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Section 201: Independent Assessment of the Health Care Delivery Systems and Management Processes of the Department of Veterans Affairs

Assessment G (Staffing/Productivity/Time Allocation)

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This report is the result of the contributions of several team members, who conducted site visits, processed and analyzed data, managed team activities, and enabled the Grant Thornton team to execute a rigorous study over a short period of time. The team was led by Grant Thornton, with integral support from team member FTI Consulting, and three independent contractors.

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Preface

Congress enacted and President Obama signed into law the Veterans Access, Choice, and Accountability Act of 2014 (Public Law 113-146) ("Veterans Choice Act"), as amended by the Department of Veterans Affairs (VA) Expiring Authorities Act of 2014 (Public Law 113-175), to improve access to timely, high-quality health care for Veterans. Under "Title II – Health Care Administrative Matters," Section 201 calls for an Independent Assessment of 12 areas of VA's health care delivery systems and management processes.

VA engaged the Institute of Medicine of the National Academies to prepare an assessment of access standards and engaged the Centers for Medicare & Medicaid Services (CMS) Alliance to Modernize Healthcare (CAMH)[1] to serve as the program integrator and as primary developer of the remaining 11 Veterans Choice Act independent assessments. CAMH subcontracted with Grant Thornton, McKinsey & Company, and the RAND Corporation to conduct 10 independent assessments as specified in Section 201, with MITRE conducting the 11th assessment. Drawing on the results of the 12 assessments, CAMH also produced the Integrated Report in this volume, which contains key findings and recommendations. CAMH is furnishing the complete set of reports to the Secretary of Veterans Affairs, the Committee on Veterans' Affairs of the Senate, the Committee on Veterans' Affairs of the House of Representatives, and the Commission on Care.

The research addressed in this report was conducted by Grant Thornton LLP, under a subcontract with The MITRE Corporation. Grant Thornton also subcontracted with FTI Consulting and other independent contractors in the conduct of the assessment.

[1] The CMS Alliance to Modernize Healthcare (CAMH), sponsored by the Centers for Medicare & Medicaid Services (CMS), is a federally funded research and development center (FFRDC) operated by The MITRE Corporation, a not-for-profit company chartered to work in the public interest. For additional information, see the CMS Alliance to Modernize Healthcare (CAMH) website (http://www.mitre.org/centers/cms-alliances-to-modernize-healthcare/who-we-are/the-camh-difference).

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Executive Summary

In a health system comprised of more than 150 hospitals and nearly 1,400 community-based outpatient clinics, Vet Centers and domiciliaries,[2] determining the staffing levels, caseload, and productivity required of VHA providers to meet the needs of over nine million enrolled Veterans[3] is a complex task. Yet, adequate provider staffing levels and a health care system that enables its clinicians to be productive in delivering VHA's population health focused model of care are essential to meeting the goal of timely, high quality care for our Veterans. This report details an assessment of the staffing levels, caseload, and productivity of providers across the VHA health care delivery system, and the allocation of providers' time between delivery of patient care and other tasks such as administration, education, and research. This assessment addresses section 201(G) of the Veterans Access, Choice and Accountability Act of 2014 (Veterans Choice Act).

Congress enacted the Veterans Choice Act to improve Veterans' access to timely, high-quality health care. It included a request for an independent assessment of several aspects of the VHA health care delivery system. Part G of Section 201 requires an independent assessment of "the staffing level at each medical facility of the Department and the productivity of each health care provider at such medical facility, compared with health care industry performance metrics, which may include an assessment of the case load and number of patients treated by each health care provider, time spent by health providers on matters other than caseload, including time spent at an affiliate, conducting research, training, or supervising other health care professionals of the department."

To address this requirement, and under contract to the MITRE Corporation, the Assessment G team, led by Grant Thornton LLP, in partnership with FTI Consulting, and three independent contractors, conducted an assessment of current provider staffing levels, caseload, and productivity, in comparison to health care industry benchmarks. This included an in-depth assessment of nurse staff resource allocation, decision-making, and processes which impact provider productivity and efficiency. The Assessment G team's approach involved both quantitative analyses (for example, benchmarking against nationally recognized industry benchmark surveys), as well as qualitative data analyses (root cause analysis review of data collected from over 700 interviews at 24 site visits, as well as data collected from VHA subject matter experts at VHA Central Office).

The Assessment G team had several key findings and observations pertaining to the core assessment objectives: staffing, productivity, and time allocation.

Staffing

The Assessment G team analyzed VHA provider staffing levels and compared them to the private sector (using physician per population ratio industry comparisons) and identified some

[2] Veterans Health Administration: About VHA. (2015). Retrieved from http://www.va.gov/health/aboutvha.asp

[3] Bagalman, Erin. (2014) The Number of Veterans That Use VA Health Care Services: A Fact Sheet. p3. Congressional Research Service. Retrieved from https://www.fas.org/sgp/crs/misc/R43579.pdf

of the challenges VHA faces in ensuring it has sufficient providers to meet demand. In summary, VHA's provider staffing mix reflects VHA's care model and the needs of the Veteran population, but conclusions from Assessment G about the adequacy of provider staffing levels and the impact of contract providers are difficult to make without consideration of the results of Assessment A (Demographics) and Assessment B (Capacity). VA medical centers face issues with provider vacancies, lengthy hiring processes, and competitive compensation, each of which can contribute to provider shortages. Key findings with respect to the VHA provider staffing levels are:

- **Finding 1:** VHA specialties with the highest provider full time equivalent (FTE) levels include medicine specialties, mental health, and primary care, consistent with VHA's care model and the needs of the Veteran population. Social Workers also represent a significant portion of provider FTEs. (See Section 2.2.2)
- **Finding 2:** VHA does not systematically track fee-based provider productivity, and does not capture FTE level information for fee-based care providers. (See Section 2.2.3)
- **Finding 3:** VHA physician staffing levels per population are, in most specialties, lower than industry ratios. These ratios are not sufficient to establish whether VHA is staffed to meet demand. One factor to consider is that even industry physician supply is not sufficient to meet demand in many specialties. Another factor to consider is that VHA uses Advanced Practice Providers (APPs) extensively, but APPs are not included in industry ratios. (See Section 2.2.6.)

