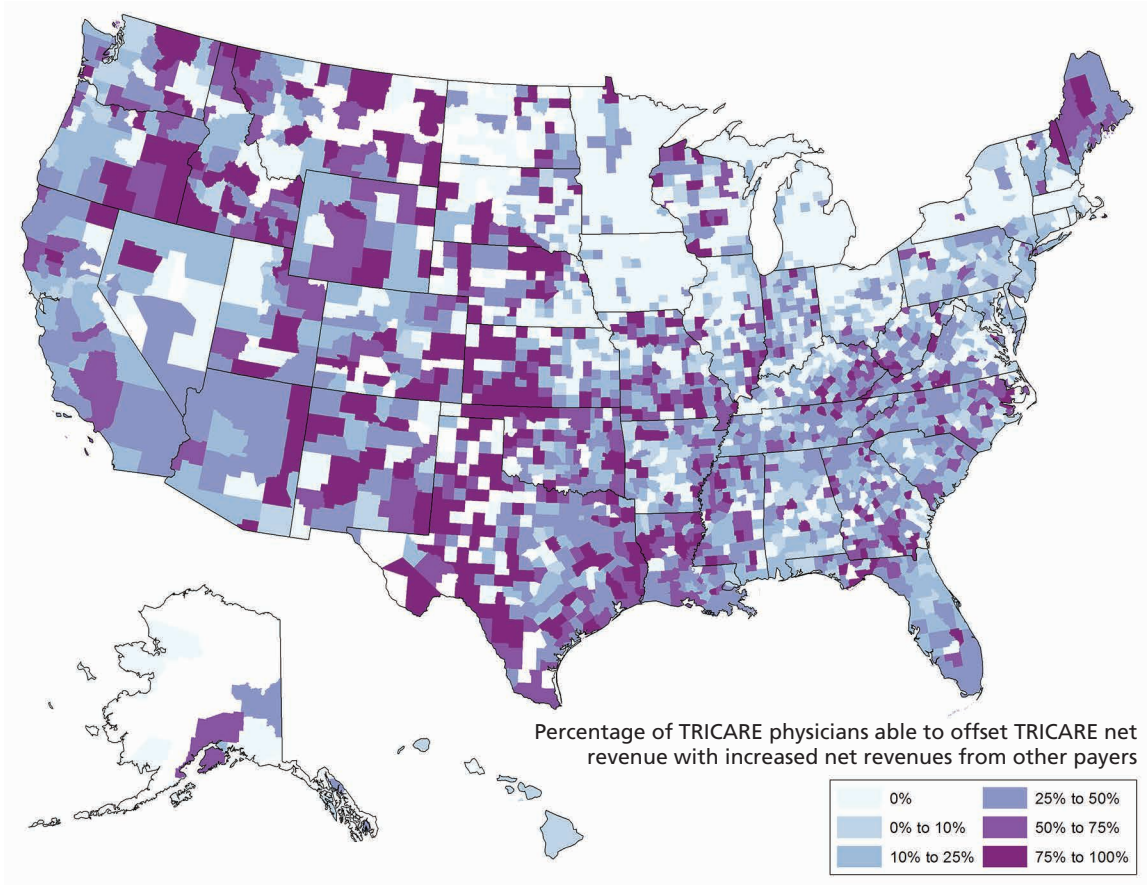
RAND *RR1627-4.2*

Variation in At-Risk Physicians and Visits by Specialty and Network Status

By Specialty

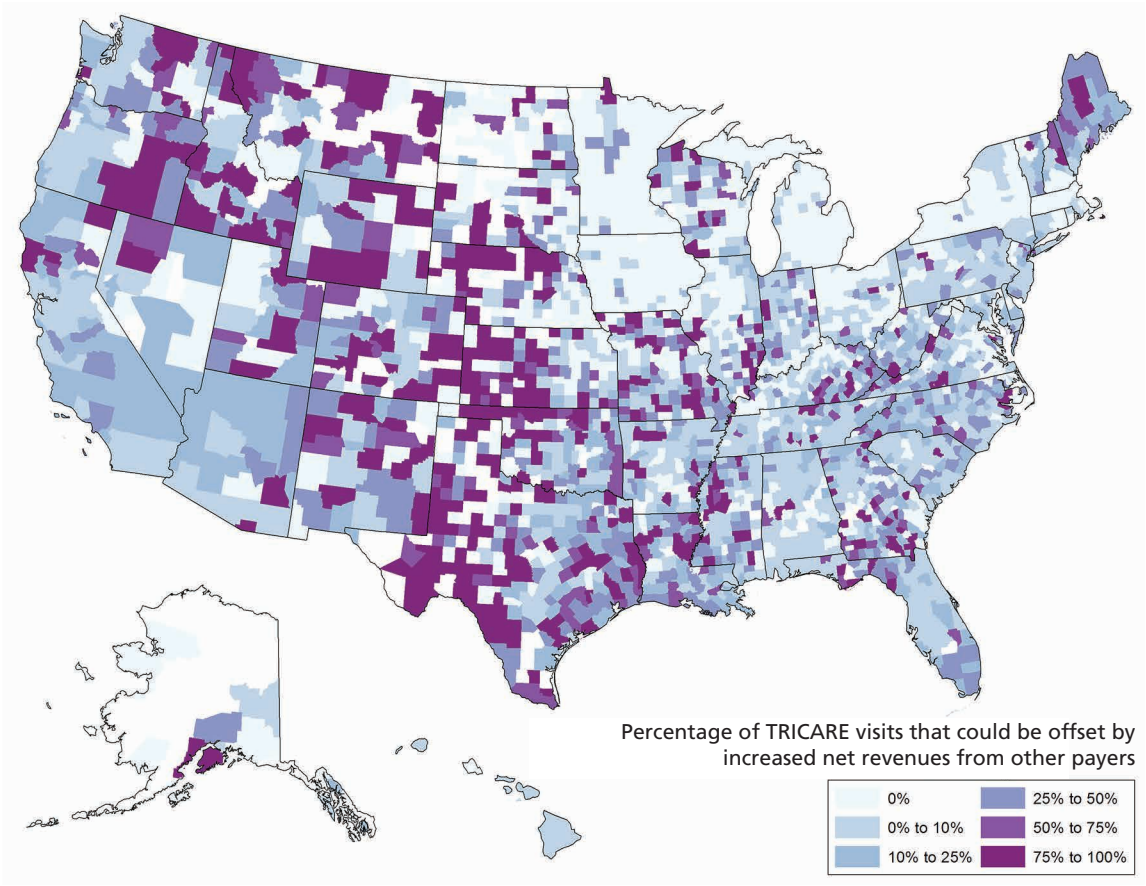
We found slightly higher at-risk rates for primary care physicians than for specialist physicians in general, with significant variation across the six specialties that we evaluated individually. Nationwide, 7.2 percent of TRICARE visits to primary care physicians are at risk, compared with 7.5 percent of TRICARE visits to specialists. Of the six individual specialties, pediatricians, obstetricians/gynecologists, and psychiatrists had the highest at-risk rates, with the obstetrician/gynecologist at-risk rate of 16.2 percent over twice the size of the overall primary care physician rate. In terms of physicians at risk, over one-quarter of TRICARE psychiatrists and obstetricians/gynecologists could replace all of their current TRICARE net revenue with net revenue from projected newly insured patients. At-risk rates for other specialties—especially cardiology—are lower both in terms of TRICARE physicians and TRICARE visits. Figures 4.3 through 4.18 report county-level results for specific specialties. For individual county-level predictions, see the appendix.

Figure 4.3
Proportion of Primary Care Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



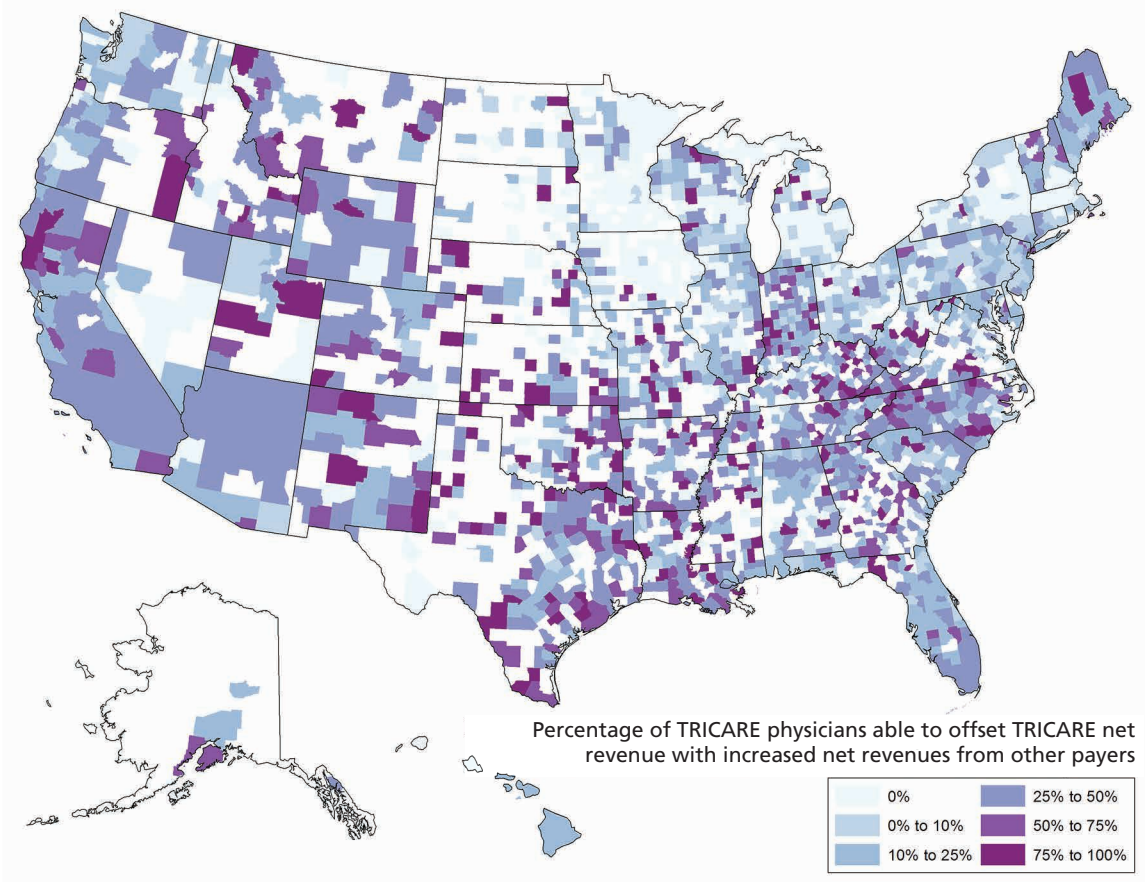
RAND *RR1627-4.3*

Figure 4.4
Proportion of TRICARE Visits by Primary Care Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



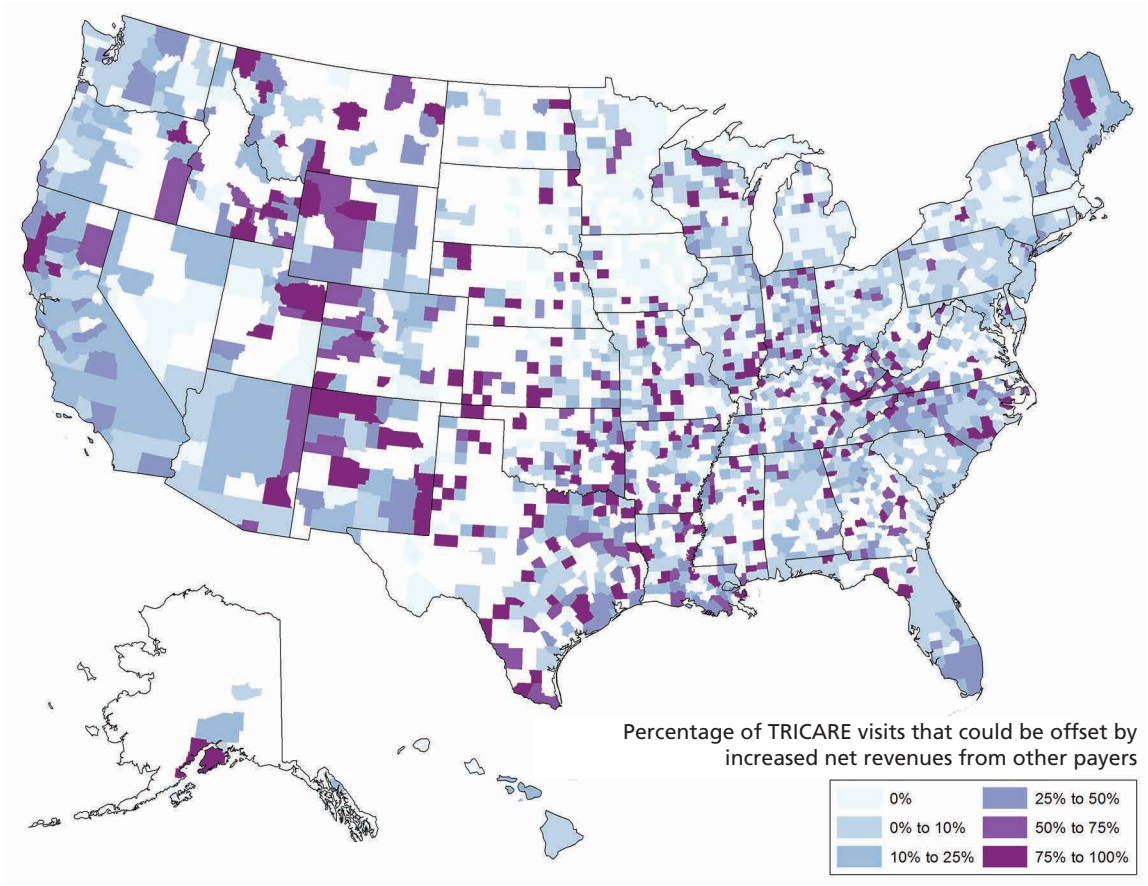
RAND *RR1627-4.4*

Figure 4.5
Proportion of Specialist Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



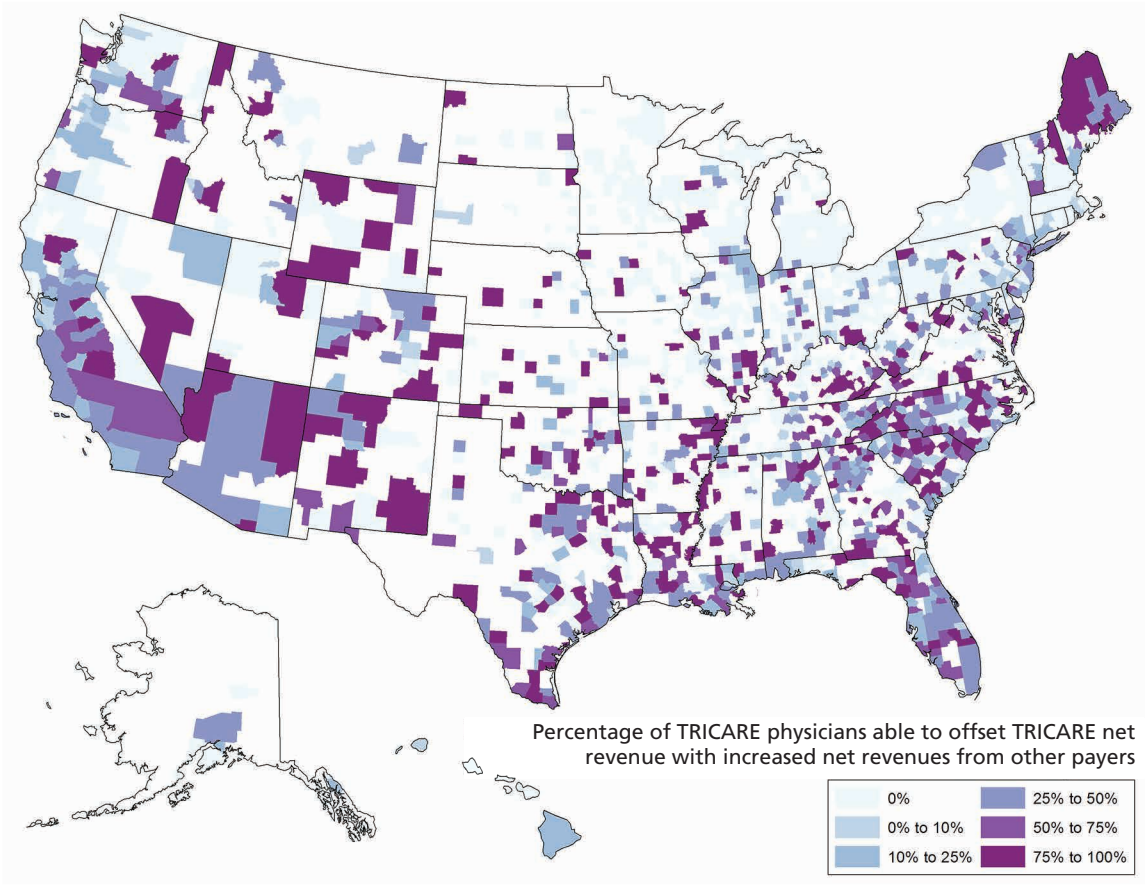
RAND *RR1627-4.5*

Figure 4.6
Proportion of TRICARE Visits by Specialist Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



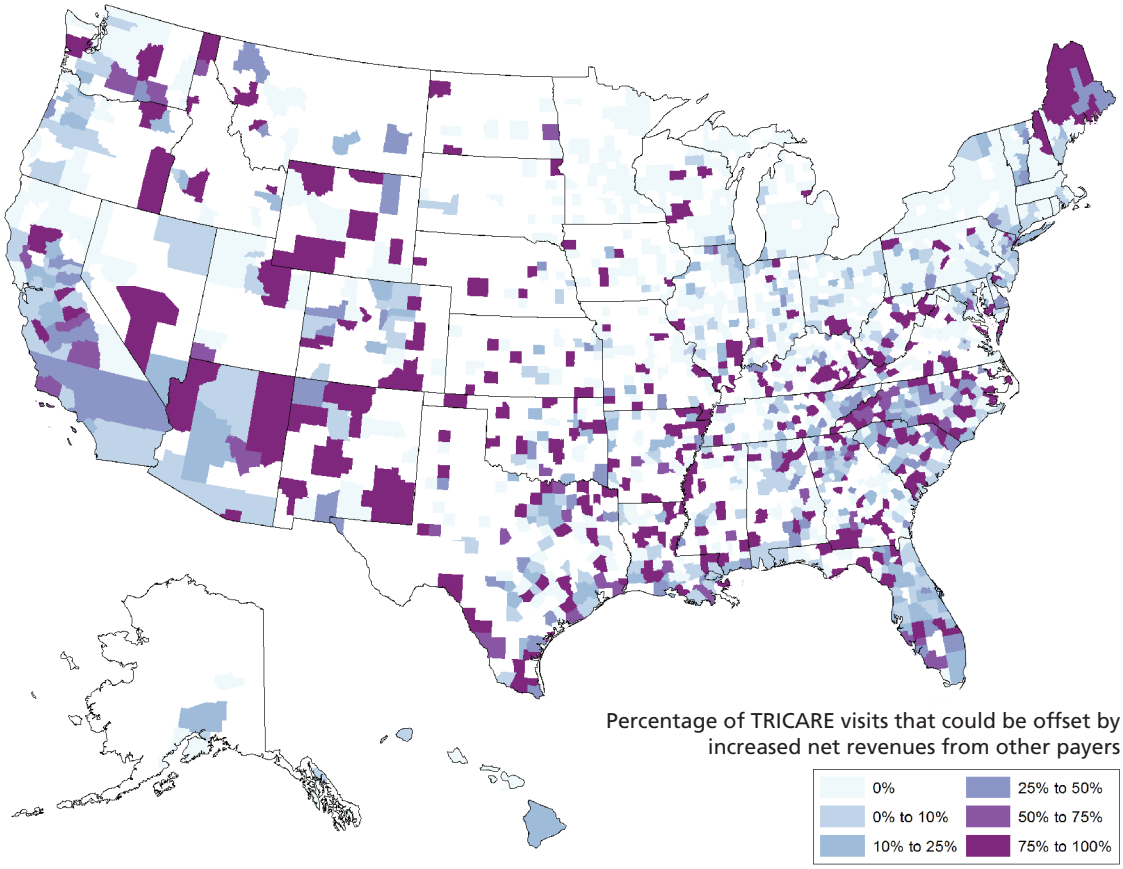
RAND *RR1627-4.6*

Figure 4.7
Proportion of Pediatricians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