Productivity

The Assessment G team assessed the productivity of VHA providers in comparison to providers in the private sector. This assessment used several common health care industry productivity measures: encounters (count of direct provider-patient interactions in which the provider diagnoses, evaluates, or treats the patient's condition), work relative value units (wRVUs—a measure of a provider's output which takes into account the relative amount of time, skill, and intensity required to complete a given procedure), and primary care panel size (the number of unique patients for whom a care team is responsible). The Assessment G team considered VHA's care model, benchmarked providers accordingly, and considered the barriers VHA faces in delivering care at a rate of productivity that matches health care systems in the private sector. In summary, we found that the average caseload or panel size of primary care providers is slightly below the level expected, but VHA's target panel size is comparable to the private sector considering the type of patient population served and the findings described in the body of this report. VHA mental health providers are generally more productive than many of their peers in the private sector. VHA specialty providers on the other hand tend to lag the private sector in their productivity, although providers at high complexity VA facilities tend to have high productivity.

There are several operational constraints or barriers which may explain these differences, such as: insufficient exam rooms and clinical or non-clinical support staff, and a lack of standard practices for managing daily staff absences. Based upon the Assessment G team's observations and the findings of Assessment F (Clinical Workflow), we have concerns that providers may not be properly documenting all of their workload, which may explain some of the difference in

productivity. The accuracy of documentation and coding shouldn't be just considered for the sake of measuring wRVUs; coding is important to measuring whether clinical pathways are being appropriately followed and understanding care outcomes. Key findings with respect to the caseload and productivity of VHA providers are:

- **Finding 4:** VHA measures the performance of its PCPs using panel size. VHA calculates a modeled panel size for providers based on a variety of factors at each facility. The model was developed based on research into the appropriate panel size for the unique needs of Veterans. (See Section 2.3.5.2)
- **Finding 5:** In accordance with policy, VHA facilities establish a maximum panel size for each primary care provider which is often lower than the modeled panel size. The maximum figure takes into account specialized panel needs (for example, a geriatric population) and other factors deemed appropriate by the facility. (See Section 2.3.5.4).
- **Finding 6:** The actual panel size of VHA primary care providers is lower than internal and external benchmarks. (See Section 2.3.5.5)
- **Finding 7:** When compared to the private sector using wRVUs, there is a productivity gap in VHA specialty care. (See Section 2.3.6.3)
- **Finding 8**: When encounters (visits) are used as a measure, the gap shrinks and VHA specialty care compares more favorably to the private sector. (See Section 2.3.6.4).
- **Finding 9**: VHA mental health providers are more productive than academic medical center (American Medical Group Management Association [AMGMA]) benchmarks, as measured by both wRVUs and encounters. (See Section 2.3.6.5)
- **Finding 10:** Overall, VHA specialty care providers are producing fewer wRVUs than private sector benchmarks; however, VHA specialty care providers at the highest complexity facilities are more productive than their peers. Further, the most productive VHA providers (those at the 75th percentile of VHA providers) are often more productive than the private sector. (See Section 2.3.6.6)
- **Finding 11:** Productivity and access are important measures in population based health models like VHA that focus on patient outcomes, rather than volume. VHA's Office of Productivity, Efficiency, and Staffing (OPES) reports on productivity and access offer tools for use by medical facilities. With some improvements to expedite adoption and regular use by medical centers, these tools could become key resources in optimizing productivity and maximizing access to care. (See Section 2.3.6.8)
- **Finding 12:** VHA dentists see fewer patients on average than private sector benchmarks, but serve a population with special needs. The dentistry patient population of VHA generally has a compensable service-connected dental disability, is older, has more complex injuries, and may present for dental care following years of dental neglect. (See Section 2.3.7.4).

Key findings with respect to the barriers VHA faces in delivering care that is equally as productive as the private sector are:

- **Finding 13:** Insufficient exam rooms and poor configuration of space limits providers' productivity, ability to maximize patient throughput, and reduces patient access. (See Section 2.3.8.3)
- **Finding 14:** Clinical and administrative support staff ratios are insufficient and may limit provider productivity. (See Section 2.3.8.4)
- **Finding 15:** Insufficient clinical and administrative support staff results in providers and clinical support staff not working to the top of their licensure. (See Section 2.3.8.4.1).
- **Finding 16:** While there has been widespread implementation of the Patient Aligned Care Team (PACT) model in primary care clinics and the National Nurse Staffing Methodology in many areas of inpatient care, there are no current VHA standards for staffing levels and/or mix in specialty clinics, with the exception of eye clinics. Furthermore, VHA OPES has developed state of the art tools for managing staffing and productivity, but these tools will require improvements for leaders to more effectively leverage them in resource decisions. (See Section 2.3.8.4.2)
- **Finding 17:** Organizational siloes and separate reporting lines exist for physicians, nurses and medical service administrators at a majority of VA Medical Centers (VAMCs). As a result, service chiefs do not have control over the resourcing and performance of their clinical support staff (nurses) or clerical and administrative support staff. (See Section 2.3.8.4.3)
- **Finding 18:** Many facilities do not have a centralized staffing office or nurse float pool to address daily staff variances or absences. (See Section 2.3.8.4.4)
- **Finding 19:** During site visits and interviews with VHA Central Office leaders, we consistently heard concerns that providers do not fully document and accurately code all of their clinical workload. (See Section 2.3.8.5)

Provider Time Allocation

The Assessment G team assessed how VHA providers spend their time, to include the time that VHA providers spend on non-patient care activities, particularly time spent on education and research activities, as well as time spent overseeing residents in a clinical setting, and time spent at academic affiliate medical centers. We compared VHA providers' clinical time to private sector data, as well. In summary, we found that VHA providers spend approximately the same proportion of their time on clinical care activities as the private sector, despite a rich research output. Key findings with respect to VHA providers' time allocation are:

- **Finding 20:** VHA physicians spend a comparable proportion of total time devoted to clinical activities as private sector physicians. There is some potential difference in the definition of direct patient care used by the private sector, specifically with respect to training, teaching and research, but we believe this represents only a small proportion of a provider's direct patient care time. (See Section 2.4.2)
- **Finding 21:** Across all VHA providers, less than two percent of time is devoted to research. Since provider time spent devoted to clinical care activities is comparable to the private sector, it does not appear that research activities reduce providers' time spent treating patients. Despite the overall low proportion of time spent on research, the

accomplishments of VHA's research program, and contributions to advancing care for Veterans, are numerous. (See Section 2.4.4)

Recommendations

Several recommendations and best practices were identified to address the findings of this assessment. These should be considered in concert with the findings and recommendations of other Veterans Choice Act Assessments (Assessments E-Scheduling, F-Clinical Workflow, and H-Technology). In formulating these recommendations, the Assessment G team considered the findings and recommendations of the other Veterans Choice Act Assessments, prior reports by the VA Office of the Inspector General (OIG), the Government Accountability Office (GAO) and other government bodies, together with promising VHA practices identified in the course of our site visits, and best practices from external health care organizations identified through the course of our literature review.

The Assessment G team offers five overarching recommendations to VHA. In Section 3 we identify the supporting evidence for each recommendation, relevant promising or best practices, and potential near-term actions or next steps. We also provide a discussion of cross-cutting implementation considerations that may be used to develop, enhance, or speed implementation. By implementing these recommendations, along with the recommendations of the other Veterans Choice Act Assessments, VHA can with the support of Congress evolve into a consistently high performing health system, enabling access to high quality care in an efficient and cost effective manner.

1. **VHA should improve staffing models and performance measurement.**

This assessment recommends that VA conduct an evaluation of the design and implementation of current VHA staffing models to determine the extent to which they are sufficient to meet the goals of VHA's population health focused model and ensure all eligible Veterans have access to high quality, timely care. VHA should conduct a program review of the implementation of the PACT staffing model in primary care to identify the causes of the gaps between actual, facility maximum, modeled and external benchmarks, the impacts of these performance gaps on access to quality care, the appropriateness of current guidelines and performance standards, and determine areas for improvement. VHA should develop and implement staffing models for outpatient specialty care services and improve existing performance measurement systems to realize the benefits of specialty care staffing models. VHA should refine and implement the National Nurse Staffing Methodology across inpatient services and improve the performance measurement system to realize the benefits of the methodology. We further recommend that VHA mandate all VAMCs adopt and report nursing quality metrics to a national database to compare VHA to other external health organizations.

To improve staffing and productivity measurement and better determine the capacity of VHA specialty clinics, this assessment recommends that VHA gather data and assess the productivity of fee-based providers, as well as conduct a work measurement study (or confirm existing workload data) to determine the volume and distribution of workload annually to better match staffing requirements to demand. For future reporting, OPES should complete the development of the APP productivity cube, to include completion of business rules that would allow APPs to be mapped to a specialty designation and included in OPES specialty group practice and facility

productivity reports to accurately reflect care teams' overall effort and present a combined provider (doctor of medicine [MD] and APP) productivity view.

2. **VAMCs should create the role of clinic manager and drive more coordination and integration among providers and support staff.**

This assessment identifies recommendations for increasing the level of teamwork and accountability among all outpatient clinic staff, especially in specialty care services. This might be achieved by creating multidisciplinary management teams for specialty clinics that include a physician leader, nurse leader, and business administrator. Alternatively, specialty clinics might establish a single or dual reporting line and operating a model for providers and their clinical and non-clinical support staff, so that all of the members of the specialty clinic team have more accountability to each other and the Service Chief of the specialty.

3. **VA Medical Centers should implement strategies for improving management of daily staff variances, and include a replacement factor for all specialties, including PACT.**

With respect to managing staff absences, this assessment makes recommendations for improving the management of daily staffing variances by implementing several strategies that include intermittent float pools of support staff and the inclusion of a replacement factor across all staffing methodologies/models, to include PACT.

4. **VA Medical Centers should implement local best practices that mitigate space shortages within specialty clinics.**

This assessment identifies recommendations to help VA medical facilities mitigate space shortages within specialty clinics. These include strategies such as: standardized schedule templates, expanded clinic hours, increased use of non-face-to-face encounters for follow-up consults by specialty care, and system redesign initiatives to improve patient flow within clinics.

5. **VHA should improve the accuracy of workload capture.**

This assessment recommends that VHA conduct an audit of health record documentation and current procedural terminology (CPT®) coding accuracy and reliability to validate physician productivity measurement and that if the results support it, evaluate the ability of commercially available computer assisted coding (CAC) applications to assist providers with coding. The creation of the role of clinic manager for Specialty Care clinics should also be used to improve clinic management and coding practices.

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Staffing levels at VA medical centers (VAMCs)	Section 2.2, Appendix Section B.2
Provider productivity and comparisons to industry standards, as well as provider caseload, number of patients treated (encounters)	Section 2.3, Appendix A, **Figure** 2-16, Figure 2-21, Figure 2-22, Table 2-5 Section 2.3.5,Section 2.3.5.5, Section B.2.5
Time spent by providers on matters other than caseload	Section 2.4, Section 2.4.1, Section 2.4.2, Figure 2-31, Figure 2-33, Figure 2-34, Figure 2-36
Provider time spent at an affiliated medical facility	Section 2.4.3
Provider time conducting research	Section 2.4.4, Figure 2-34
Provider time training or supervising other health care professionals of the Department	Section 2.4.5, Figure 2-36

1 Introduction

As the nation's largest integrated health care delivery system[4] – and one dedicated solely to providing care and support services to Veterans, their dependents and survivors – the roles and missions of the Department of Veterans Affairs (VA) are important to all Americans. VA endeavors to provide our nation's heroes with the highest quality health care possible. To do so, it must address the unique health care needs of Veterans while removing the barriers and challenges that hamper its provider's ability to deliver Veterans the timely, high quality care and positive patient experience they deserve. The Veterans Health Administration (VHA) offers care that is good or better than national benchmarks, and the majority report positive experiences with their health care providers. However, too many of our Veterans wait too long to receive the high quality care they deserve.

In a health system comprised of more than 150 hospitals and nearly 1,400 community-based outpatient clinics, Vet Centers and domiciliaries,[5] determining the staffing levels, caseload, and productivity required of VHA providers to meet the needs of over nine million enrolled Veterans[6] is a complex task. Adequate provider staffing levels and a health care system that enables its clinicians to be productive in delivering VHA's population health focused model of care are essential to meeting the goals of timely, high quality care for our Veterans. This report details an assessment of the staffing levels, caseload, and productivity of providers across the VHA health care delivery system, and the allocation of providers' time between delivery of patient care and other tasks such as administration, education, and research. This assessment addresses section 201(G) of the Veterans Access, Choice and Accountability Act of 2014.

1.1 Purpose, Scope, and Sub-assessments

1.1.1 Purpose

Congress enacted the Veterans Choice Act to improve Veterans' access to timely, high-quality health care. As the first step toward improving access, the Veterans Choice Act required an independent assessment of the VHA health care delivery system. In response, the MITRE Corporation brought together independent industry experts, to include Grant Thornton, to identify current practices and opportunities for improvement, as well as opportunities to scale best or promising practices. Part G of Section 201 requires an independent assessment of:

The staffing level at each medical facility of the Department and the productivity of each health care provider at such medical facility, compared with health care industry performance metrics, which may include an assessment of any of the following:

> (i) The case load of, and number of patients treated by, each health care provider at such medical facility during an average week.