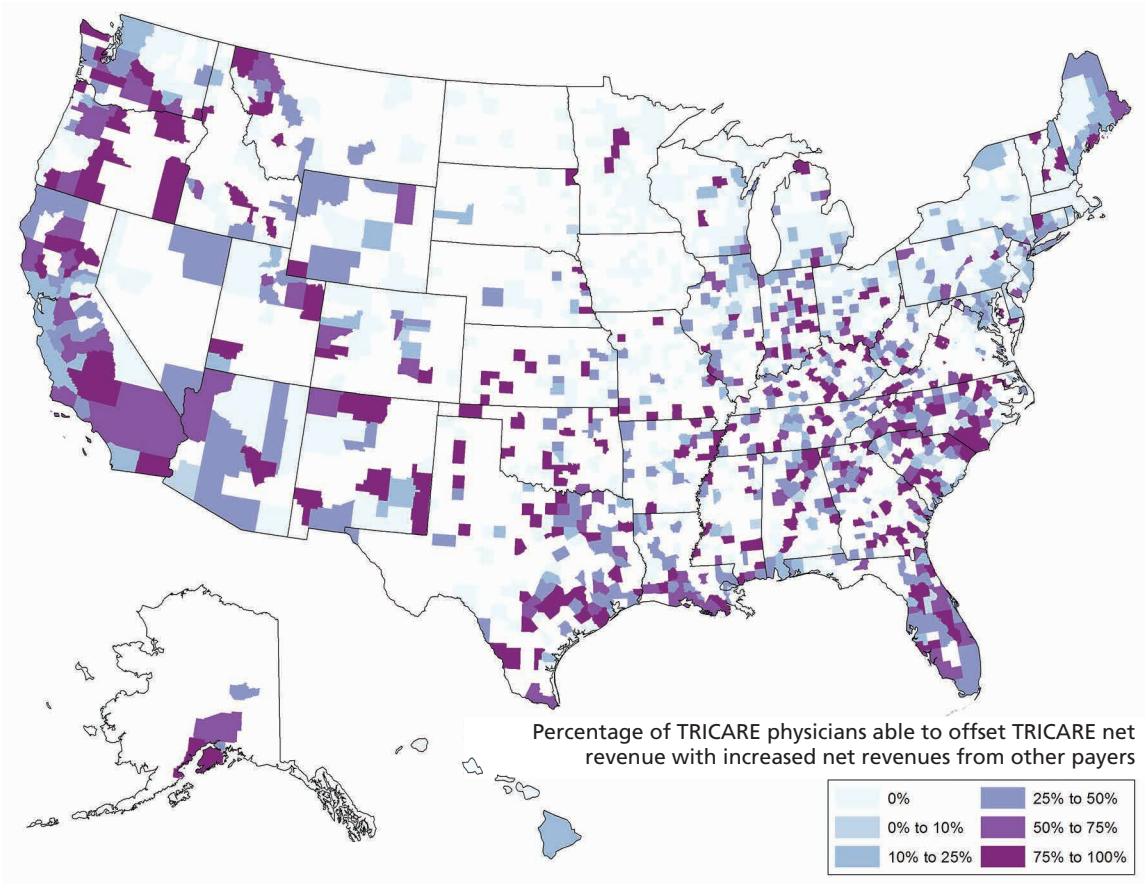
RAND *RR1627-4.7*

Figure 4.8
Proportion of TRICARE Visits by Pediatricians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



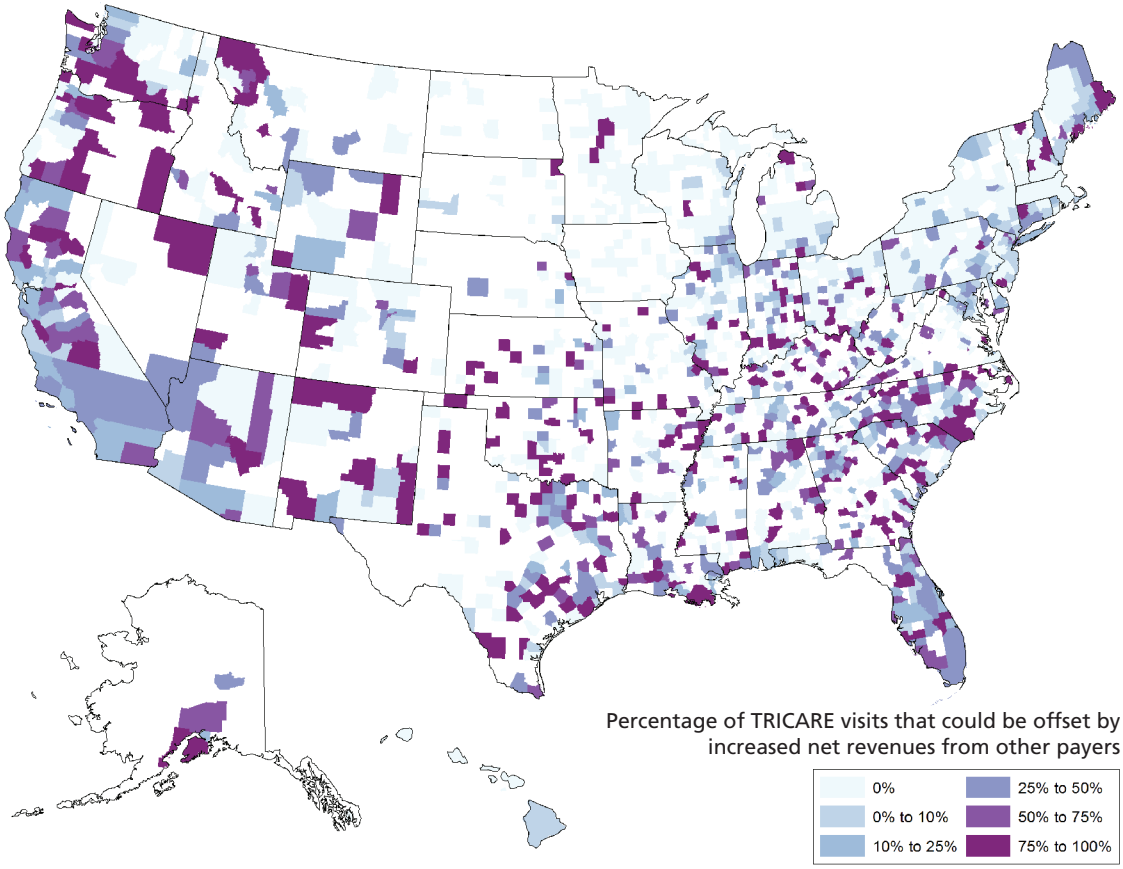
RAND *RR1627-4.8*

Figure 4.9
Proportion of Obstetricians/Gynecologists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



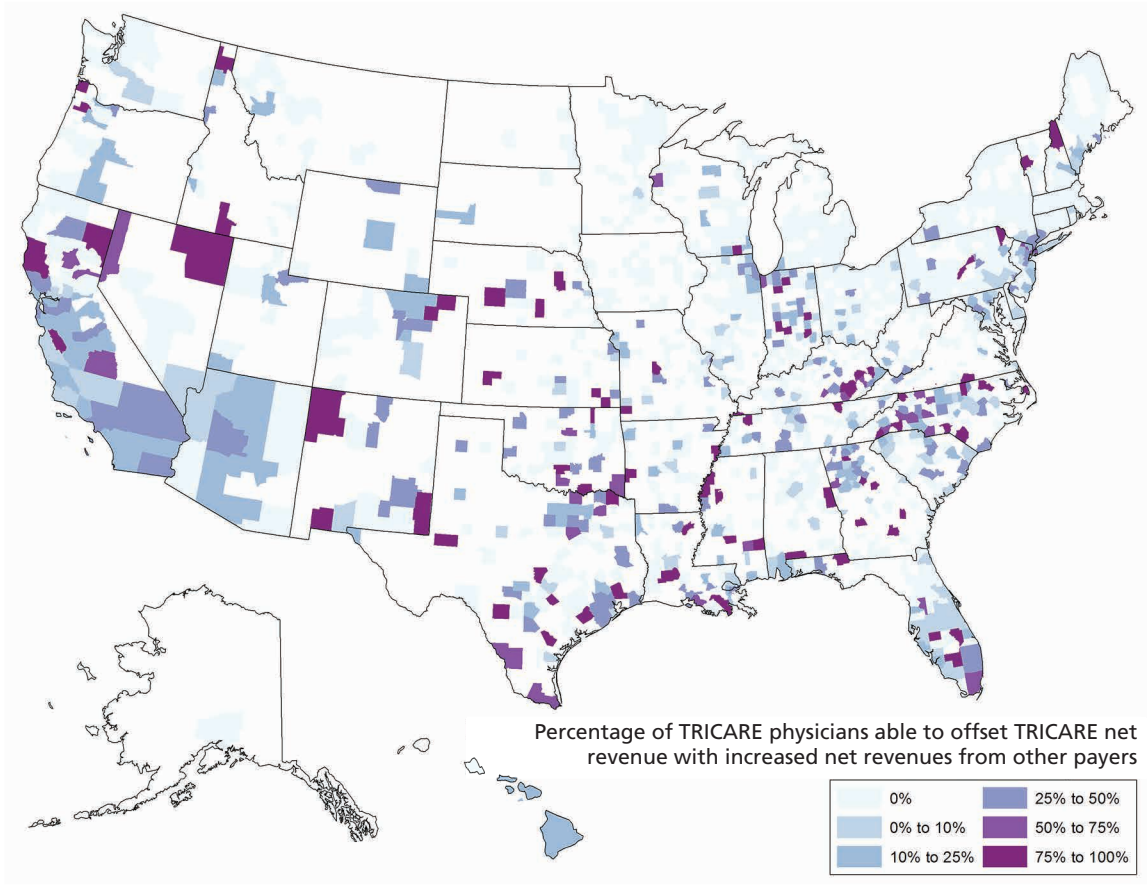
RAND *RR1627-4.9*

Figure 4.10
Proportion of TRICARE Visits by Obstetricians/Gynecologists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



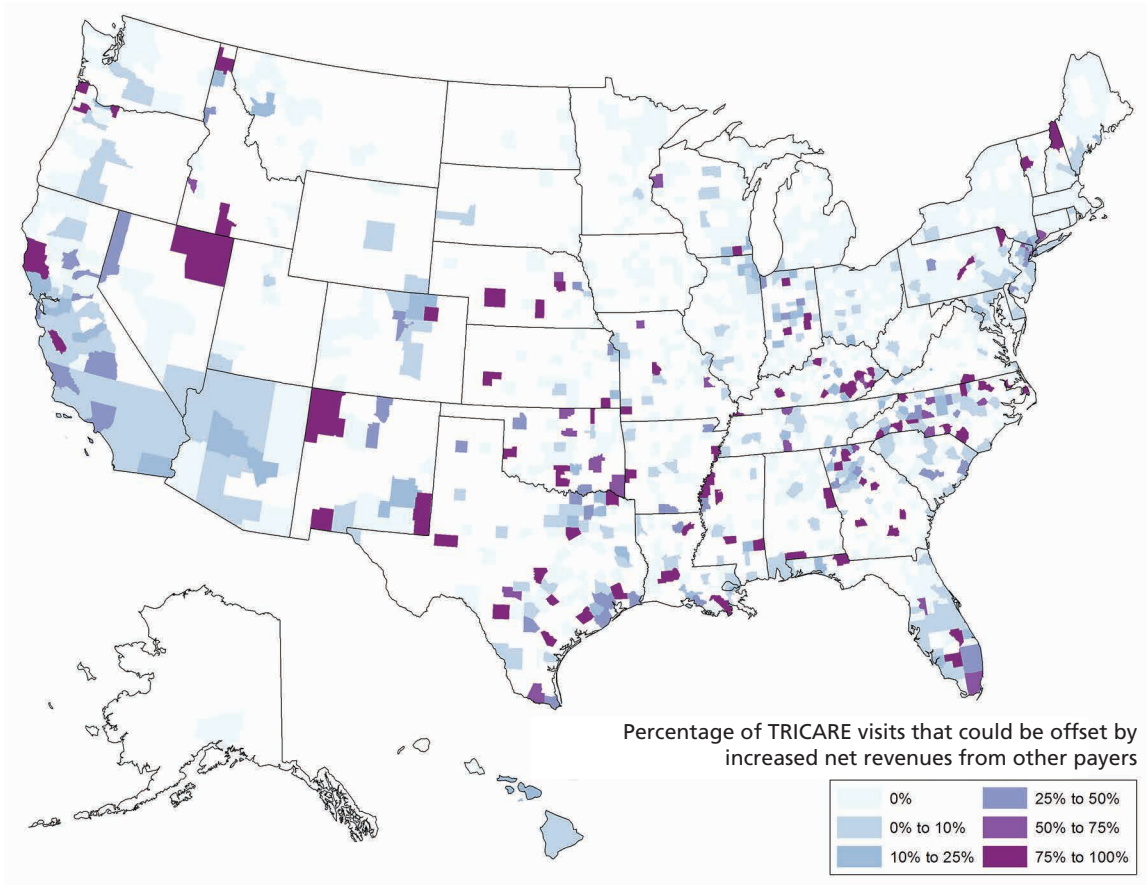
RAND *RR1627-4.10*

Figure 4.11
Proportion of Cardiologists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



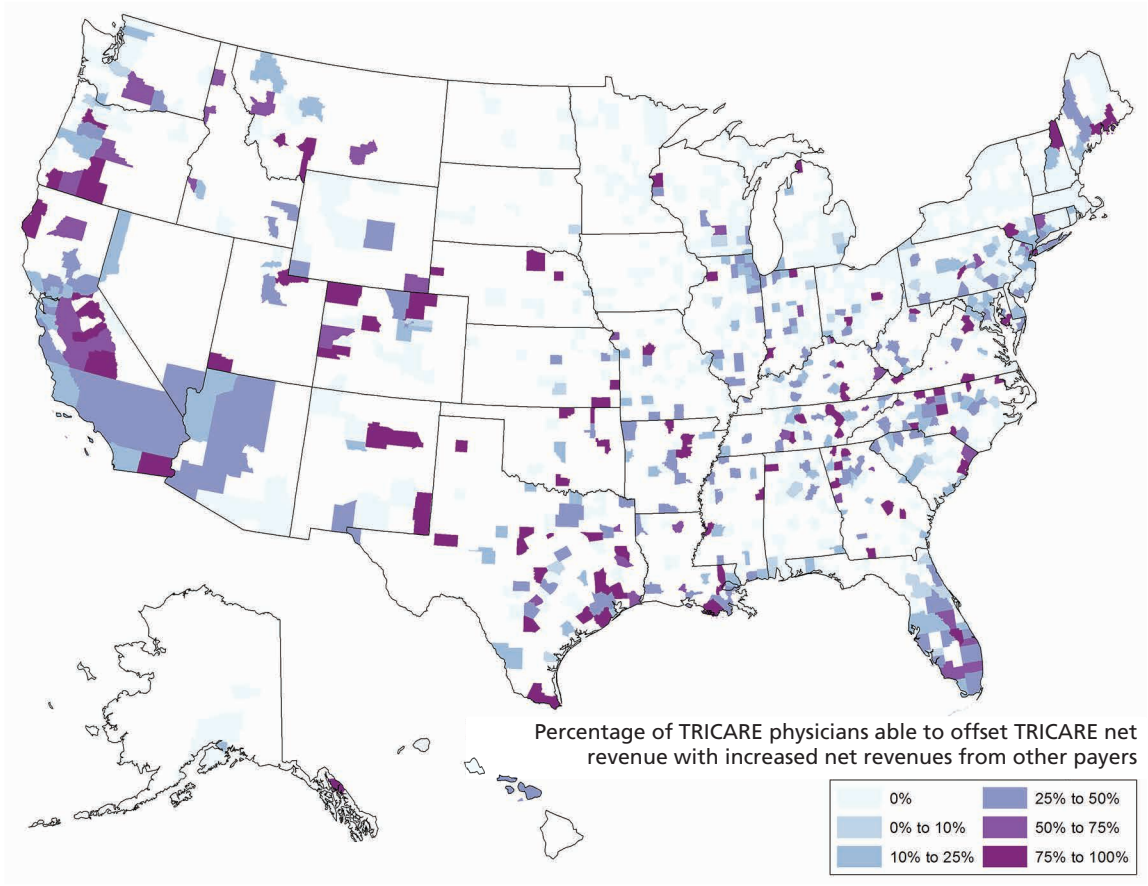
RAND *RR1627-4.11*

Figure 4.12
Proportion of TRICARE Visits by Cardiologists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