[4] Veterans Health Administration: About VHA. (2015). Retrieved from http://www.va.gov/health/aboutvha.asp

[5] Ibid.

[6] Bagalman, Erin. (2014) The Number of Veterans That Use VA Health Care Services: A Fact Sheet. p3. Congressional Research Service. Retrieved from https://www.fas.org/sgp/crs/misc/R43579.pdf

(ii) The time spent by such health care provider on matters other than the case load of such health care provider, including time spent by such health care provider as follows:

(I) At a medical facility that is affiliated with the Department.

(II) Conducting research.

(III)Training or supervising other health care professionals of the Department.[7](113 U.S.C, Veterans Choice Act p. 16-17)

1.1.2 Scope

Pursuant to the language in Section 201 of the Choice Act, the scope of our assessment focuses on VHA provider staffing levels, caseload, productivity, and time in comparison to health care industry benchmarks. To further refine the legislative language, we developed the following assessment objectives and structured our study around them:

1. Describe the current state of VHA provider[8] staffing levels, as compared to industry standards, benchmarks, and metrics.
2. Assess VHA provider productivity as compared to industry standards, benchmarks, and metrics.
3. Describe the relative time spent by VHA providers on non-patient care activities.

In addition to completing benchmark comparisons, we assessed the drivers of productivity within VHA, and potential causes of differences between the productivity of VHA providers and the private sector. In doing so, we compared current VHA practices that impact productivity to accepted best practices drawn from literature and professional associations, as well as standard practices from benchmark data and surveys. We also considered promising practices observed at individual VAMCs we visited. This provided insight into alternative approaches and recommendations that could be implemented VHA wide to improve staffing and productivity practices. By implementing these recommendations, along with the recommendations of the other Veterans Choice Act Assessments, VHA can, with the support of Congress evolve into a

[7] Veterans Access, Choice and Accountability Act of 2014, 113 U.S.C. Congress § 3230. (2014). Retrieved from http://www.gpo.gov/fdsys/pkg/BILLS-113hr3230enr/pdf/BILLS-113hr3230enr.pdf

[8] ***Definition****: VHA provider, for the purposes of this assessment, is defined as an independent licensed practitioner (Physician Assistants [PA], Nurse Practitioners [NP], Doctor of Medicine [MD], Physical Therapists, Psychologists, Social Workers), taking the Health Resources and Services Administration's [HRSA] definition of independent licensed practitioner to be "a physician, dentist, NP, nurse midwife, or any other individual permitted by law and the organization to provide care and services without direction or supervision, within the scope of the individual's license and consistent with individually granted clinical privileges." Clinical Nurse Specialists are excluded from this definition. The definition of a VHA provider includes providers employed full-time by VA. The scope of VHA providers includes inpatient and outpatient care, primary care, specialty care, dentists, and mental health providers. Although contract and fee providers are, in some facilities, a significant proportion of care delivery teams; they are deemed out of the scope of this assessment, due to an inability to quantify staffing levels (full time equivalent [FTE]), or hours worked, as VA does not track this information.*

consistently high performing health system, enabling access to high quality care in an efficient and cost effective manner.

Assessment G is closely connected to several other assessments requested within the Choice Act, including, but not limited to, assessments A (demographics), B (capacity and resources), E (scheduling), F (clinical workflows), H (information technology), and K (facilities). To avoid overlap and duplicative analysis, we completed our assessment in close collaboration with others. We have indicated key instances where further relevant analyses are included in related assessments, throughout our report.

1.1.3 Sub-Assessments

The scope of Assessment G can be broken into three elements, or "sub-assessments" which tie to the three main objectives of this assessment: provider staffing, provider productivity, and provider time allocation.

1.1.3.1 Provider staffing (Objective 1)

To assess the provider staffing levels at VHA, we report the current staffing levels across all VHA facilities, as well as at individual facilities, and averages across varying facility types, defined by the complexity of care provided. We also compared physician supply to population ratios of VHA with external benchmarks which provide an indicator of physician need (there are no comparison data available for advanced practice providers [APPs]). For primary care providers, we compared panel sizes which is a measure of both staffing and productivity – this analysis is provided in the subsequent section on provider productivity. Since part of our defined assessment scope was to understand how provider staffing might differ from the private sector to meet the unique needs of the Veteran populations, we used supplemental data on the needs of Veterans from Assessment A (Demographics) to explain differences in VHA's physician workforce compared to the private sector. We did not explicitly assess whether current physician staffing levels would enable VHA to provide timely and accessible care to Veterans as this is part of the scope of Assessment B (Capacity). However, we do elaborate on some of the challenges of assessing the adequacy of staffing levels. We did not assess projected staffing levels as this was also part of the scope of Assessment B. Lastly, we assessed the challenges that VHA faces in filling provider vacancies to meet mission needs, as reported on our site visits and supported by the data.

1.1.3.2 Provider productivity (Objective 2)

We assessed the productivity and caseload of providers, compared to the private sector. For specialty care providers, we analyzed the caseload and productivity relative to industry benchmarks using work relative value units and patient visits per year (encounters). Because VHA has a population based health care delivery model in which primary care providers are responsible for managing the health of a panel (the number of patients a provider a care team is accountable for)[9] of patients, we assessed the productivity and caseload of primary care

[9] A primary care panel is equivalent to the caseload definition used in specialty care.

providers by comparing primary care panel sizes to comparable private sector panel size benchmarks.

We also discuss VHA barriers to optimal productivity in detail as part of this report. We present the barriers identified through our site visits and through a comprehensive root cause analysis, and provide supporting evidence with supplemental data analyses. One of the key drivers we identified was the presence of adequate clinical support staff. Provider productivity is enhanced by the right number, composition, and use of clinical support staff. Variations from best practice support staffing ratios result in workflow inefficiencies that reduce productivity, result in fragmentation of care, and decreased access. Because this issue was one of the most significant barriers, we conducted a more focused review of it. This part of the study was also conducted in especially close coordination with Assessment F and included separate objectives and assessment questions, listed in Appendix B. The results of this sub-study are presented within the overall barriers section.

1.1.3.3 Provider time allocation (Objective 3)

The Assessment G team analyzed VHA provider time allocation to determine the percentage of provider time spent in non-clinical care activities. Specifically, we calculated the proportion of provider time spent across each category of clinical, administrative, research, and teaching activities. We compared VHA provider clinical time to an industry survey. We also assessed, by way of a case study, VHA providers' time spent at academic affiliate institutions (medical schools and their associated medical centers). We assessed how VHA uses academic affiliations, as well as opportunities for providers to conduct research and teaching, as recruitment tools to secure providers and other clinical staff, and their importance to VHA's objective of leading the nation in research on the unique needs of Veterans.

1.2 Approach

Our team followed a four-phased approach to conduct the staffing assessment: discovery, analysis, findings and conclusions, and recommendations. This section provides an overview of the Assessment G team's approach, broken out by these four phases. For a more detailed review of the methodology, to include additional detail on data sources, definitions, and approaches to reviewing, aggregating, adjusting, analyzing and reporting data, as well as study limitations, please reference Appendix B.

1.2.1 Discovery

Key activities conducted during the discovery phase of the assessment included:

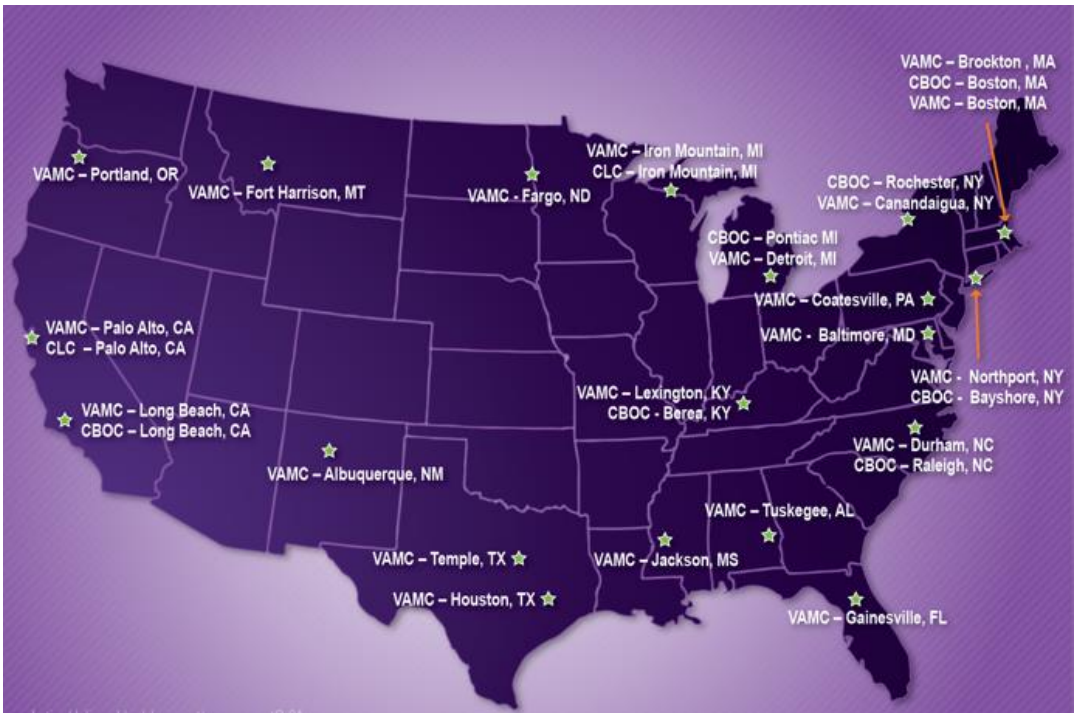
- Background research: The Assessment G team conducted background research on VHA provider staffing and productivity during the discovery phase of this project. This research included reviews of VHA policies and directives as well as management reports to determine the business rules that influence staffing levels and productivity measurement of VHA providers. We also reviewed reports related to staffing, productivity and access from GAO, VA Inspector General Reports, Congressional testimonies, Institute of Medicine, and other relevant sources.

- Interviews: The team interviewed VHA policy leaders and subject matter experts from the major specialties as well as the leaders of the program offices responsible for reporting VHA staffing levels and provider productivity.[10] Through these interviews, the team identified clinical policies and administrative requirements that could potentially impact the productivity of VHA providers.
- Data collection: We obtained staffing, workload, and time allocation data of VHA providers from VHA for fiscal year 2014. The sources and definitions of the data are described in detail in Appendix B. All provider data was de-identified by VHA, (for example, individual provider names were removed).
- Identification of benchmark surveys: The team identified potential external health care industry performance benchmark surveys to compare to VHA. These included the most current (2014 report using 2013 survey data) Medical Group Management Association (MGMA) Physician Compensation and Production Survey (the most widely used benchmarking survey) and Academic Practice Compensation and Production Survey, and 2010 American Dental Association (ADA) Survey of Dental Practices, as well as primary care panel benchmarks from MGMA surveys, as well as the American Medical Group Association (AMGA), Kaiser Permanente Medical Group Northern California, and American Academy of Family Physicians. In addition, we used several sources for supplemental comparisons related to staffing and productivity. These are detailed throughout the report and in the methodology (Appendix B).
- Site selection: In coordination with other independent assessment teams, the Assessment G team selected 24 VAMCs and community based outpatient clinics (CBOCs) to visit. The purpose of the site visits was to interview local facility leaders and providers to understand the differences between VHA provider staffing, caseload and productivity levels from the private sector. The team also used VHA management reports of provider productivity to identify trends and outliers across each of the specialty groups across VHA. The Assessment G team then selected for interviews the service leaders and providers from a range of trend groups, to include highly productive specialties, low productivity specialties, specialties with good Veteran access to care, and poor Veteran access to care.

Figure 1-1 depicts the facilities that the Assessment G team selected and subsequently visited during the analysis phase of the assessment.

[10] These offices included: Primary Care, Office of Specialty Care Services, Mental Health, Dentistry, OPES, the Managerial Cost Accounting Office (MCAO), Surgery, Geriatrics, Physical Medicine and Rehabilitation, Women's Health, Telehealth, Workforce Management, and offices within VHA that oversee research, academic affiliations, and medical coding.

Figure 1-1. Assessment G selected site visits



1.2.2 Analysis

The team used a combination of quantitative and qualitative analysis techniques to address the Assessment G objectives.