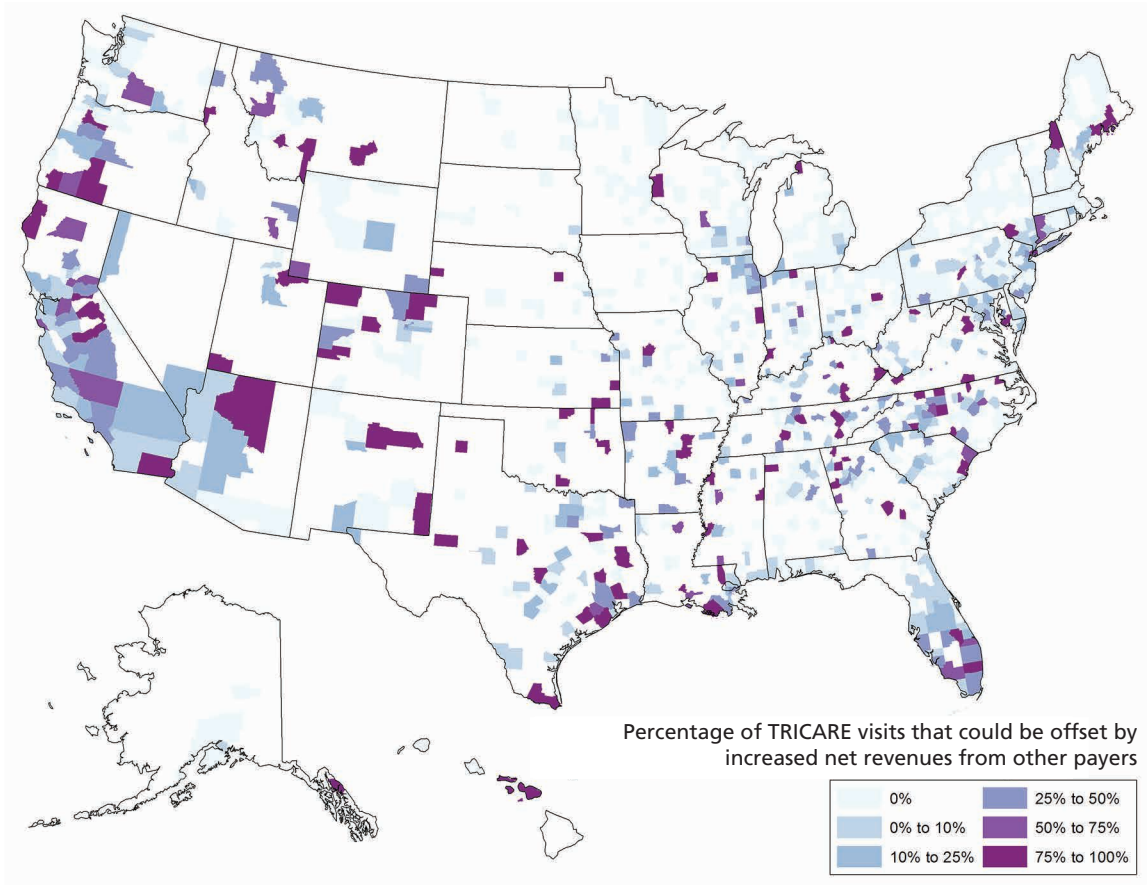
RAND *RR1627-4.12*

Figure 4.13
Proportion of Neurologists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



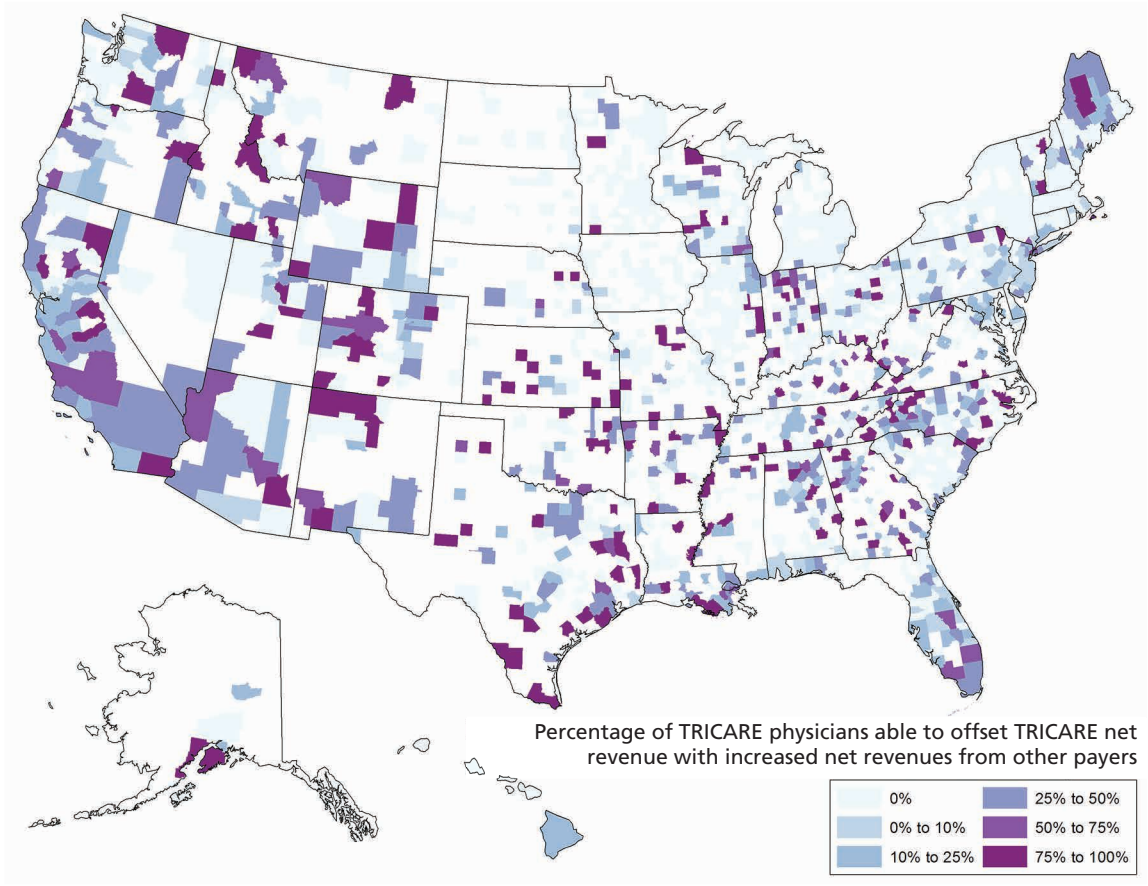
RAND *RR1627-4.13*

Figure 4.14
Proportion of TRICARE Visits by Neurologists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



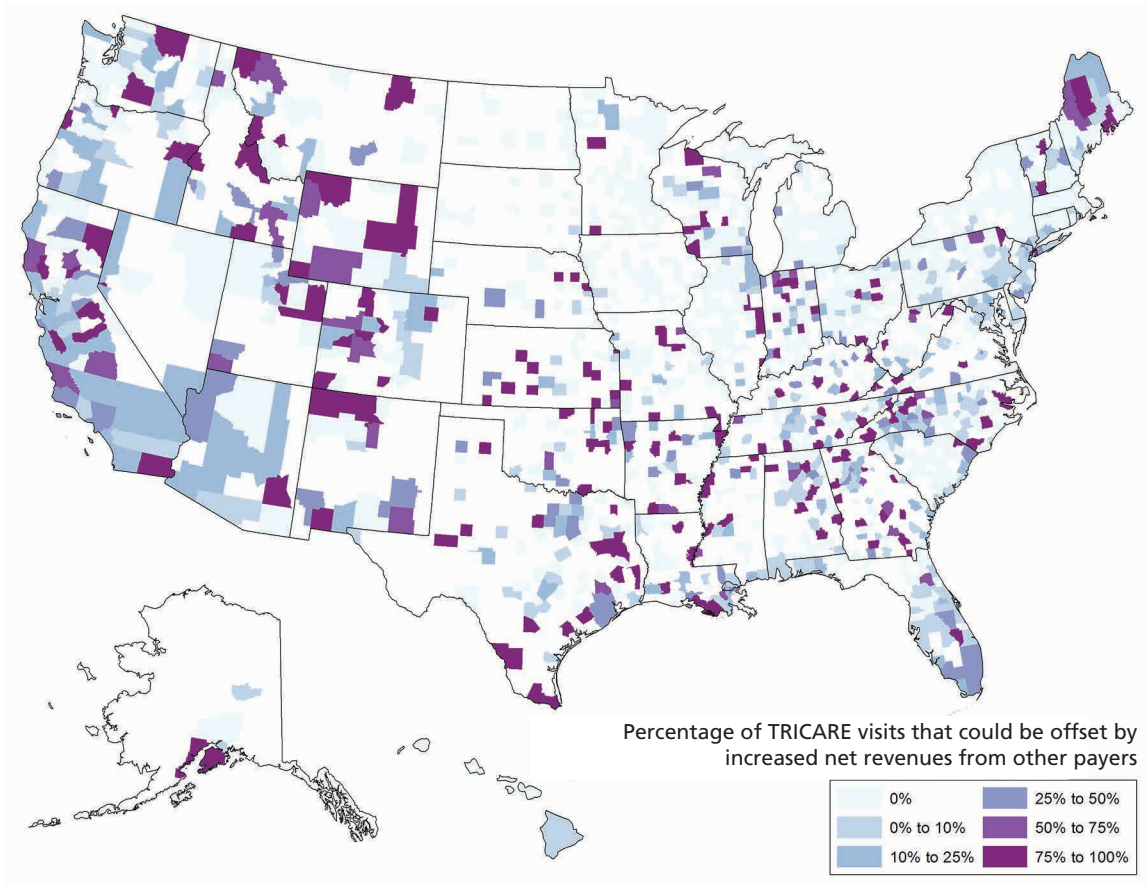
RAND *RR1627-4.14*

Figure 4.15
Proportion of Orthopedists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



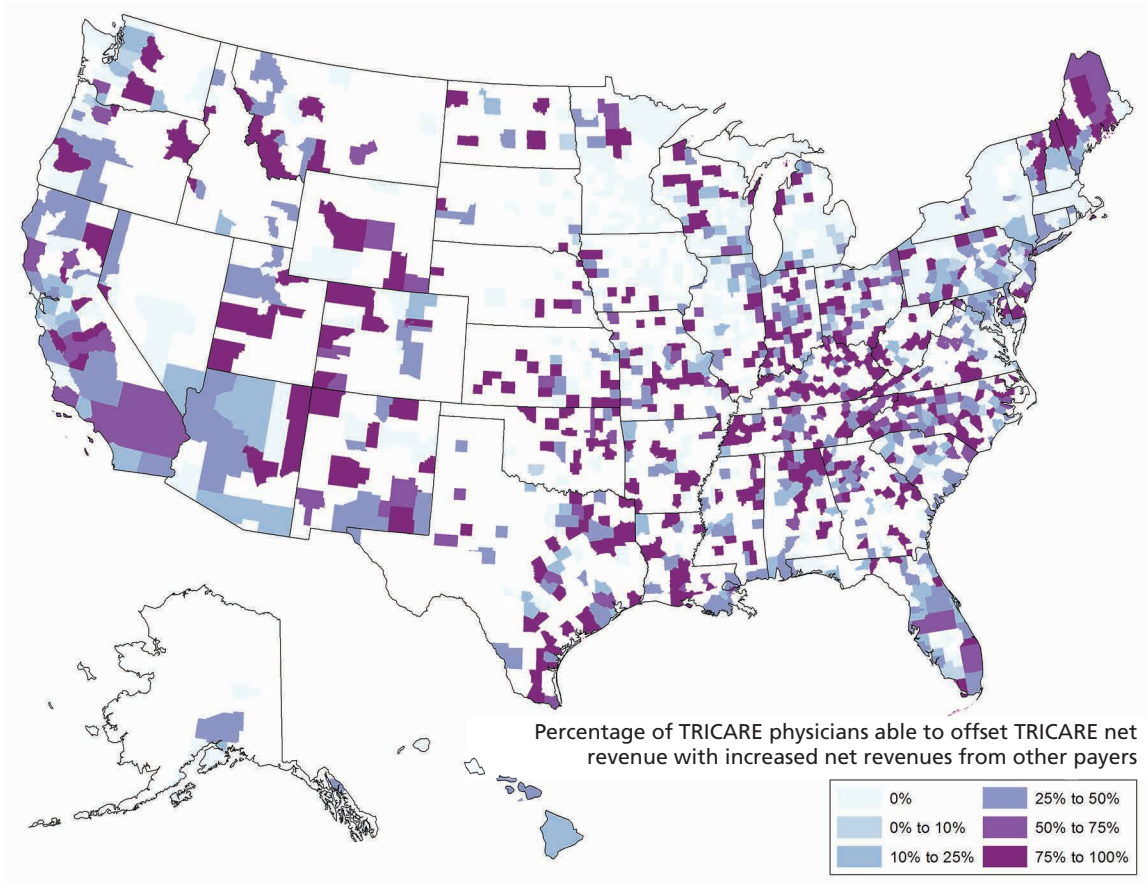
RAND *RR1627-4.15*

Figure 4.16
Proportion of TRICARE Visits by Orthopedists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



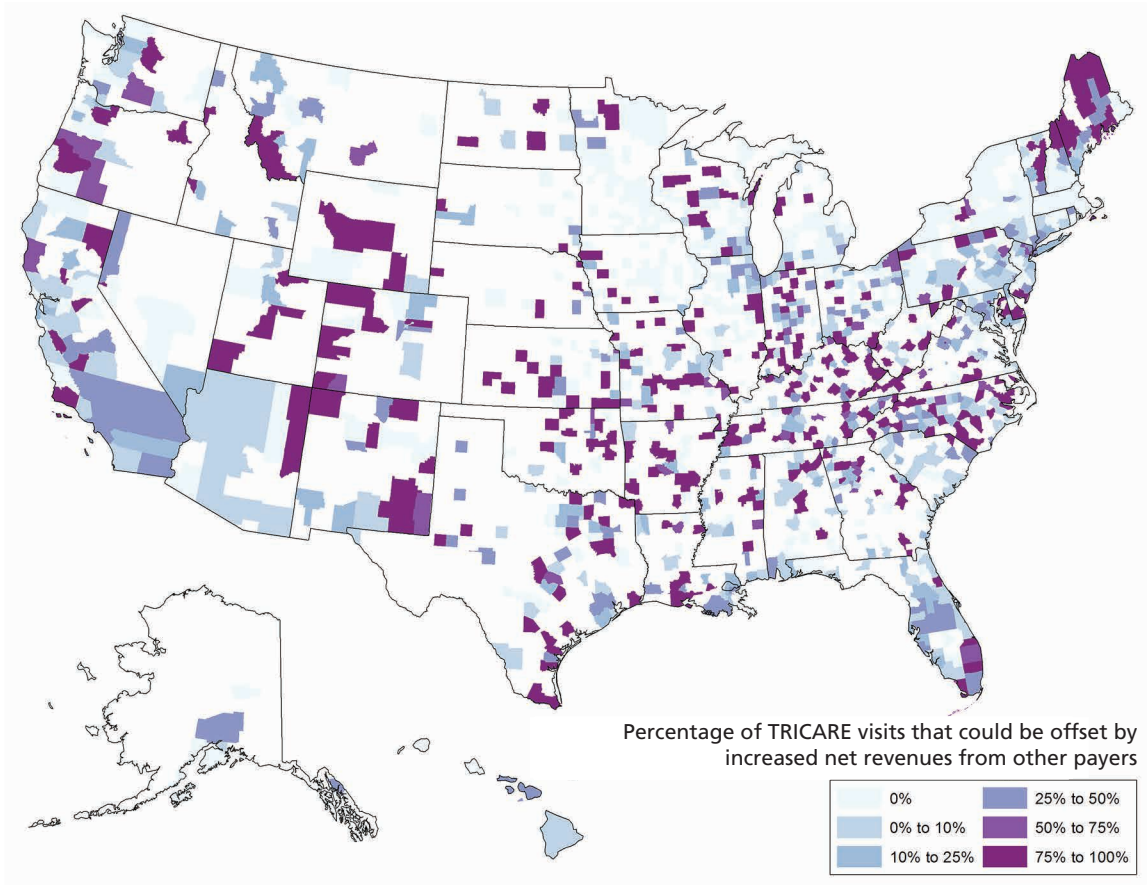
RAND *RR1627-4.16*

Figure 4.17
Proportion of Psychiatrists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



RAND *RR1627-4.17*

Figure 4.18
Proportion of TRICARE Visits by Psychiatrists Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County

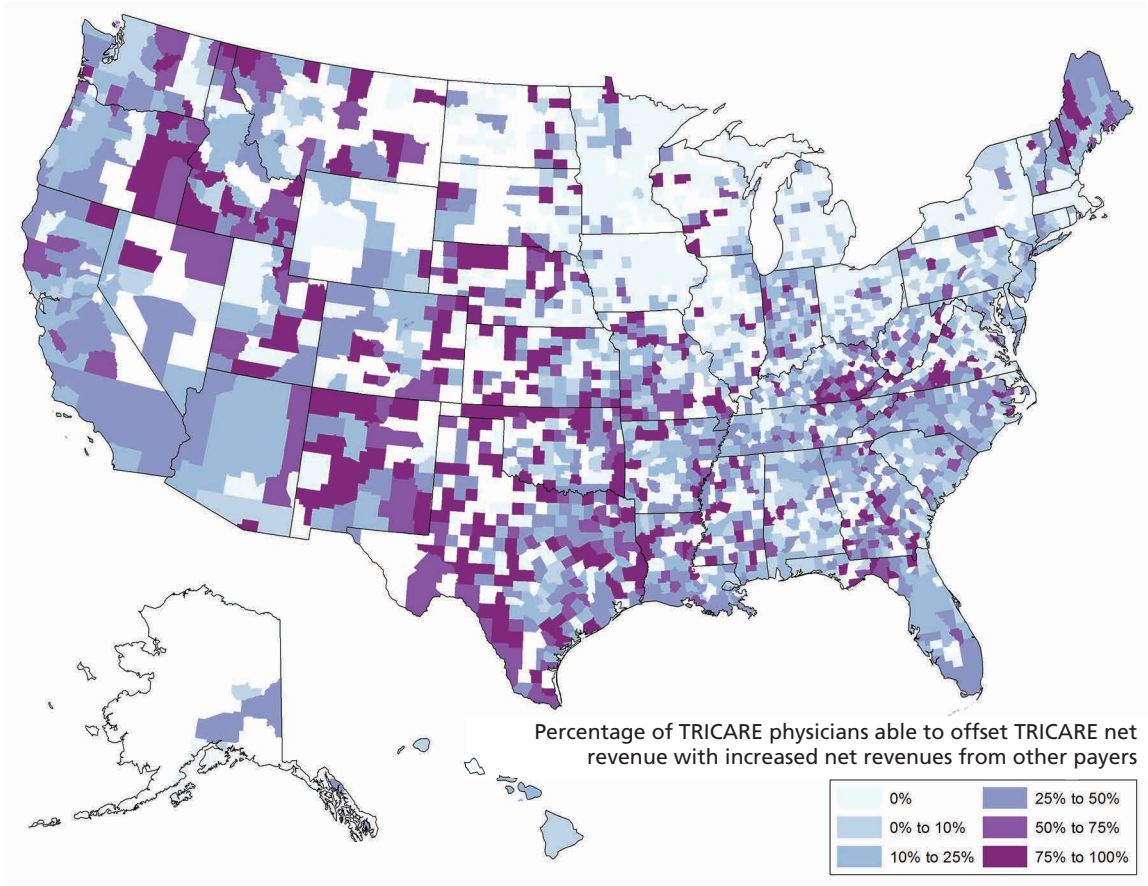


RAND *RR1627-4.18*

By Network

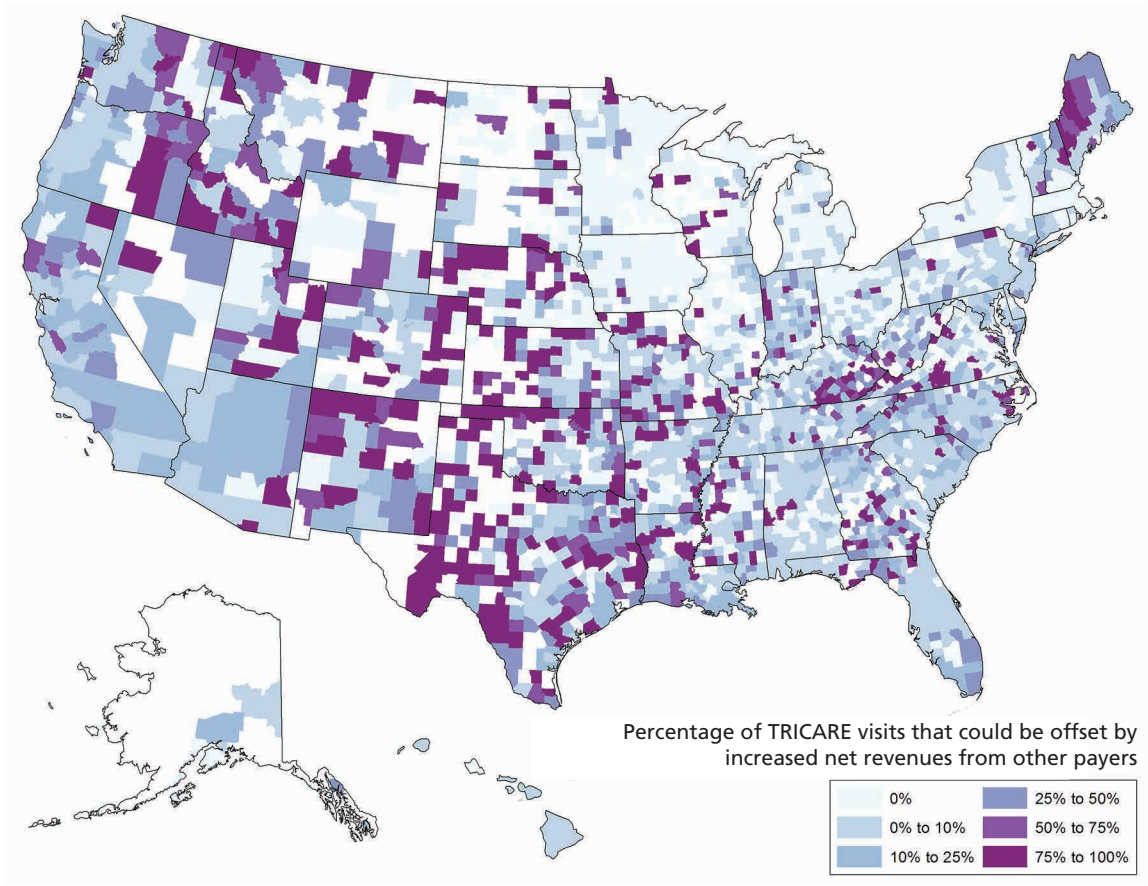
We found that non-network physicians were far more likely to be at-risk than network physicians. TRICARE visits at non-network physicians were more than twice as likely to be at risk when compared with visits at network physicians. One likely explanation for this result is the relatively low volume of TRICARE visits per non-network physician. The geographic distribution of at-risk TRICARE physicians and corresponding patient visits for in-network and out-of-network physicians is shown in Figures 4.19 through 4.22.