1.2.2.1 Quantitative Analysis

We employed several quantitative methods, to include:

Provider Staffing Levels (Objective 1):

- Aggregate staffing levels: We calculated aggregate staffing levels across seven categories of physicians and APPs (primary care, hospital based specialists, non-hospital based specialists, social workers, mental health, and dentistry) using VA's Personnel and Accounting Integrated Data (PAID) FTE data.
- Comparison to Industry ratios: We calculated the number of physicians (by specialty) per 100,000 enrollees and compared to an industry ratio.
- Staffing Levels by facility: Using the aggregate staffing levels data, we broke out staffing levels by facility.

Provider Productivity (Objective 2):

- Benchmarking: The team calculated total encounters and work relative value units (wRVUs) per provider across each specialty and facility using individual provider workload as reported in VHA productivity cubes and provided by VHA OPES. The team validated the wRVU data using total encounters obtained for each provider.

  - Our team applied relevant adjustments (modifiers, gap and imputed codes, and duplication of workload credit to multiple providers) to the VHA wRVU data set to allow the most accurate comparison to external benchmark surveys. For encounter productivity analysis, the Assessment G team was unable to apply the same level of rigorous validation and adjustment as was applied to the wRVU data.
  - The team also used benchmarking data from external benchmark surveys and calculated VHA provider productivity percentiles relevant to these benchmark data sets (using both wRVUs and encounters).
- Primary care panel comparison: The team obtained actual and modeled panel sizes for VHA primary care providers from VHA's Office of Information and Analysis and calculated averages and benchmarked them.

Provider Time Allocation (Objective 3):

- Allocation of time across labor mapping categories: We calculated the allocation of VHA provider time between patient care, research, education, and administration using VHA labor mapping data from its Decision Support System (DSS). We compared this time to an industry survey.
- Time spent at an affiliate: We calculated time spent by a sample of providers at an affiliate institution using data collected from a site visit.

1.2.2.2 Qualitative analysis

We used several qualitative methods, to include:

- A literature review of relevant VHA policies and directives that impact provider staffing and productivity.
- A literature review of relevant best practices across external health care industry organizations. In collaboration with other assessment teams and the Integrator, the team also visited two of the nation's leading health care systems to glean additional leading practices.
- Interviews with VHA national policy and operations leaders and staffing and productivity subject matter experts.
- Site visits to VA medical facilities and CBOCs which included interviews with VHA medical facility leaders and providers. The Assessment G team interviewed 355 providers, 279 facility leaders, and 94 nurse executives, for a total of more than 700 interviews across all site visits.
  - Content analysis: We analyzed content to identify themes from the interviews (by the frequency with which various themes were raised by leaders) and the use of a weighting tool to categorize, aggregate and prioritize a set of contributing factors to provider productivity and patient access. These contributing factors were considered potential causal areas to focus on in a root cause analysis.
  - Root cause analysis: We used root cause analysis to understand the "who, what, where, how and why" of provider productivity gaps and to introduce systems-

based thinking into the analysis of potential factors that make it difficult for certain VHA specialties to match the private sector on productivity. The team used the potential causal areas and preliminary fishbone diagrams to identify additional questions to ask facility leaders and providers regarding possible contributing factors to further the evidence base.

1.2.3 Documentation of findings and conclusions

The Assessment G team documented its findings using data and evidence from the quantitative and qualitative analyses. The findings address the requests articulated within Section 201(G), as well as qualitative and quantitative findings which help to explain *why* the staffing level, productivity, and time allocation data is as presented, or other notable observations relevant to the subject matter studied. The latter findings are especially important as they map to recommendations and provide insights into *how* productivity, staffing, or time allocation issues or deficiencies may be addressed. Findings are listed throughout the report, alongside the relevant analyses, and in the order of the assessment objectives.

At the completion of the analysis phase, the Assessment G team conducted a full team meeting to review the findings and the tentative conclusions with respect to each assessment objective. At this early May meeting, the team discussed and validated each key finding and tentative conclusion, which were drawn from both quantitative and qualitative analyses. This formed the basis of the findings and conclusions documented within the assessment report.

1.2.4 Documentation of recommendations

To inform the development of recommendations, the team identified promising practices related to provider staffing and productivity during site visits and combined them with external best practices identified earlier during the literature review of external health care industry organizations, and from the site visits to two high performing health systems.

Physician practice specialists, health data analysts and statisticians, health care delivery consultants, and clinician team members who participated in the site visits and quantitative data analyses reviewed the key findings, tentative conclusions, and internal and external leading practices. Using the promising or best practices research – documented both internally and externally, we identified recommendations. We developed the recommendations for groups of findings – and in some cases, for individual findings, that would benefit from being addressed. In several cases, findings identified a positive outcome and did not need to be addressed with a recommendation. The team identified the supporting evidence for each recommendation, relevant promising or best practices, and potential near-term actions or next steps. Finally, the team discussed cross-cutting implementation considerations that may be used to develop, enhance, or speed implementation.

2 Findings

In this section, we provide our key findings and observations related to VHA provider staffing, productivity, and allocation of providers' time. This section is broken out into four sub-sections, the VHA care model followed by the three assessment objectives. We intentionally describe the care model within VHA first, because the needs of VHA's patient population, which dictate the need for a care model that is somewhat different from many private health care systems, is the foundation for how VHA staffs its medical centers and CBOCs, which subsequently can impact both productivity and time allocation.

To see where we explicitly address the requirements within the Section 201(G) legislation, please refer to the table at the bottom of the report's table of contents.

2.1 VHA's Personalized, Proactive, Patient Driven Care Model

Fundamental to understanding how VHA resources its medical centers to meet patient needs is first understanding its population health focused model of care delivery. This model places primary care providers as the central access point and accountable party for a Veteran's care, and influences how VHA serves Veterans, to include the types of care it provides, in other environments. VHA endeavors to provide care to Veterans through a primary care-driven, population health focused model. This model of care is similar to that adopted by other leading health care systems, such as Kaiser Permanente, Geisinger, and Cleveland Clinic. The population health approach aims to enhance the health and well-being of the Veteran population by achieving the first goal within VHA's current strategic plan to "provide Veterans personalized, proactive, patient-driven health care."[11] These three tenets are of utmost importance, and are defined as follows within VHA's current strategic plan:

- **Personalized**: a dynamic adaptation or customization of recommended education, prevention and treatment that is specifically relevant to the individual user, based on the user's history, clinical presentation, lifestyle, behavior and preferences.
- **Proactive**: acting in advance of a likely future situation, rather than just reacting; taking initiative to make things happen rather than just adjusting to a situation or waiting for something to happen.
- **Patient-driven**: an engagement between a patient and a health care system where the patient is the source of control such that their health care is based in their needs, values, and how the patient wants to live.[12]

The current VHA strategic plan further elaborates on several objectives that fall under this first goal, which cover key aspects of a population health focused care model, such as:

- Partnering with patients in care delivery;

[11] U.S. Department of Veterans Affairs. (2013). VHA Strategic Plan FY2013-2018. p1. Retrieved from http://www.va.gov/health/docs/VHA_STRATEGIC_PLAN_FY2013-2018.pdf

[12] Ibid.

- Communicating the care model to stakeholders and the workforce;
- Clearly defining the care model and ensuring that it is understood by stakeholders and the workforce;
- Ensuring that Veterans have convenient access to information, and support to make informed decisions as well as implement their personal health plans;
- Ensuring Veterans receive timely, high quality, personalized, safe, effective and equitable health care;
- Driving an improvement culture across the organization; and,
- Strengthening collaborations with communicates and other organizations.

This approach is grounded in VHA's patient centered medical home (PCMH) model, known as PACT, which VHA began implementing across facilities in 2009. The PACT model was implemented in all facilities, but level of implementation maturity varies.

VHA's specialty care transformation initiative has focused on building a stronger interface with PACT to make care more Veteran-centered, timely, coordinated (less fragmented) and accessible. To enhance access to specialties, especially in rural areas, VHA has increased the use of telehealth and other non-face to face modes and modalities of care delivery (for example, secure messaging) for providing specialty care services.[13] While primary care at VHA has developed specific staffing guidance as part of PACT, specialty care lags behind primary care in that most specialty clinics lack specific staffing guidance, though the delivery model is meant to be patient centered and promote close collaboration with a patient's primary care provider and other care team members. Appropriate staffing and resourcing guidance or models are an important element of enabling a care model to be effective.

What is a model of care?

A "model of care" generally defines how health services are delivered, based on theoretical and evidence-based principles, and reflecting the preferences of patients, providers, and policy makers.

VHA faces challenges in the development and maintenance of demand forecasting models, as well as staffing and resourcing guidance due to the fact that most Veterans have more than one possible source of health coverage and may receive some portion of their health care from external providers using other health care coverage; for example, private insurance or TRICARE (see Assessment A by RAND).

[13] Retrieved from http://www.va.gov/healthbenefits/access/specialty_care_services.asp

Many Veterans, including a percentage of those enrolled in VHA care, receive their health care from non-VA sources, including from non-VHA providers Medicare and Medicaid benefits.[14] In other words, there is a large number of co-managed patients at VHA, far more than patients who rely solely on VHA. Additional studies have reported on the reliance of Veterans on VA versus other health care sources. The American Community Survey found that more than one third of VA enrollees receive care from other programs.[15] Another survey of Veterans found that a third of respondents were enrolled in Medicare, and over half received insurance from a current or former employer.[16]

Of those Veterans who choose to have all or a portion of their care covered by VA, certain Veterans are permitted to choose care outside of the VA system and have their provider of choice paid for by VA, as a result of the Veterans Choice Act passage, and initiation of the Choice Card Program. More specifically, Veterans who live more than 40 miles from a VA health care facility are eligible to receive non-VA care using their Choice card. Although the Choice Card program and broader non-VA programs offer valuable care options to Veterans in need, when Veterans are receiving care from multiple fragmented sources, it can create a co-managed care system that relies on the input and collaboration of providers in and outside of the VA system, and raises the potential difficulty of ensuring continuity of care.

A population health care model (for example, PCMH) is tailored to serve the unique needs and requirements of a population that it serves. Of the total Veteran population of 21 million, approximately 9 million are enrolled in VA health care, almost 7 million access VA care for certain conditions or types of treatment, and approximately 2 million use VA health care exclusively.[17] The Veteran population who use VA health care is changing. According to RAND's Assessment A report, the mean age of Veterans using VA health care will increase slightly over the next ten years and the Veteran population will have a higher proportion of both older and younger Veterans. Care models and the staffing and resourcing plans that accompany them will need to change to adapt to these changing Veteran demographics and needs.

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[14] U.S. Department of Veterans Affairs National Center For Veterans Analysis and Statistics. (2015). Profile of Veterans: 2012 Data from the American Community Survey. p10. Retrieved from http://webcache.googleusercontent.com/search?q=cache:-tlmX7E36KEJ:www.va.gov/vetdata/docs/SpecialReports/Profile_of_Veterans_2012.pdf+&cd=1&hl=en&ct=clnk&gl=us

[15] U.S. Department of Veterans Affairs National Center For Veterans Analysis and Statistics. (2015). Profile of Veterans: 2012 Data from the American Community Survey. p10. Retrieved from http://webcache.googleusercontent.com/search?q=cache:-tlmX7E36KEJ:www.va.gov/vetdata/docs/SpecialReports/Profile_of_Veterans_2012.pdf+&cd=1&hl=en&ct=clnk&gl=us

[16] Westat. (2010). National Survey of Veterans, Active Duty Service Members, Demobilized National Guard and Reserve Members, Family Members, and Surviving Spouses. p138. Retrieved at http://www.va.gov/SURVIVORS/docs/NVSSurveyFinalWeightedReport.pdf

[17] Bagalman, E. (2014). The Number of Veterans That Use VA Health Care Services: A Fact Sheet. p3. Congressional Research Service. Retrieved at https://www.fas.org/sgp/crs/misc/R43579.pdf

VHA's Office of Rural Health (ORH) has studied the rise of Veterans using both VA and non-VA health care providers, an especially important topic for rural Veterans who have reduced access to health care overall. ORH notes that many of the critical relationships required between VA health care and local and private sector health care systems to ensure delivery of comprehensive, quality health care to these Veterans are underdeveloped. ORH states that improving relationships between VA and private health care systems by enhancing communication and coordination, as well as identifying dual use in Veteran populations, is crucial for improving health outcomes and avoiding potential pitfalls in care of rural and highly rural Veterans.[18]

[18] Retrieved July 10, 2015 from http://www.ruralhealth.va.gov/resource-centers/central/comanagement-toolkit.asp

Table 2-1 compares the benefits of population health oriented model, like what VHA strives to be, and co-managed care models, which may be more similar to the context in which many VAMCs are currently operating.