Figure 4.19
Proportion of Network Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



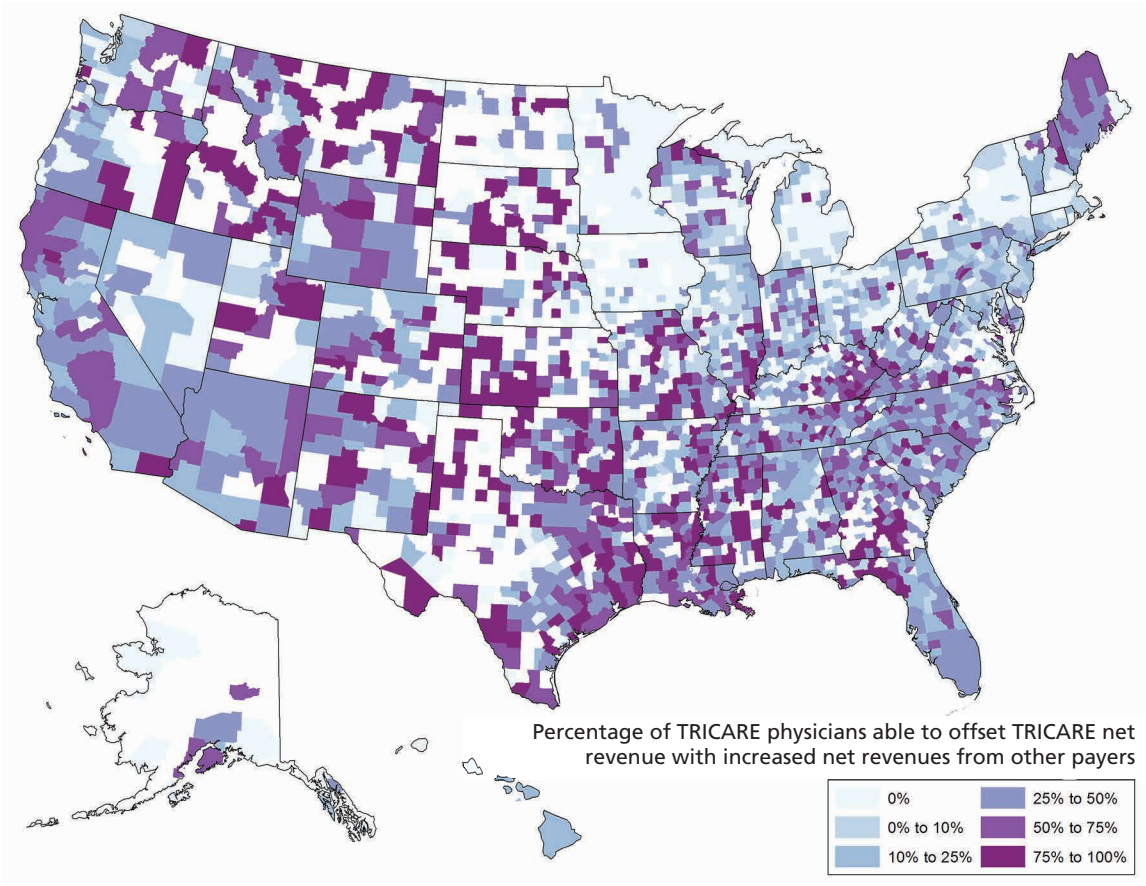
RAND *RR1627-4.19*

Figure 4.20
Proportion of TRICARE Visits by Network Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



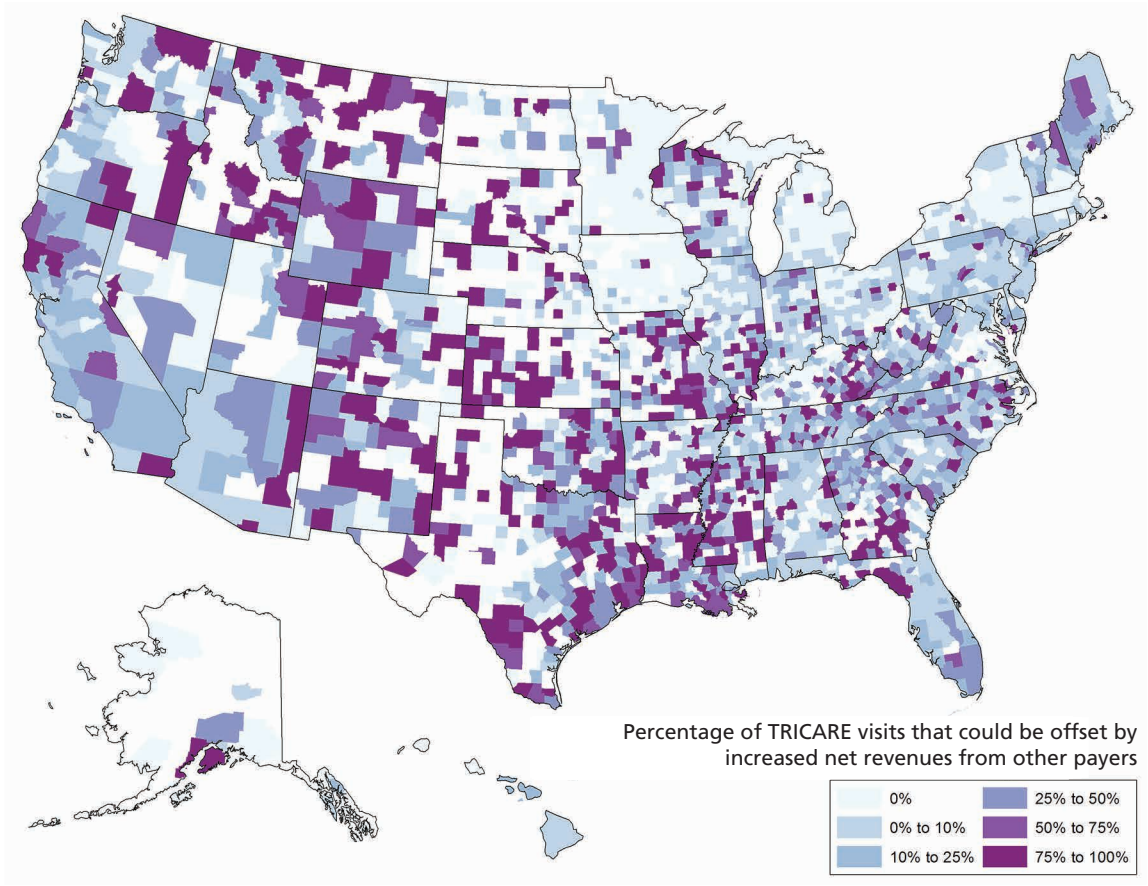
RAND *RR1627-4.20*

Figure 4.21
Proportion of Non-Network Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



RAND *RR1627-4.21*

Figure 4.22
Proportion of TRICARE Visits by Non-Network Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County

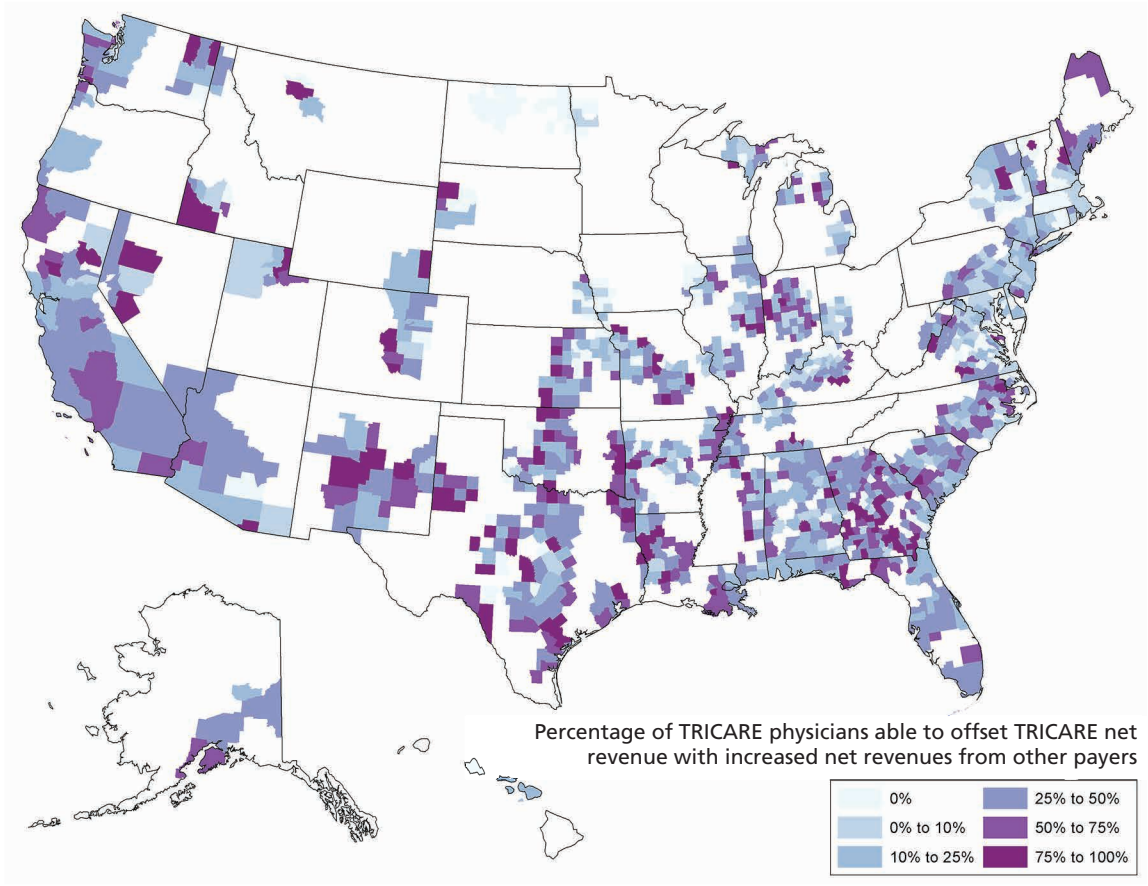


RAND *RR1627-4.22*

By PSA

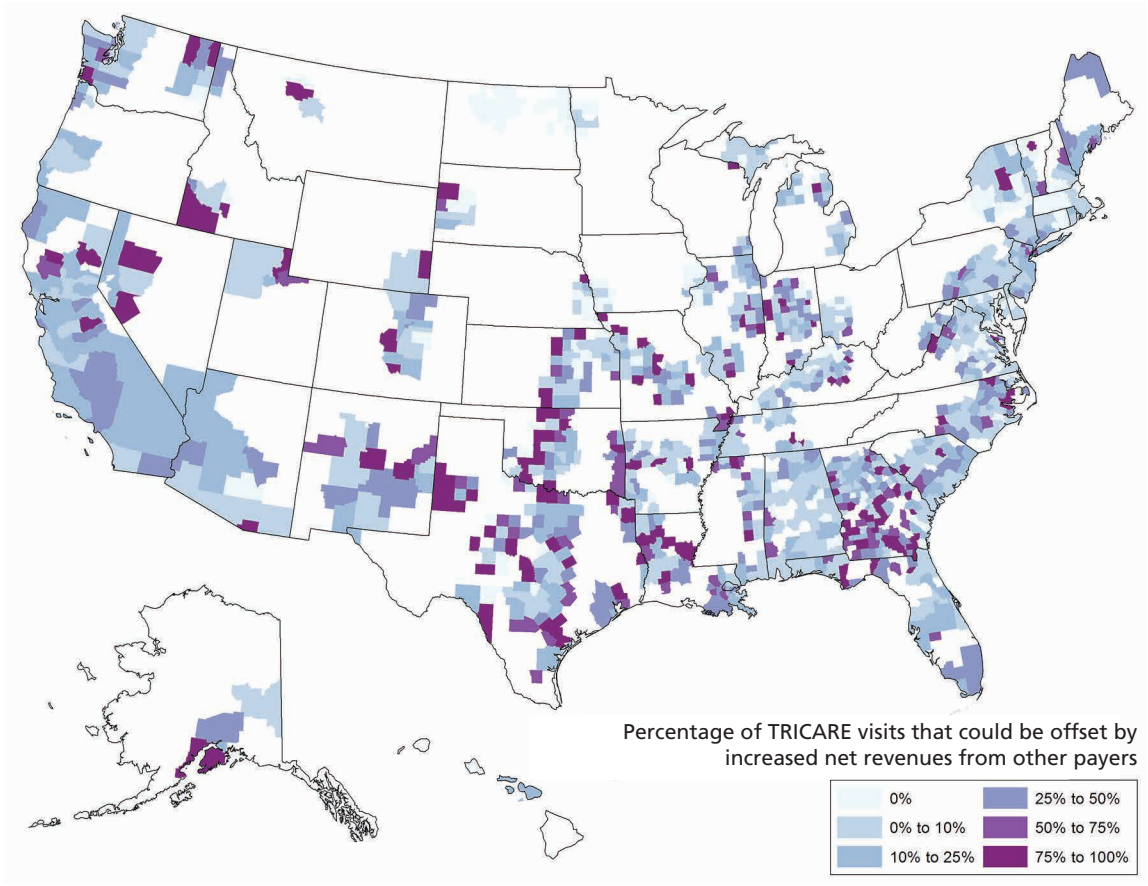
We found that slightly fewer TRICARE physicians who practice outside of PSA boundaries were at risk when compared to TRICARE physicians who practice inside PSA boundaries. However, a larger share of visits outside PSA boundaries were at risk than those inside PSA boundaries. Most TRICARE visits occur within PSA boundaries, and, as a result, the overall national rates of at-risk physicians and visits more closely resemble the PSA results. The geographic distribution of these results is illustrated in Figures 4.23 through 4.26 and shows significant differences between TRICARE physicians who practice inside PSA boundaries and those who do not. In general, we estimated a higher proportion of visits at risk for physicians practicing outside PSA boundaries.

Figure 4.23
Proportion of PSA Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



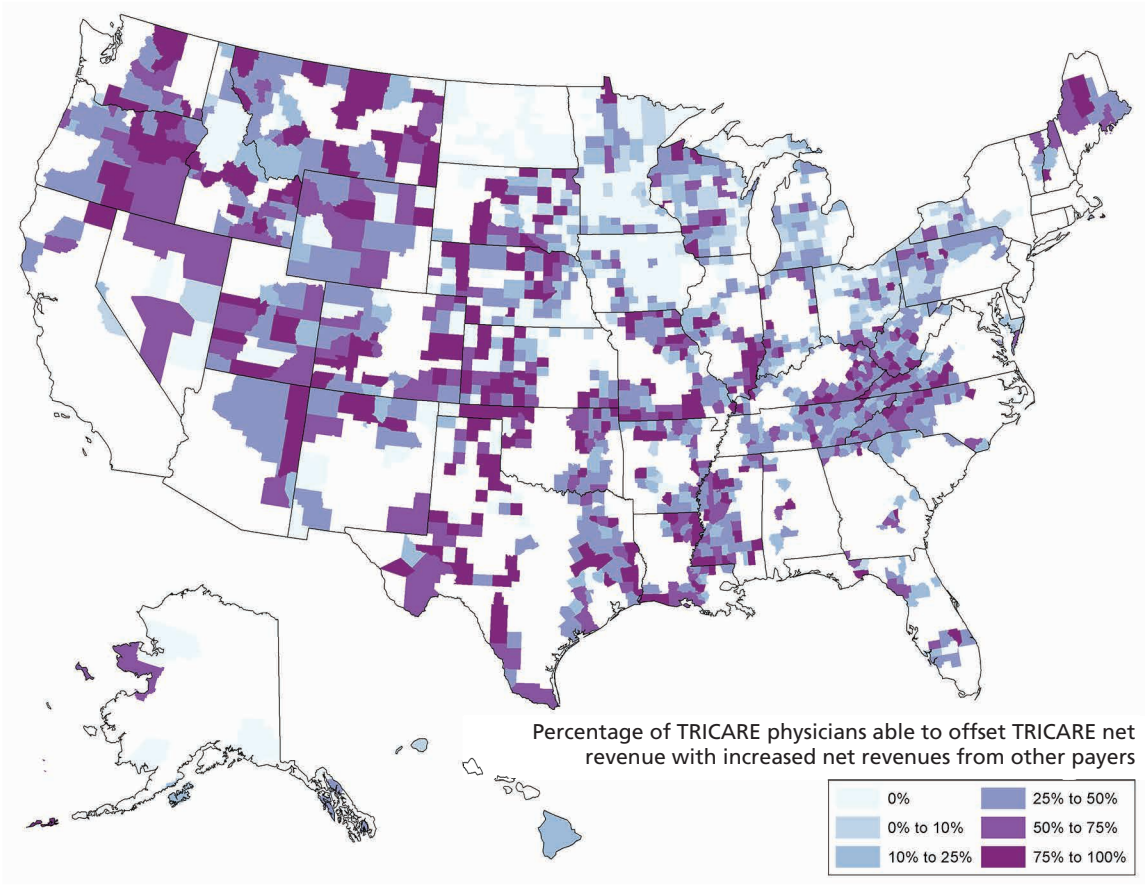
RAND *RR1627-4.23*

Figure 4.24
Proportion of TRICARE Visits by PSA Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



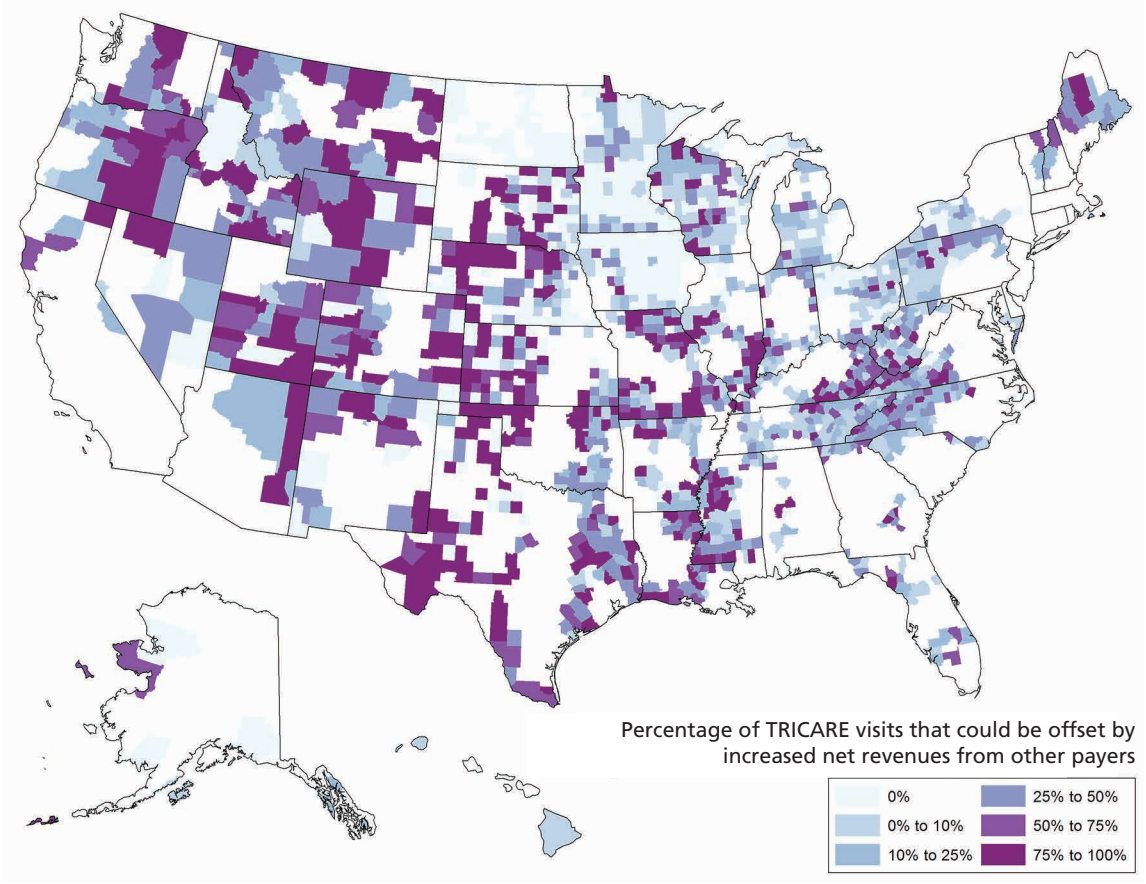
RAND *RR1627-4.24*

Figure 4.25
Proportion of Non-PSA Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



RAND *RR1627-4.25*

Figure 4.26
Proportion of TRICARE Visits by Non-PSA Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County



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Regions with Above-Average At-Risk Rates

We flagged counties with (1) at least 25 percent of TRICARE visits to primary care providers at risk and (2) at least 50 percent of TRICARE visits to at least one study specialty of interest at risk. These counties and PSAs could be monitored by DoD over time to ensure that TRICARE network and other providers are not changing their TRICARE service volume or patient mix. Of the 3,017 U.S. counties, 875 have an estimated 25 percent or more TRICARE primary care visits with at-risk providers, 972 have 50 percent or more of visits at risk in one or more study specialties, and 366 counties (12 percent) meet both criteria. The 366 counties meeting both criteria have only 27 TRICARE visits per day on average, compared with 95 TRICARE visits per day in other counties, suggesting that counties with low TRICARE volume are more likely to have TRICARE purchased care access concerns. Eight counties meeting both criteria are in the top decile of TRICARE counties by volume overall, including Collier, Miami-Dade, and

Palm Beach counties in Florida; St. Louis City County in Missouri; and Cameron, Hidalgo, Jefferson, and Potter counties in Texas.

We also summarized the proportion of counties in each Census division with 25 percent or more TRICARE visits at risk in each provider category (Table 4.2). We found that the Mountain division (Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, and Wyoming) and the West South Central division (Arkansas, Louisiana, Oklahoma, and Texas) had consistently larger shares of counties above the 25 percent threshold. This analysis also highlights the relatively higher shares of TRICARE obstetrics/gynecology and psychiatry visits at risk across divisions.

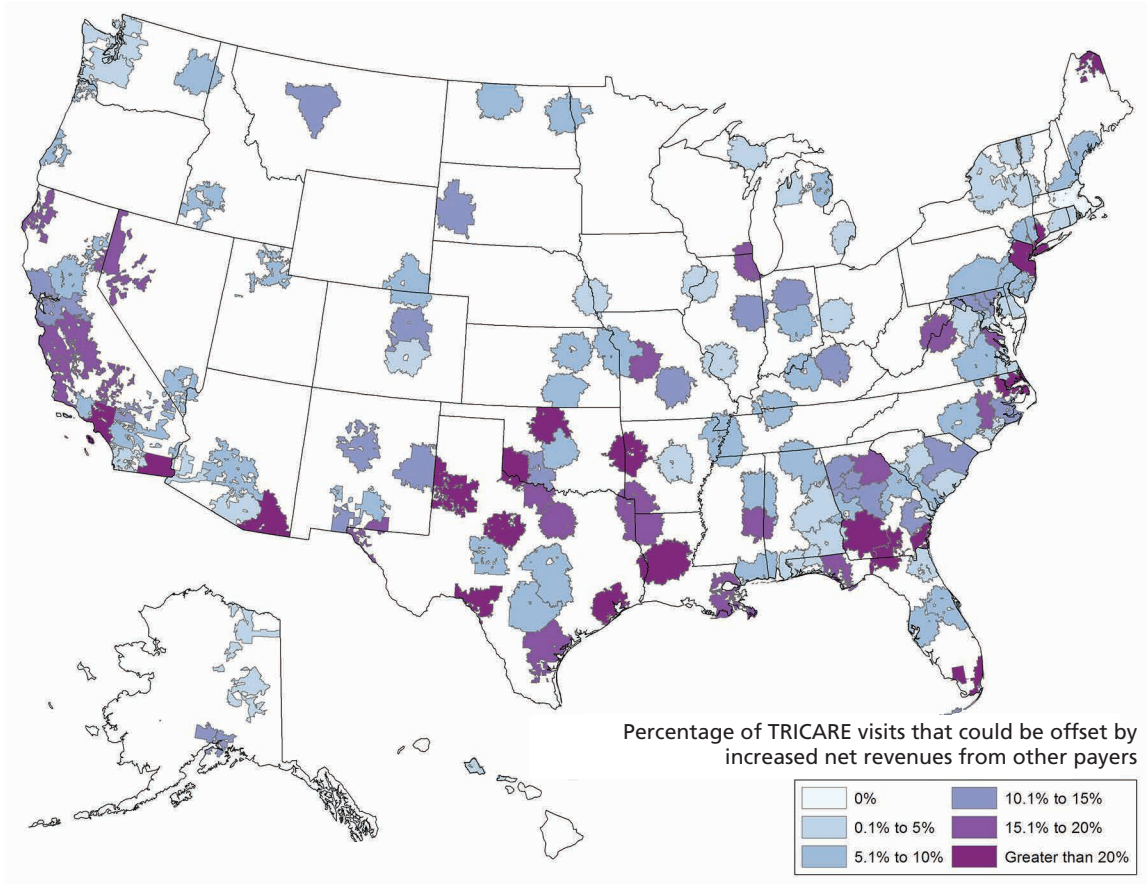
Finally, we calculated PSA-level estimates of visits at risk using population-weighted county to zip code crosswalks and then mapping zip codes to PSA boundaries. Figure 4.27 highlights several of the same regions identified in earlier analyses, including the West South Central Census division (including Texas, Oklahoma, Louisiana, and Arkansas) with relatively many PSAs above the 20-percent TRICARE visit at-risk threshold, South Florida PSAs, and other PSAs in Southern California, the New York City metropolitan area, North Carolina, Georgia, Arizona, and Maine.

Table 4.2
Proportion of Counties in Each Census Division with 25 Percent or More Visits at Risk

	Proportion of Counties (%) with 25 Percent or More Visits at Risk, By Type										
Census Division	All Physicians	In-Network Physicians	Out-of-Network Physicians	Primary Care Physicians	Specialists	Cardiologists	Neurologists	Obstetricians/ Gynecologists	Orthopedic Surgeons	Pediatricians	Psychiatrists
New England	22	17	20	22	14	6	10	20	13	20	31
Middle Atlantic	11	10	11	13	9	10	12	13	10	12	21
South Atlantic	27	23	34	25	24	14	24	49	19	39	37
East South Central	26	23	40	23	30	16	28	48	27	37	58
West South Central	52	45	56	49	48	25	44	55	40	47	57
East North Central	15	10	20	16	17	4	9	22	14	10	32
West North Central	31	26	33	29	21	12	12	17	15	22	33
Mountain	58	51	55	53	47	22	38	46	39	46	47
Pacific	26	26	27	27	20	16	34	50	22	26	30
United States	31	26	35	30	26	14	22	37	21	30	38

NOTES: The denominator for each cell is the count of counties in the cell with visits for the specific physician category or specialty. East North Central includes Wisconsin, Illinois, Indiana, Michigan, and Ohio. East South Central includes Mississippi, Alabama, Tennessee, and Kentucky. Middle Atlantic includes Pennsylvania, New York, and New Jersey. Mountain includes Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, and Wyoming. New England includes Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut. Pacific includes Alaska, Hawaii, Washington, Oregon, and California. South Atlantic includes Florida, Georgia, South Carolina, North Carolina, Virginia, West Virginia, Delaware, Maryland, and Washington, D.C. West North Central includes North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, and Missouri. West South Central includes Texas, Oklahoma, Arkansas, and Louisiana.

Figure 4.27
Proportion of TRICARE Visits by Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by PSA



RAND *RR1627-4.27*

CHAPTER FIVE

Sensitivity Analyses

The results presented in Chapters Three and Four are based on assumptions about payment rates, medical policy changes, and changes in demand. We tested how sensitive our results were to variations in these assumptions. Significant differences in small changes to these measures offer insight into areas that DoD should pay close attention to as the effects of ACA coverage expansion plays out in the years to come.

Payment Rates

We tested the impact of varying the uninsured and exchange payment rate assumptions on our main outcomes of the percentage of TRICARE physicians and visits at risk.[1] Table 5.1 and Table 5.2 report these main outcomes assuming that uninsured and exchange pay rates are 20 percent higher and lower than our base assumptions. The exchange payment rate assump-

Table 5.1
Percentage of TRICARE Physicians at Risk Under Alternative Relative Price Assumptions

		Exchange Pay Rate		
		Minus 20%	Base	Plus 20%
Uninsured pay rate	Minus 20%	18.7%	21.5%	24.4%
	Base	15.9%	18.8%	21.8%
	Plus 20%	13.3%	16.0%	19.0%

Table 5.2
Percentage of TRICARE Visits at Risk Under Alternative Relative Price Assumptions

		Exchange Pay Rate		
		Minus 20%	Base	Plus 20%
Uninsured pay rate	Minus 20%	7.5%	9.2%	11.1%
	Base	5.8%	7.4%	9.2%
	Plus 20%	4.3%	5.7%	7.4%

[1] These assumptions are described in detail in the appendix.

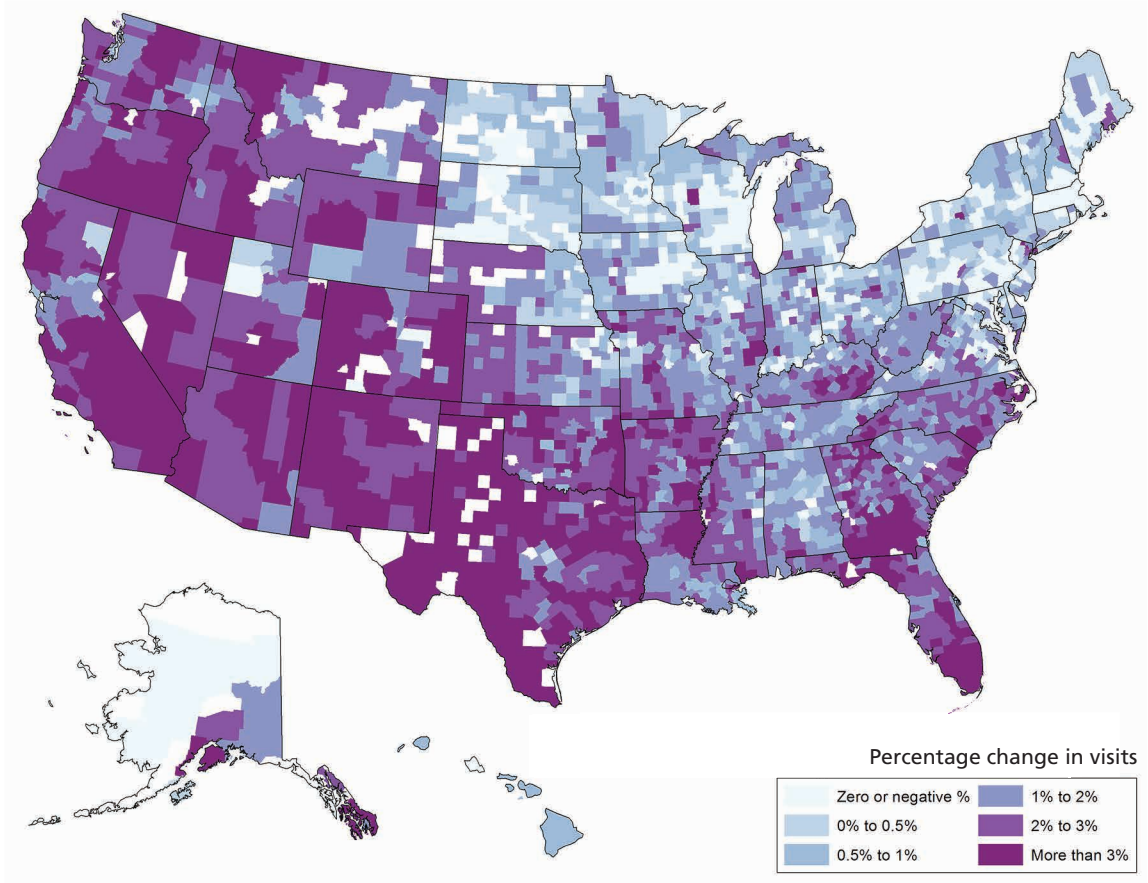
tion is particularly important because many of the newly insured will have coverage through exchange plans.

Varying these assumptions causes the percentage of TRICARE physicians at risk to vary from a low of 13.3 percent to a high of 24.4 percent, compared with the 18.8 percent found in the base case. The percentage of TRICARE visits at risk ranged from 4.3 percent to 11.1 percent, compared with the 7.4 percent base case. The lowest proportion of TRICARE providers and visits at risk are in the scenario with exchange rates at 20 percent below our base assumption and uninsured rates at 20 percent above our base assumption. While 13 percent of TRICARE physicians remain at risk even under this scenario, only 4 percent of visits are at risk, reflecting the fact that fixed costs play into physicians' decisions in our framework and that some physicians see a very low volume of TRICARE patients.

Medicaid Policy Changes

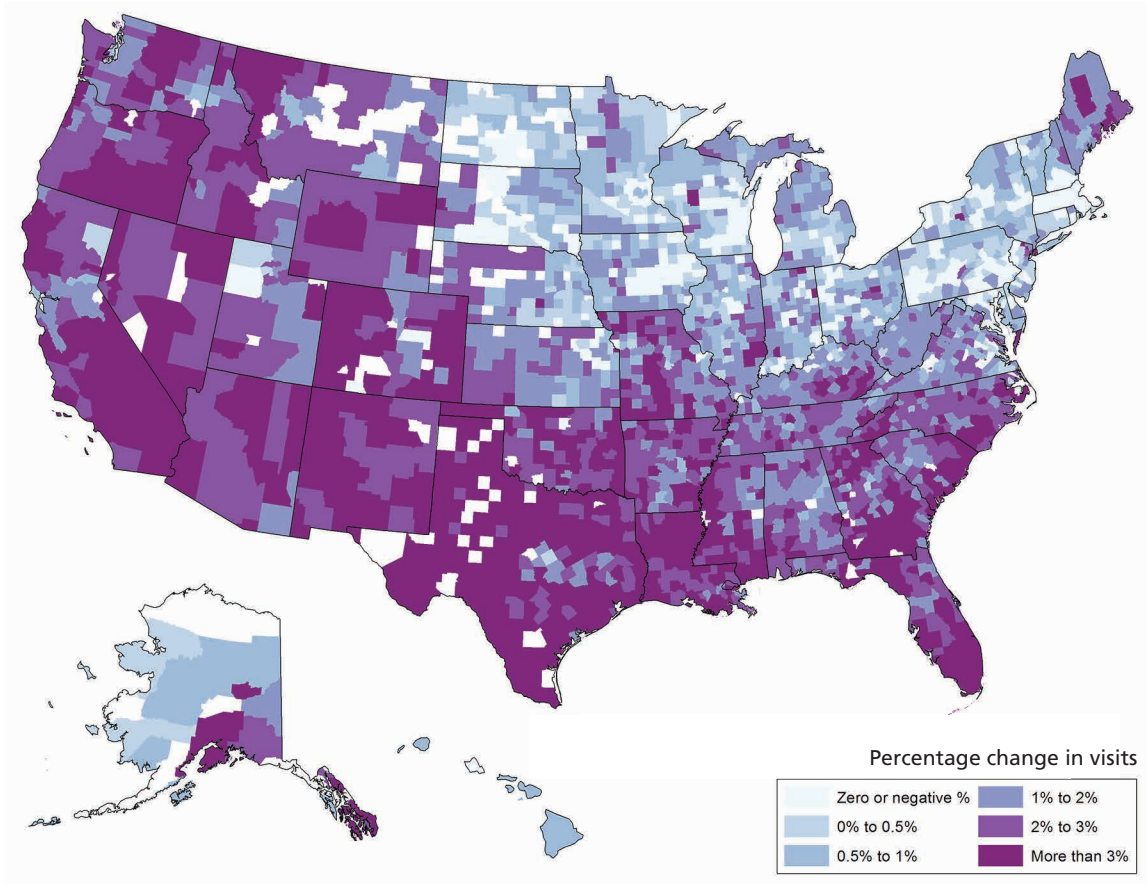
We also tested the impact of expanding Medicaid eligibility in all states and of increasing Medicaid primary care payment rates to Medicare levels, as was done by Congress in the 2013 Medicaid primary care payment "bump." Figures 5.1 and 5.2 compare the change in esti-

Figure 5.1
Change in Estimated Visits per Physician, Baseline Assumptions



RAND *RR1627-5.1*

Figure 5.2
Change in Estimated Visits per Physician, National Medicaid Expansion Scenario



RAND *RR1627-5.2*

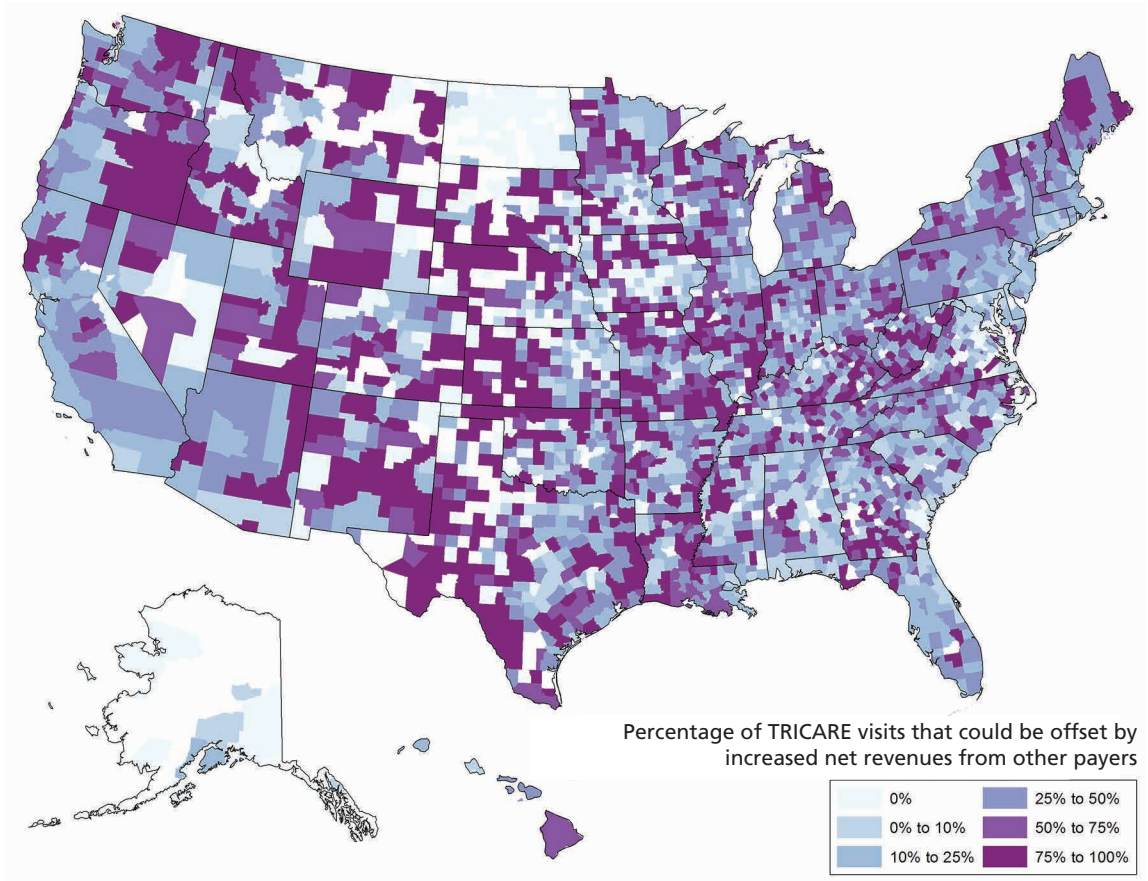
mated visits per physician under baseline assumptions and under the assumption that all states expand Medicaid. The change in visits was much more pronounced in the expansion scenario for states (especially southern states) that opted not to expand Medicaid under ACA. Medicaid expansion in all states has relatively little effect because we assume that Medicaid payment rates are below TRICARE payment rates (Table 5.3). In fact, fewer self-pay uninsured patients may actually mitigate purchased care access concerns for TRICARE to a small degree.

However, the impact of the Medicaid primary care payment bump scenario is significant (Table 5.3 and Figure 5.3). We estimated that the proportion of TRICARE primary care visits at risk under the net revenue criterion would more than double, from 7.2 percent under base assumptions to 17.0 percent under the payment bump assumption. This is due to a major influx of new Medicaid patients that under the payment bump bring in revenue equivalent to Medicare (and, by extension, TRICARE) patients. We cannot predict whether physicians would anticipate that the Medicaid payment bump would be permanent. If it were a one-year policy (as in 2013), it is possible that physicians would not change their behavior, at least in the short term. Many of these details hinge on statutory language, should Congress revisit the issue of increasing Medicaid primary care payment rates.

Table 5.3
Percentage of TRICARE Physicians and TRICARE Visits at Risk, Medicaid Policy Scenarios

	Percentage of TRICARE Physicians at Risk	Percentage of TRICARE Visits at Risk
All physicians		
Baseline assumptions	18.8%	7.4%
Medicaid expansion	17.1%	6.7%
Primary care payment bump	23.8%	11.6%
Primary care physicians		
Baseline assumptions	18.8%	7.2%
Medicaid expansion	16.2%	5.7%
Primary care payment bump	30.2%	17.0%

Figure 5.3
Proportion of TRICARE Visits by Primary Care Physicians Able to Replace Current TRICARE Net Revenue with Projected Net Revenue from the Newly Insured, by County, Medicaid Payment Bump Scenario



RAND *RR1627-5.3*

Changes in Demand

Because the uninsured have the lowest visit rate, we would expect that if the newly insured are more likely to fully adopt the relative visit rate of other patients in the new coverage group, the higher is the increase in projected visits for that group and thus the higher is the percentage of TRICARE physicians who are able to use that increased demand to offset lost revenues if they were to drop TRICARE patients. In our main results, we assumed that the visit rate for new Medicaid enrollees was halfway between the visit rate for the uninsured and for previously enrolled Medicaid enrollees. Similarly, we assumed that individuals gaining private coverage through insurance exchanges had visit rates halfway between the visit rates for the uninsured and for individuals who previously had commercial coverage.

We tested the effect of varying these assumptions. Specifically, we estimated impacts, assuming that the visit rates for newly insured Medicaid enrollees and those with the exchange were 10, 25, 75, and 90 percent of the difference between their lower prior visit rates (as individuals without insurance) and their higher rates (with either Medicaid or commercial coverage). The 10-percent assumption suggests that the newly insured demand only slightly more visits than they did while they were uninsured, while the 90-percent assumption suggests that the newly insured will quickly increase their visit volume. Table 5.4 reports the estimated percentage of TRICARE physicians and visits at risk for the five scenarios described above. Notice that even in the extreme scenario in which the visit rate for the newly insured is very close to the visit rate for previously insured individuals (i.e., the 90-percent assumption), the percentage of TRICARE visits at risk remains relatively low (increasing from 7.4 percent to 12.0 percent).

Table 5.4
Percentage of TRICARE Physicians and TRICARE Visits at Risk Under Changing Demand Assumptions

Increase in Visit Volume for the Newly Insured (expressed as the proportion of the difference between visit volume for the uninsured and individuals' new coverage category)	Percentage of TRICARE Physicians at Risk	Percentage of TRICARE Visits at Risk
10 percent (visit rate close to the uninsured)	12.1%	3.9%
25 percent	14.5%	5.1%
50 percent	18.8%	7.4%
75 percent	23.6%	10.2%
90 percent (visit rate close to the previously insured)	26.3%	12.0%

CHAPTER SIX

Discussion

Conclusions

Our estimated net change in demand for health care at the county level is small in aggregate. But both impacts have high variance, with some counties experiencing increases in aggregate demand for health care services of more than 3 percent and some physicians facing increases in demand and net revenue of more than 10 percent. The distribution of new demand across counties is driven primarily by three factors: (1) the pre-ACA uninsurance rate, (2) the generosity of state Medicaid program eligibility thresholds, and (3) whether the county's state elected to extend Medicaid coverage as part of ACA. While Southern states have high pre-ACA uninsurance rates, many of these states opted not to expand Medicaid. Still, even without Medicaid expansion, counties in such states as Texas have some of the highest county-level increases in demand for care.

At this point, the major unknown is how providers will respond to this new demand. As we suggested in Chapter One, one rational response for physicians with capacity or effort constraints is to shift the composition of their patient panel to maximize net revenue. Patients covered by payers with relatively small shares of physician patient panels or with relatively low payment rates compared with commercial coverage are potentially more susceptible to being dropped by physicians who choose to transition to newly insured patients contributing more to net revenue.

Overall, we found that changes in visit volume caused by the ACA coverage expansion were larger for Medicaid enrollees, individuals covered by private insurance, and individuals without insurance, which are the main groups targeted by the ACA coverage expansion. However, we estimated that 19 percent of TRICARE physicians would find that they could replace all of their current TRICARE net revenue with net revenue from the newly insured after the coverage expansion and were, therefore, at risk. These physicians account for about 7 percent of TRICARE visits. We found that primary care physicians and non-network physicians were more likely to be at risk than specialist physicians.

Our analysis was sensitive to assumptions on the relative payment rates between TRICARE, marketplace plans, and Medicaid. We found surprisingly little research on the precise payment differentials between TRICARE and other payers. As a result, we calculated relativities between TRICARE, Medicare, and commercial payers for this study at the region and specialty levels. Under a scenario in which Congress increases Medicaid payment rates for certain primary care providers and services to Medicare levels (as was done in 2013), the proportion of primary care providers able to replace all of their current TRICARE net revenue with

net revenue from the newly insured would increase from 19 percent (under our base assumptions) to 30 percent.

Limitations

Our results are subject to several important caveats and limitations. First, we used estimates of coverage changes over time from the RAND COMPARE model. Our estimates of 2016 coverage (and later demand for care) may differ from actual demand in 2016 to the extent that the actual uptake of Medicaid and exchange coverage or the implementation of exchanges and other ACA provisions differs from the assumptions that feed into the COMPARE model. Second, we used data from a range of sources, including TRICARE, SK&A, Medicare, and MEPS, to describe the volume and payer mix of care delivered by physicians. These datasets measure volume in different ways, and our adjustments to standardize data may have introduced error. Third, we applied payment relativities at the region and specialty levels, when, in reality, payers can negotiate rates with specific providers. As a result, we may have over- or underestimated net revenue for specific providers.

Relatedly, we did not model or address heterogeneity across providers in terms of skill or quality of care, despite at least anecdotal evidence that important differences in terms of training, experience, and other proxies for quality drive the composition of physician patient panels. Given heterogeneity of this type, we expect the coverage expansion to have different impacts on the top physicians in each specialty—who are likely to see only privately insured patients with whom they can negotiate higher rates compared with fee schedule amounts in Medicare (and by extension TRICARE) and Medicaid—and on physicians who are more likely to treat Medicaid and Medicare patients already. While we accounted for these differences in part by considering whether physicians participated in Medicaid and Medicare when estimating the impacts of the coverage expansion, we did not explicitly model heterogeneity in physician quality and type. Still, the majority of physicians currently participate in Medicare, and, as a result, in many geographic and specialty markets—with the exception of perhaps very narrow subspecialists at the top of their fields—we expect that most physicians would at least contemplate participating in TRICARE.

Furthermore, we did not consider changes over time associated with ACA or otherwise in terms of the spatial supply of physician services or differentiation of physician services (by quality, mix, or any other characteristic). We held supply constant for our analysis because there is limited evidence on how supply will change along these dimensions as a result of health reform. As a result, we may have over- or underestimated the number of providers treating TRICARE patients in some regions.

Our analyses required a set of assumptions on payment rates, the costs involved in interacting with health care payers, the form and inputs into physician decisionmaking, and a range of other key components of the study, as documented throughout the report. Changes in these assumptions could affect our main results.

Finally, while not necessarily a limitation, it is important to note that we did not estimate specific changes in supply or TRICARE participation in this study. Rather, we introduced a framework and measures to flag specific provider groups and regions for closer monitoring by DoD. Despite the simplified assumptions in our model, we know that physicians consider a range of factors—including noneconomic factors—when choosing how to market their prac-

tices, which managed care arrangements to entertain, and how to fill their patient panels. Some physicians may choose to treat TRICARE patients for reasons completely unrelated to payment rates. While we did not model this effect, it can be viewed as a nonmonetary premium that stacks on top of payment rates. Future research—including new supply-side microsimulation models—could address or mitigate some of these limitations and model physician decisions more directly than the current study. In general, payers have a range of strategies at their disposal—including increasing payment rates and removing time costs associated with utilization management, claims processing, payment, and contracting—to mitigate potential access problems caused by ACA-driven increase in demand. More integrated health care systems could also consider the more direct solution of hiring additional providers.

Policy Options to Mitigate Loss of Access

DoD in particular has several short-term and long-term policy tools at its disposal to mitigate potential purchased care access problems. In the short term, DoD can work with the TRICARE managed care support contractors to monitor changes in networks and access. A monitoring effort could adapt the framework that we introduce in this study, or it could build on ongoing managed care support contractor efforts to monitor network adequacy. The most robust monitoring approach would review network composition and encounter data-based access measures simultaneously. At a minimum, changes in network composition and access for specific regions, provider categories, and health care service categories can be inferred from historical TRICARE encounter data already maintained by DoD. In relation to the current study, historical 2012 through 2013 data could serve as a baseline for comparison to changes in TRICARE participation and TRICARE provider volume in 2014 onward after the implementation of ACA.

One short-term option to mitigate potential TRICARE purchased care access issues is to increase TRICARE rates. In our analysis, higher TRICARE rates would increase physician net revenues from TRICARE and would reduce the proportion of TRICARE physicians and visits that are at risk. We found that TRICARE payment rates—including negotiated prices between managed care support contractors and physician practices—were slightly above Medicare rates and substantially below commercial rates on average.

In an extreme case, TRICARE can ensure access to purchased care by paying provider-specific rates that are set exactly to make providers indifferent between treating TRICARE patients or other patients demanding care after considering both net revenue and fixed costs. It is unlikely that either TRICARE or the managed care support contractors would want to adopt this approach because of practical implementation challenges. As an alternative, setting rates at the specialty and geographic levels that are roughly equivalent to exchange payment rates, accounting for differences in costs associated with scale, may be a reasonable second-best approach that will preserve purchased care access for most TRICARE enrollees.

In the longer term, DoD could move away from traditional managed care arrangements and procedure-based fee-for-service payment toward value-based purchasing—tying payments to the value from health care services—in future TRICARE contracting. Building incentives beyond volume-based payment into arrangements with providers—such as pay-for-performance, in which providers receive extra payments for meeting specific quality metrics, or shared savings, in which payers and providers share reductions in the costs associated with

managing patients or populations—could be an important driver of provider decisionmaking in our study framework.

Commercial insurers and large public payers, such as Medicare, are continuing to move toward alternative payment approaches with integrated incentives to reduce health care spending and improve the value of care. While there are some specific challenges in applying payment innovations in the TRICARE setting, including interactions between the purchased care and direct care systems, there are opportunities to at least pilot some of the practices from other public and private payers in the MHS context. A full discussion of these opportunities is outside the scope of this report. A recent RAND Perspective (Hosek et al., 2016) discusses value-based purchasing in the TRICARE context in detail and proposes related policy alternatives for DoD.

APPENDIX

Technical Details of Data and Methods

Data

Our approach required linking data from six sources: (1) county-level data on health insurance coverage by type prior to ACA; (2) state-level ACA forecast data to estimate how health insurance coverage would change because of the ACA coverage expansion; (3) physician-level data on the supply of physician services overall; (4) physician-level data on the supply of health care services to patients with particular sources of coverage, including TRICARE; (5) data on relative visit rates for patients with different sources of coverage; and (6) data on relative payment rates across payers. This section discusses the six types of data in turn, as well as the source(s) that we identified for each data type.

Pre-ACA health insurance coverage data: We used data describing the population living in each locality, including such demographics as age, gender, and income and, importantly, the current distribution of individuals across different sources of health insurance. Our primary source for this was the American Community Survey (ACS). Some data came from the 2012 ACS five-year county-level aggregated summary tables. In other cases, we used individual-level data from the 2012 ACS Public Use Microdata Sample.

We used data from the ACS to describe the proportion of county populations covered by different sources of health insurance in 2012. ACS asks respondents whether they were covered by the following categories of health insurance in each calendar year: Medicaid, Medicare, direct purchase (i.e., individual market), employer-sponsored insurance, and TRICARE. Individuals can select multiple sources of coverage if applicable—for example, for Medicare and Medicaid dual-eligibles. We developed a set of decision rules to assign combinations of coverage responses to a set of mutually exclusive categories: (1) commercial only, (2) Medicaid or combinations of public coverage including Medicaid, (3) all other public coverage (including Medicare), and (4) uninsured (i.e., no health insurance coverage).

RAND COMPARE state-level coverage predictions: COMPARE is an agent-based microsimulation model that estimates changes in coverage and other outcomes associated with health policy changes, including ACA. The model is based on nationally representative survey data from the Survey of Income and Program Participation (SIPP), the Medical Expenditure Panel Survey (MEPS), and the Kaiser Family Foundation/Health Research and Economic Trust (KFF/HRET) annual survey of employer benefits. Individuals and firms in the model make decisions by comparing the cost and benefits of available health insurance options. In addition to the national-level model, we have 51 state-specific models (including Washington, D.C.) that are modified to account for state-specific demographics and state policies (such as

Medicaid eligibility). Additional details on the methodology underlying COMPARE can be found in Cordova et al. (2013, pp. 78–117).

Data on the supply of physician services: SK&A maintains a near-census of office-based physicians (who are each assigned an unchanging unique ID) that it sells to firms that market products to physicians, such as electronic medical records. Data are collected at the level of each physician's office, usually by an office administrator on the phone with an SK&A researcher. The administrator answers questions on behalf of each physician who works in the office. Among the data collected are the zip code of the practice location, each physician's unique NPI, whether they accept new Medicare patients, whether they accept new Medicaid patients, the size of the physician group, total visit volume, and the physician's specialty. Physician offices are resurveyed at a maximum interval of six months. Data were obtained for snapshots of the physician workforce once per year for the years 2008 to 2014. For this project, we used data obtained in 2013. We assessed the data's accuracy (e.g., number of physicians, specialty distribution, Medicaid acceptance) against the American Medical Association Masterfile, the ACS, the National Ambulatory Medical Care Survey, and the Health Tracking Physician Survey. The data showed strikingly similar patterns (Gresenz, Auerbach, and Duarte, 2013).

Payer-specific utilization data: We combined the SK&A data with data from the Defense Health Agency (DHA) on physicians with TRICARE claims, including the location and TRICARE patient volume for these physicians, from the TRICARE encounter data. We used longitudinal physician-level data on office location, specialty code, TRICARE patient volume, and TRICARE service volume from the noninstitutional TRICARE encounter data system. The TRICARE encounter data and SK&A data sources were merged on the NPI. The combined datasets describe the universe of civilian physicians and the subset of civilian physicians who provide care to TRICARE patients. We also combined NPI-level data from the Centers for Medicare & Medicaid Services (CMS; Office of Enterprise Data and Analytics, 2015) reporting unique patients per provider per year with the SK&A data.

Relative visit data: For baseline volume, we used estimates of per capita annual visit rates from the Centers for Disease Control and Prevention on their National Ambulatory Medical Care Survey (NAMCS) and from published studies using the MEPS (Centers for Disease Control and Prevention, Ambulatory and Hospital Care Statistics Branch, 2010).

Payment relativity data: Our approach to calculate payment relativities required merging datasets from several sources: (1) CMS, TRICARE, and commercial (group health) insurance claims data aggregated at the NPI level; (2) the Medicare Physician Fee Schedule with RVUs for specific Healthcare Common Procedure Coding System (HCPCS) service codes; and (3) a geographic crosswalk to assign zip codes to Core-Based Statistical Areas (CBSAs), among which 388 are defined as Metropolitan Statistical Areas (MSAs).

Medicare claims: We used Medicare's publicly available 2013 NPI-level data (Office of Enterprise Data and Analytics, 2015), which report physicians' Medicare-allowed amounts and actual payments for calendar year 2013 aggregated at the HCPCS and place of service level. The data include physician specialty and zip code. To protect beneficiary privacy, the public use file includes only rows in which the number of procedures billed to Medicare is at least ten. As a result, these files should not be interpreted as physicians' total Medicare-allowed amounts or payments. The 2013 Medicare file includes 909,605 unique NPIs. We flagged physicians in seven study specialties: cardiology, psychiatry, pediatrics, primary care (including general practice, family practice, and internal medicine), neurology, orthopedic surgery, and

obstetrics and gynecology. All other physician specialties were assigned to an "other" group. To account for possible outliers, we removed payments per RVU that were either smaller than the bottom 1st percentile or larger than the top 99th percentile of payments per RVU within specialty and place of service across all regions. The final Medicare data included 281,087 physicians across 388 MSAs.

TRICARE encounter data: We used 2013 TRICARE encounter data with aggregated TRICARE-allowed amounts (i.e., the amount that TRICARE allows providers to bill, including patient cost-sharing) and RVUs aggregated at the NPI level. Like the Medicare data, the TRICARE data include practice zip code. Information on place of service was not available in our study data file. To obtain information on the primary specialty of each NPI, we merged the TRICARE data with Medicare data on NPI. Therefore, we limited our price relativity analysis to physicians with Medicare and TRICARE data. We flagged the same set of seven study specialties. We then accounted for extreme values or outliers, first by dropping observations for which payment was smaller than the bottom 1st percentile within specialties and MSA and second by excluding observations with fewer than five physicians within MSA, place of service, and specialty. This left us with 187,878 physicians across 388 MSAs.

Commercial insurance: We used line-level claims from a 2013 extract from Truven's Marketscan database to calculate payments and volume from commercial group health payers. The Marketscan data include medical claims submitted by large group health plans. While the contributing plans are a convenience sample, the number of plans and the overall volume of claims and covered lives in this data mitigate selection concerns. The line-level claims include specific HCPCS procedure codes, allowed amounts, place of service codes, MSA codes, and provider specialty. As in other datasets, we separately identified the seven study specialties (cardiology, psychiatry, pediatrics, primary care, neurology, orthopedic surgery, and obstetrics and gynecology), and categorized other physicians in an "other" category.

Medicare Physician Fee Schedule: While the TRICARE encounter data already included total RVUs, the other two claims data sources (Medicare and Marketscan) reported volume per HCPCS but not RVUs. We converted volume in the Medicare and Marketscan data to RVUs using the appropriate facility or nonfacility total RVUs listed in the 2013 Medicare Physician Fee Schedule.

Geographic crosswalk: We merged each claims data source with the zip code–to-CBSAs crosswalk. This dataset contains an indicator variable for whether the CBSA is a MSA. There are 388 MSAs currently in the United States.

Behavioral Modeling Approach

Our approach estimated the increase in demand (measured in visits) for care post-ACA by relying on literature estimates and assumed that some physicians might respond to changes in coverage and the mix of payers among patients by no longer contracting with payers that represented a small share of their pool of patients. In particular, we analyzed the case of TRICARE patients and characterized situations in which TRICARE patients were "at risk" of being squeezed out of a physician's panel.

The analysis was built in three steps:

1. Estimate the physician's current volume of care supplied to patients of different payers.

2. Estimate the change in demand caused by ACA, both at the physician level and at the geographic level.
3. Identify potential situations in which TRICARE patients were at risk of being dropped from the physician's panel.

We describe below how we proceeded in each of these steps.

Step 1. Construct Each Physician's Patient Volume and Payer Mix

Our first main task was to define the amount of care supplied to patients (by payer) for each physician in our data. The general approach built on the data available in the SK&A dataset to the greatest extent possible and approximated the remainder of the physician's panel based on assumptions, as described below. Volume is reported differently in SK&A and other data used for these analyses—including the TRICARE encounter data and Medicare volume data. Specifically, SK&A reports an estimate of the number of discrete patient encounters ("visits") per day at the practice level. As described below, we adjusted the SK&A visit volume to approximate provider-level rather than practice-level visits. The TRICARE data report counts of claims but not necessarily discrete visits, while the Medicare data report counts of unique patient-days rather than visits. We used TRICARE claim counts as a proxy for visits even though it is possible for (1) visits to be split over multiple claims and (2) a single claim to cover multiple visits. In aggregate, claims may be a close proxy for visits. Because of Medicare billing rules prohibiting multiple bills on the same day of service, we believe that the counts of unique patient-days available in the Medicare data are a close approximation of counts of visits. The third dataset in this section—MEPS—uses the terms *visits* and *events*, which we interpreted to match closely to *visit* in the SK&A sense. While our estimates of changes in visit volume and at-risk physicians and visits would change if there are differences in how volume is measured across these data sources, it is difficult to predict the direction of the bias because of the complex relationship between counts of health care services, claims, and visits.

Total Patient Volume

The SK&A data include an estimate of the total visit volume per day at each practice. To estimate the volume for individual physicians, we first imputed the physician share of the total practice visit volume according to Equation A.1:

$$w_{ij} = \frac{\frac{1}{size_j} \times \frac{1}{visits_i} \times A_i}{\sum\left(\frac{1}{size_j} \times \frac{1}{visits_i} \times A_i\right)},$$

where i indexes for physician and j indexes for practice. The term *size* is the total number of physicians in the practice, after removing specialties that were not compatible with measured visits (including pathology, dermatopathology, radiology, anesthesiology, and emergency medicine). The term *visits* measures the total number of visits across offices of the physician. The term A is an adjustment factor that measures differences in relative visit volume per specialty (from NAMCS). The adjustment factor is necessary for multispecialty practices in which indi-

vidual physicians contribute to practice-level volume at different rates. The values of the adjustment factors are shown in Table A.1.

Imputing TRICARE Visits

We identified TRICARE visits per provider using the 2012 TRICARE encounter data. We assumed that each claim was a separate visit. We calculated the total number of claims by physician and divided it by 210 (the number of work days in a year) to get an estimate of average daily TRICARE visits per physician. In some cases (approximately 25 percent), the estimated average number of daily TRICARE visits was larger than the estimated average daily total visits obtained in the previous step. To address this issue, we divided the physicians into 20 equally sized groups according to their average visits per day. Then we calculated the ratio of TRICARE visits to total visits. In situations in which the ratio was higher than 1, we replaced it with the average ratio among doctors in the same group. Finally, we used the resulting revised ratio to calculate the average daily TRICARE visit in 2013 by physicians, using the formula shown in Equation A.2:

$$TRICARE_{2013} = visits_{2013} \times \left[\frac{TRICAREvisits_{2012}}{visits_{2012}} \right]_{revised}$$

Imputing Visits for Other Payer Categories

To impute the number of visits from private coverage (separately for employer-based and individually purchased coverage), Medicaid, Medicare, the uninsured, and a miscellaneous "other" category, we used information from (1) the fraction of the population covered in each payer category at the national level, (2) the fraction of the population covered in each payer category at the local level, and (3) the fraction of visits in each payer category at the national level. The fraction of local area population covered in each payer category was derived from the ACS county-level aggregates for 2008–2012. The fraction of population covered in each category and the fraction of visits in each category at the national level were obtained from the 2012 MEPS, as shown in Table A.2. Coverage categories were defined for individuals with 12 months of continuous coverage in the given category.

For each physician, we calculated the share of visits each payer type p, or $S_{p,2013}$, based on its relative visit rate from Table A.2 (R_p) and its coverage share at the county level ($C_{p,2013}$). In

Table A.1
Relative Average Patient Volume by Specialty

Specialty	Factor
Primary care (base category)	1.000
Psychiatry	0.543
Obstetrics and gynecology	0.840
Cardiovascular diseases	0.700
Surgical specialties	0.891
Medical specialties	0.699

Table A.2
National Share of Visits and Population Coverage by Payer Category

Insurance Coverage: Continuous for 12 Months	Fraction of Visits (%)	Fraction of Population Covered (%)	Relative Visit Rate (R) $R = \frac{\%visits}{\%coverage}$
Uninsured	4.3	12.5	0.34
Medicaid	11.5	13.9	0.82
Medicare	12.3	6.3	1.96
Private (both employer-based and individually purchased coverage)	45.3	53.0	0.86
TRICARE	0.9	1.2	0.78
Other*	25.7	13.1	1.96
Total	100	100	

SOURCE: Authors' calculations using MEPS data (MEPS, 2016).

NOTE: Medicare includes Medicare only and TRICARE+Medicare.

other words, we calculated the physician share of visits by each payer given by Equation A.3. For both employer-based and individually based private coverage, we used the same relative visit rate, R_p, from Table A.2.

$$\underbrace{Shareofvisits_p}_{S_{p,2013}} = \underbrace{(Coverageshareatlocallevel)_p}_{C_{p,2013}} \times \underbrace{\frac{(Visitshareatnationallevel)_p}{(Coverageshareatnationallevel)_p}}_{R_p}$$

We further adjusted Equation A.3 to take into account the fact that not all doctors accept Medicaid or Medicare patients. Physician offices in the SK&A data report outright whether they accept Medicaid patients. We also used data from the publicly available Medicare Provider Utilization and Payment Data (Office of Enterprise Data and Analytics, 2015) to describe Medicare utilization by provider. We assumed that physicians accepted Medicare patients if they appeared in this database. For physicians who did not accept Medicaid or Medicare patients, we assumed zero Medicaid or Medicare volume, respectively. To preserve the predicted mix of visits at the county level, we needed to increase the predicted Medicaid share of visits for doctors who accepted Medicaid and increase the predicted Medicare share of visits for doctors who accepted Medicare. With the same reasoning, we needed to increase the share of visits for the other payer types for doctors who did not accept Medicaid or Medicare.

More specifically, for doctors accepting Medicaid, we increased the Medicaid share of their visits by a factor of

$$\frac{1}{F_{Medicaid}},$$

where $F_{Medicaid}$ is the fraction of physicians (weighted by total visits) that accepts Medicaid patients in their county. We performed a similar adjustment for Medicare visits. Next, we needed to adjust downward the shares of visits from the other payer types for doctors who accept Medicare or Medicaid visits. We did this by multiplying the shares from the other payers by the factor

$$M = \left(1 - \left(\frac{S_{Medicaid}}{F_{Medicaid}} + \frac{S_{Medicare}}{F_{Medicare}}\right)\right) / \left(1 - \left(S_{Medicaid} + S_{Medicare}\right)\right),$$

which is less than 1. Finally, we increased shares for payers other than Medicare and Medicaid for non-Medicaid and non-Medicare physicians by the factor

$$\frac{1 - \overline{F}M}{1 - \overline{F}},$$

which is greater than 1 and where $\overline{F}$ is the fraction of physicians (weighted by total visits) that accepts either Medicaid or Medicare patients in a county.

We then used the adjusted visit shares for each payer, $S_{p,2013}$, to estimate the average number of visits per payer using the total average visits after subtracting the imputed TRICARE visits and Medicare visits (both of which we estimated from other sources as described above), as shown in Equation A.4:

$$PayerVisits_{p,2013} = \frac{S_{p,2013}}{\sum S_{p,2013}}\left(visits_{2013} - TRICARE_{2013} - Medicare_{2013}\right)$$

We next share some statistics describing the payer mix distribution resulting from the above process. First, in Figure A.1 we compare our resulting visits from the model to visit distributions in 2010 from the NAMCS (Centers for Disease Control and Prevention, Ambulatory and Hospital Care Statistics Branch, 2010). Our results would likely not align perfectly, in part because NAMCS visits are assigned to a coverage category based on the type of coverage that the physician *expects*, which surely differs from actual patient coverage, though it is difficult to assess the direction of the potential bias.

Table A.3 presents more disaggregated information on the estimated shares of each payer type and their distribution. On average, 42 percent of visits delivered by physician practices are to patients with employer-sponsored private insurance, 23 percent are to Medicare patients, and 12 percent are to Medicaid patients. Only 5 percent of visits on average are to the currently uninsured—this is in part because there are relatively few uninsured individuals, even prior to ACA, and in part because uninsured individuals have relatively low use rates compared to the insured.

Step 2. Estimate the Change in Demand Due to ACA

We next turn to an analysis of the change in the number of visits demanded in response to coverage changes under ACA. We define *demand* as the number of visits that individuals seek as a function of their health insurance coverage. For example, an uninsured individual who obtains

Figure A.1
Percentage of Visits by Payer in NAMCS and Imputation Model

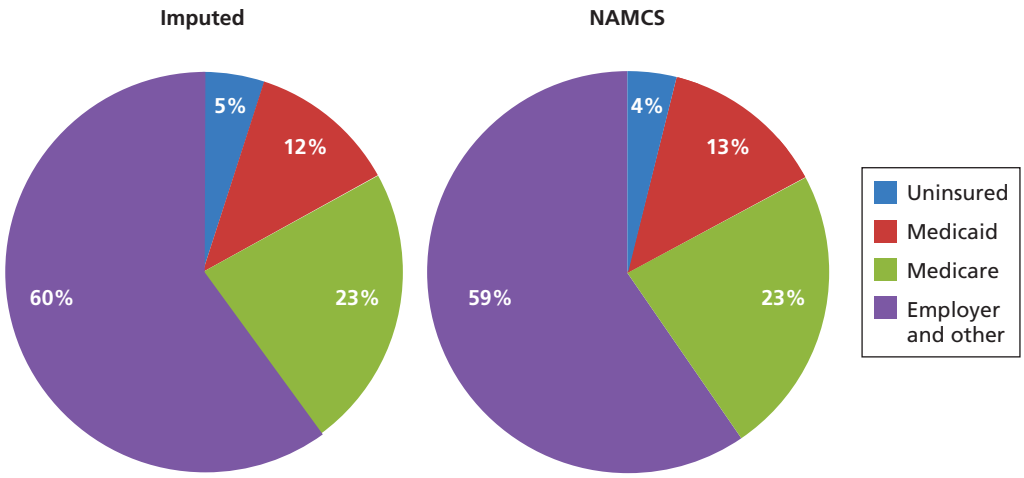


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Table A.3
Distribution of Visits by Coverage Type, Physician-Office Level

	Mean	p10[a]	p25[a]	p50[a]	p75[a]	p90[a]
Medicare	23%	0%	19%	27%	31%	35%
Uninsured	5%	2%	3%	4%	6%	8%
Medicaid	12%	0%	0%	13%	18%	25%
Tricare	3%	0%	0%	1%	3%	9%
Employer-sponsored insurance	42%	27%	33%	41%	49%	59%
Other private insurance	5%	3%	3%	4%	5%	7%
Other	11%	6%	8%	10%	12%	15%

[a] p10, p25, p50, p75, and p90 refer to the 10th, 25th, 50th, 75th, and 90th percentiles of physicians, respectively.

private coverage would generally face reduced out-of-pocket payment for a physician visit and would therefore be inclined to seek more visits. Thus, this estimation involves three steps: (1) estimating the changes in health insurance coverage, (2) estimating (from the literature) the expected change in visits upon changing coverage, and (3) distributing the expected change in visits to each physician. We describe the methodology used in each of these steps below.

Estimating County-Level Change in Health Insurance Coverage

The RAND COMPARE model generates state-level predictions of 2016 coverage after the ACA coverage expansion. COMPARE is not designed to produce coverage estimates at the county level, which was required for this effort. To produce coverage estimates at the county level, we employed a two-stage process. First, we produced state-level estimates for coverage changes in 2016 under ACA. In a second step, we ran a multivariate regression of those state estimates on aspects of the population in each county in the United States, including mean

per capita income, a maximum educational attainment index, employment rates, Medicaid income eligibility thresholds, and 2012 health insurance rates. In a final step, we estimated the coverage change for each county, given its own demographic characteristics. For example, Medicaid eligibility and eligibility for exchange credits are highly dependent on income. Thus, in low-income counties, and particularly those in states implementing the Medicaid expansion, more uninsured people (all else equal) would be expected to obtain coverage.

Estimating the Expected Change in Visits Upon Changing Coverage

In this step, we rely on research that has estimated the change in demand or utilization of care resulting from a change in coverage. Generally, that literature has found that individuals changing from one coverage state to another do not necessarily adopt the visit rate (demand) of others already covered under the new coverage category. For example, uninsured individuals make less than half as many physician visits as individuals covered under Medicaid or employer coverage. If they adopted the visit rate of previously covered individuals upon gaining coverage, their visit rates would be expected to increase by more than 100 percent (a doubling). Yet research has generally found utilization increases in the range of 30 to 50 percent (Congressional Budget Office, 2008; Finkelstein et al., 2012; Freeman et al., 2008; Manning et al., 1987).

From these studies, we derived the following assumption: Upon moving from coverage state A to state B, individuals adopt the relative visit rate (demand for physician visits) midway between those of individuals currently covered under each coverage state. We used that assumption for individuals moving from uninsured to Medicaid and from uninsured to privately insured. Thus, for example, when moving from uninsured to Medicaid, the relative visit rate increases from 0.34 to 0.58 (the midpoint between 0.34 and 0.82; see Table A.2), an increase of 70.5 percent. That increase is still more than double that of the most rigorous study of the impact of moving from uninsured to Medicaid coverage (Baicker and Finkelstein, 2011). Nevertheless, it allows for the possibility that in the long run, as people become more accustomed to having insurance coverage, they adopt more of the usage patterns of individuals who have long been covered by insurance. Other coverage transitions (such as from private coverage to uninsured) are relatively minor in the COMPARE data and at the county level (the level at which the coverage transitions are implemented). The two transitions identified above (from uninsured to Medicaid and from uninsured to privately insured) account for the majority of changes. We assumed that the relative share of visits for employer-sponsored insurance, Medicare, TRICARE, and other were constant between 2012 and 2016.

Following the above discussion, in counties where the Medicaid coverage rate had gone up, we calculated the new Medicaid shares of patient visits as shown in Equation A.5:

$$S_{Medicaid,2016} = C_{Medicaid,2013} \times R_{Medicaid,2013} + (C_{Medicaid,2016} - C_{Medicaid,2013}) \times \left(\frac{R_{Medicaid} + R_{Uninsured}}{2} \right)$$

Similarly, in counties where the non–employer-based private insurance coverage rate had increased, we calculated the new share of visits from this type of payer as shown in Equation A.6:

$$S_{Private,2016} = C_{Private,2013} \times R_{Private,2013} + (C_{Private,2016} - C_{Private,2013}) \times \left(\frac{R_{Private} + R_{Uninsured}}{2} \right)$$

In counties where the coverage for Medicaid or private insurance did not increase, and for the other types of payers (employer-based insurance, Medicare, TRICARE, and other), we calculated their share of visits using Equation A.7:

$$\underbrace{Shareofvisits_p}_{S_{p,2016}} = \underbrace{(Coverageshareatlocallevel)_p}_{C_{p,2016}} \times \frac{(Visitshareatnationallevel)_p}{\underbrace{(Coverageshareatnationallevel)_p}_{R_{p,2016}}}$$

As before, we adjusted the shares to take into account that some doctors do not accept Medicaid or Medicare patients and to preserve the model-predicted mix of payers at the county level. After adjusting the shares, we used the change in the share of visits to forecast volume in 2016. In other words, for each payer type *p*, we estimated its visits volume for 2016 for each doctor as shown in Equation A.8:

$$PayerVisits_{p,2016} = PayerVisits_{p,2013} \times \left(\frac{S_{p,2016}}{S_{p,2013}} \right)$$

Distribution of the Expected Increase in Demand Among Physicians

Finally, we had to make an assumption about whether, upon changing coverage, individuals would continue to demand care from the same physician(s) that they had seen previously. Some previously uninsured, upon gaining private coverage, would find that a larger set of physicians were now available to them to make appointments with (e.g., moving from a community health center to a private-plan network). Conversely, some private physicians might accept a small number of individuals, but their offices might not be set up to accommodate Medicaid coverage, and thus their patients might have to seek care elsewhere. The number of physicians who would newly accept Medicaid patients under a Medicaid expansion is likely small (Garthwaite, 2012; Sabik and Gandhi, 2013; Tu et al., 2010; White, 2012). As noted by authors at the Center for Studying Health Systems Change analyzing the Boston market after Massachusetts passed health reform, "Approximately two out of three newly insured people are covered by MassHealth or Commonwealth Care, and most of them have continued to use the same safety net providers they had used when uninsured, though perhaps at a higher utilization rate" (Tu et al., 2010).

To account for the fact that some newly insured patients would change physicians, we made the following two assumptions:

- We assumed that 25 percent of the increase in Medicaid visits was distributed among Medicaid-accepting physicians in the county, in proportion to those physicians' initial number of Medicaid visits. The remaining 75 percent was retained by individual physicians based on their pre-ACA patient population of uninsured individuals predicted to gain Medicaid coverage.
- We assumed that 25 percent of the increase in visits by those with individual private coverage (i.e., not including employer-sponsored insurance) was distributed among all physicians in the county, in proportion to those physicians' initial market share in the employer-sponsored insurance market.

Note that we did not model any physicians as accepting Medicaid who did not do so before.

Step 3. Identify At-Risk TRICARE Providers and Visits

We posited that TRICARE patients are at risk of being dropped in situations where the increase in demand from other payers allows physicians to have at least the same net revenue—i.e., the sum of payments minus variable costs for services provided but excluding fixed costs—as before (in 2013), even if they dropped their TRICARE patients. However, we limited this situation to physicians who were already in the upper half of the distribution of visits in their practice state to focus on physicians who were more likely already operating near or at capacity. Conversely, we assumed that physicians who were in the lower half of the distribution would be willing and able to accommodate an increase in demand for their services and, thus, would not consider dropping TRICARE patients.

Translating Volume to Net Revenue

We applied a set of price and cost assumptions to translate changes in volume into changes in net revenue for physician practices. We can model revenues net of administrative costs, or net revenue, π, as shown in Equation A.9:

$$\pi = \sum_p \sum_i (RP_{ip} - MC_{ip})V_{ip} ,$$

where i indexes visits, RP_{ip} is the relative payment per visit for payer type, and MC_{ip} is the marginal cost of a visit of a patient from payer type p.

Empirically Derived Payment Rates

Data Sources

While payment differentials across payers are widely recognized, there is surprisingly little research on variability in their magnitude, both spatially and across specialties. In the following section, we present our empirical approach to obtain payment differentials between TRICARE, Medicare, and commercial insurers within the seven study specialties and at the region level for 2013 as a proxy for the payment relativities that would inform 2016 physician decisionmaking.

We used allowed amounts (rather than paid amounts) from the three claims data sources to avoid misinterpreting payments, particularly from TRICARE when TRICARE is a secondary payer (for instance, for TRICARE for Life enrollees). Our general approach was to calculate the ratio of allowed amounts and total RVUs, both summed over all of a physician's services paid for by TRICARE, Medicare, or group health. We then calculated the median relativity in each region (either an MSA or the portion of each state that did not fall in an MSA) and by specialty for use in our model.

Payment Relativity Approach

This section describes the steps we took in constructing relative payments across specialties and regions.

Step 1: Aggregate allowed amounts and RVUs.
In this step, we aggregated allowed amounts and total RVUs at the physician (NPI) level.

Step 2: Construct payments per RVU.
In this step, we calculated the allowed amount per RVU by dividing the sum of allowed amounts by provider and facility or office place of service by the sum of total RVUs calculated in the same way. In TRICARE data, we calculated only payment per total RVU, since information on place of service was not available in our dataset.

Step 3: Obtain median payments per RVU.
We collapsed Medicare, TRICARE and commercial claims datasets by MSA, specialty, and place of service to obtain the median payment per RVU within specialty and place of service across 388 MSAs. We used medians rather than means to account for right-skewed distributions across datasets that were likely due to data error and/or billing conditions (for example, modifiers attached to bills for providers who are assistants at surgery that lowered payment rate but not RVUs) that we could not adequately control for, given the fact that we used RVU and payment data from TRICARE that were already aggregated by DHA. This step gave us median payments per RVU at the MSA level for each provider, specialty, and place of service.

Table A.4 reports median payments per RVU across providers. For Medicare, we observe larger spatial variation in payments per RVU for office charges than for facility charges across all specialties. Regardless of place of service, general practices and psychiatry experienced the smallest spatial variation in payments per RVU.

In the case of TRICARE, payments per RVU are similar to Medicare in both levels and distribution, whereas commercial payments per RVU are larger, on the order of about 30 percent. Additionally, commercial rates vary more across MSAs than do Medicare and TRICARE rates, especially for services furnished in a facility setting. The histograms in Figure A.2 show comparisons of the distribution of payments per RVU between providers across MSAs for each specialty, regardless of place of service.

Step 4: Construct relative payments per RVU.
In this step, we appended all (collapsed) datasets to calculate relative payments between providers within specialties across MSAs. Each of the median payment rates is anchored on Medicare. That is, MSA median payment rates per specialty either overall, in a facility or in the office, equal 1.0. We obtained relativities by applying the calculation shown in Equation A.10:

$$RelativepaymentperRVU^{i}_{j,MSA} = \frac{MedianpaymentperRVU^{i}_{j,MSA}}{MedianpaymentperRVU^{Medicare}_{j,MSA}},$$

where i = TRICARE or commercial insurance provider and j = cardiology, general practice, neurology, obstetrics/gynecology, orthopedic surgery, pediatrics, or psychiatry. Therefore, we arrive at the calculated median relative pay per RVU for each of the seven specialties and places of service across a maximum of 388 MSAs. (See Table A.5.)

Other Payment Rates

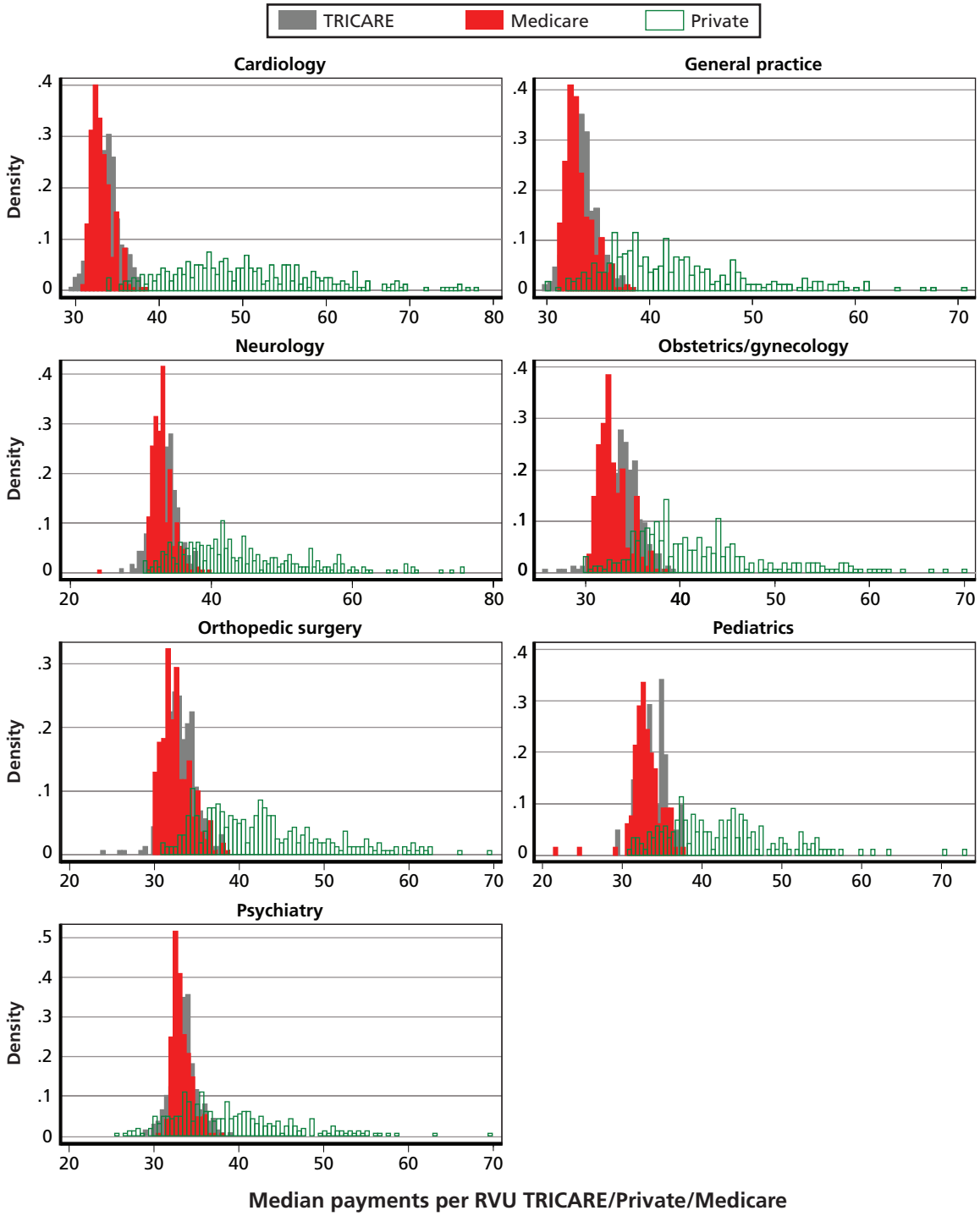
We relied on a set of assumptions and estimates from the literature summarized in Table A.6 to set other payment rates relative to Medicare. For Medicaid, we used state-specific relativities from a recent study of Medicaid fee schedule rates (Zuckerman, Skopec, and McCormack, 2014). Zuckerman, Skopec, and McCormack (2014) separated reported Medicaid-to-

Table A.4
Median Payments per RVU Across Providers

	Medicare		TRICARE		Commercial	
	Price	Std. Dev	Price	Std. Dev.	Price	Std. Dev.
Total	33.04	1.71	33.67	1.77	44.49	14.09
Facility	33.12	1.82	X	X	47.14	9.69
Office	32.86	1.90	X	X	38.95	7.30
Cardiology	33.06	1.62	33.53	1.91	49.93	9.07
Facility	33.38	1.18	X	X	54.95	10.63
Office	32.69	1.96	X	X	44.79	8.01
General practice	33.13	1.57	32.97	1.90	42.05	7.06
Facility	33.38	1.18	X	X	46.20	7.88
Office	32.95	1.86	X	X	37.90	6.48
Neurology	33.03	1.94	33.27	1.93	43.84	8.74
Facility	33.42	1.14	X	X	38.42	10.69
Office	32.89	2.12	X	X	39.01	6.97
Obstetrics/gynecology	32.93	1.62	32.87	2.16	41.87	7.06
Facility	31.55	3.97	X	X	44.63	7.56
Office	32.92	1.65	X	X	39.00	6.42
Orthopedic surgery	32.61	1.92	32.75	1.84	42.46	7.40
Facility	32.68	1.82	X	X	45.10	8.14
Office	32.56	2.05	X	X	39.61	6.63
Pediatrics	33.30	2.18	34.74	2.27	42.96	7.74
Facility	33.80	1.37	X	X	47.62	8.96
Office	33.16	2.48	X	X	37.65	6.17
Psychiatry	33.28	1.16	33.39	1.77	38.80	6.85
Facility	33.39	1.08	X	X	42.93	8.60
Office	33.04	1.31	X	X	34.70	6.33

NOTES: X represents a missing calculation caused by unavailability of the variables in our datasets. *Price* refers to the mean of the median payment per RVU across MSAs within specialties and place of service in 2013.

Figure A.2
Distribution of Median Payments per RVU Across Providers



NOTE: Histograms show spatial distribution of median payments per total RVU across MSAs regardless of place of service for Medicare, TRICARE, and private/commercial payers in 2013.

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Table A.5
Relative Payment per RVU by Provider and Specialty

	TRICARE		Commercial	
	Ratio	Std. Dev.	Ratio	Std. Dev.
Total	33.67	1.77	44.49	14.09
Facility	X	X	47.14	9.69
Office	X	X	38.95	7.30
Cardiology	1.02	0.04	1.52	0.28
Facility	X	X	1.66	0.33
Office	X	X	1.37	0.25
General practice	1.01	0.03	1.28	0.22
Facility	X	X	1.39	0.25
Office	X	X	1.16	0.20
Neurology	1.01	0.04	1.33	0.27
Facility	X	X	1.47	0.34
Office	X	X	1.18	0.21
Obstetrics/gynecology	1.03	0.06	1.28	0.22
Facility	X	X	1.45	0.31
Office	X	X	1.19	0.20
Orthopedic surgery	1.02	0.05	1.32	0.25
Facility	X	X	1.39	0.27
Office	X	X	1.22	0.22
Pediatrics	1.02	0.05	1.29	0.22
Facility	X	X	1.45	0.27
Office	X	X	1.11	0.19
Psychiatry	1.01	0.03	1.17	0.20
Facility	X	X	1.29	0.26
Office	X	X	1.05	0.19

NOTES: All prices are expressed as relative to Medicare (Medicare = 1.0). They refer to the mean of the ratio between median payments per RVU at the MSA level under Tricare or commercial insurance relative to Medicare in 2013. X refers to missing values caused by unavailability of the variables in our data sources.

Table A.6
Other Price Relativities

Payer	Price (Relative to Medicare)
Medicaid[1]	State and specialty-specific estimates
Private individual market and exchange[2]	10 percent lower than commercial group health rates
Uninsured[3]	1.19
Other[4]	1.00

[1] Zuckerman, Skopec, and McCormack, 2014.

[2] This is by assumption. There is still significant uncertainty surrounding average rates paid in exchange plans, although rates will likely fall between Medicare and commercial rates, on average.

[3] We assumed that uninsured individuals pay 125 percent of the empirically derived group health price but that only 75 percent of uninsured patients pay (with the remainder as uncompensated care). We varied this assumption in a sensitivity analysis.

[4] This is by assumption. The "Other" category includes all other sources of coverage, including public coverage not otherwise classified and workers' compensation.

Medicare rates for primary care and obstetric services. We used these specific relativities to match with these two study specialties and the "other services" relativities for the remaining five study specialties. In aggregate, Medicaid-to-Medicare relativities were 0.66 for all services, 0.59 for primary care services, 0.76 for obstetric care, and 0.74 for other services. We used these national relativities for Tennessee, which was excluded from the study because it did not have a fee schedule. We assumed that private individual market and exchange coverage paid providers at slightly lower rates than group health (10 percent lower). We varied this assumption in a sensitivity analysis. We assumed that uninsured patients pay more for services than group health patients (25 percent higher) but that only 75 percent of uninsured patients pay for care, with the remainder being uncompensated care. Finally, we assumed that payers in the "other" category—which in the ACS data is primarily other public coverage—pay at 100 percent of Medicaid rates.

Costs

We used a volume-based approach to model the marginal cost of delivering visits. This approach allows for practices with high visit volumes for any particular pay to have lower marginal costs—for example, from claims processing administrative efficiencies or familiarity with utilization management tools and drug formularies. Relatively low-volume payers have higher marginal costs because of practice administrative burden and provider time to interact with payers and patients. We chose the schedule shown in Table A.7 to escalate marginal costs as payers' share of the patient panel shrinks.

Table A.7
Marginal Administrative Costs by Share of Volume

Payer Share of Total Volume	Marginal Administrative Cost
More than 20% of physician volume	15% (base)
More than 10% and up to 20% of physician volume	1.1 × base = 16.5%
More than 5% and up to 10% of physician volume	1.2 × base = 18%
More than 2% and up to 5% of physician volume	1.5 × base = 22.5%
2% or less of physician volume	2 × base = 30%

The base rate was obtained from two studies that estimated that billing and insurance-related expenses average about 15 percent of revenues (Casalino et al., 2009; Morra et al., 2011). The assumptions on how these expenses vary according with the share in total volume are based on authors' conversations with practicing physicians and researchers studying managed care arrangements. As far as we are aware, there are no studies that directly tackle the issue of estimating marginal costs for physician visits by payer.

Identifying TRICARE Physicians at Risk

As mentioned above, we posit that physicians in the upper half of the distribution of average daily visits (in their practice state) might consider dropping their TRICARE patients after the increase in demand from the newly insured patients. Furthermore, we posit that these physicians would consider doing so as long as they could keep at least the same level of net revenues as before the increase in demand (i.e., in 2013). In other words, a physician would consider dropping TRICARE patients if (Equation A.11):

$$\sum_{p \neq TRICARE} \left(RP_{p,2016} - MC_{p,2016} \right) V_{p,2016} \geq \sum_{p} \left(RP_{p,2013} - MC_{p,2013} \right) V_{p,2013}$$

We performed these calculations for each physician, taking into account all appointments across offices. In other words, for each physician, we added visits of the same payer across all offices to determine total volume, the marginal cost rate, and the total net revenue.

Mapping Methods

To generate maps, we used ESRI ArcMap 10.3 software. Most outcomes were mapped at the county level, with prime service areas (PSAs) determined at the Zip Code Tabulation Area level. Both of these layers use the U.S. Census Bureau TIGER/Line shapefiles. PSA boundaries were determined using the DHA Omni Catchment Area Directory, which is a zip code–level file updated monthly with variables indicating whether the zip code is in a PSA or an MTF catchment area and a few other descriptors. MTFs were geocoded to the zip code centroid. The list of MTFs was derived from the Defense Medical Information System Identifier Tables, which were limited to active parent facilities in the United States.

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