Table 2-1. Care model benefits

Care Model Benefits	
Population health model[19]	Co-Managed/Dual Use Care[20]
• Fewer emergency department (ED) visits • Reduced hospital admissions • Reduction in specialist utilization • Fewer inpatient hospital days • High return on investment for disease management programs	• Patient preference • Patient has more provider options for care • Higher patient access to care • More continuity of care for families (as families could receive care from one common provider) • Access to certain very specialized care

With a large portion of the Veteran population receiving outside care, VHA's vision of a population health care model is misaligned with the current state of co-managed care. For VHA to enable successful execution of co-managed care models, it will need to continue to address the issues raised by ORH and to foster relationships with the community, matching infrastructure needs to support these relationships (for example, IT systems that enable more seamless transfer of information).

VHA's population focused care model has key implications for this study. Namely, it dictates various staffing requirements that influence differences between VHA provider staffing levels and the private sector, as well as influence the productivity of its providers. For example, VHA has developed specialized PACTs for unique Veteran health needs, such as geriatrics. These PACTs, termed "geri-PACTs" have unique staffing requirements that may differ from the private sector, influencing both staffing levels and productivity, as support staff is a key driver of productivity. Conversely, because Veterans are given many options for access to care, to include accessing care in the community, providers are sometimes forced into a co-managed care model, which can be significantly less productive as VHA providers lose time looking for test results and care documentation from Veterans' private sector providers. Perhaps more importantly, we provide context of VHA's care model at the start of this report because it is important in reviewing benchmark comparisons of VHA against the private sector, which primarily consists of a volume-driven, non-population health oriented environment, in which

[19] Nielson, M., Langener, B., Zema, C., Hacker, & T. Grundy, P. (2012). Benefits of Implementing the Primary Care Patient-Centered Medical Home: A Review of Cost & Quality Results, 2012. Patient-Centered Primary Care Collaborative. 3-15. Retrieved from https://www.pcpcc.org/sites/default/files/media/benefits_of_implementing_the_primary_care_pcmh.pdf

[20] Borowsky, S. J., & Cowper, D. C. (1999). Dual Use of VA and Non-VA Primary Care. *Journal of General Internal Medicine*, *14*(5), 274–280. doi:10.1046/j.1525-1497.1999.00335.x

providers are incentivized not on patient outcomes or satisfaction, but on volume of services provided.

2.2 Provider Staffing Levels (Objective 1)

In this section, we report the provider staffing levels of VHA, by specialty and specialty grouping, and by both individual facilities and facility complexity level. We also compare VHA physician to Veteran enrollee population ratios with national private sector physician to population ratios. In our analysis of how VHA compares to industry, we considered the differences in the needs of the VA population that may dictate a need for higher or lower ratios of certain physician types (for example, significantly fewer Veterans are female than compared to the private sector population, meaning that there is a lesser need for gynecologists per population than in the private sector). Because a key measure of provider staffing for primary care is the size of a provider's panel (the number of patients for which a particular care team is accountable) we also compared VHA primary care provider panel sizes to benchmarks – since panel size is both an indicator of staffing and productivity, this information is presented later in the report (see Section 2.3.5.5). We conclude this section with a discussion of the challenges which VHA faces in ensuring it has sufficient providers to meet demand.

2.2.1 Summary of VHA provider staffing level findings

The Assessment G team's findings as they relate to VHA provider staffing levels are listed below:

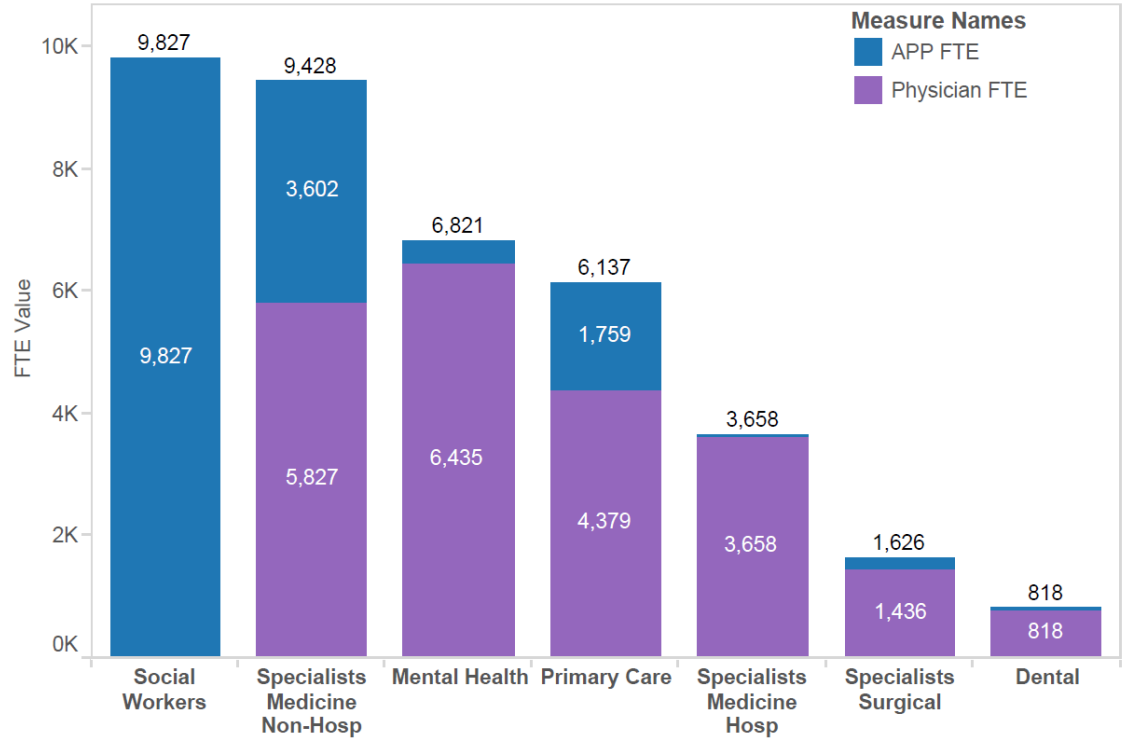
- **Finding 1.** VHA specialties with the highest provider paid FTE levels include medicine specialties, mental health, and primary care, consistent with VHA's care model and the needs of the Veteran population. Social Workers also represent a significant portion of provider FTEs. (see section 2.2.2)
- **Finding 2.** VHA does not systematically track fee-based provider productivity, and does not capture FTE level information for fee-based care providers. (see section 2.2.3)
- **Finding 3.** VHA physician staffing levels per population are, in most specialties, lower than industry ratios. These ratios are not sufficient to establish whether VHA is staffed to meet demand. One factor to consider is that even industry physician supply is not sufficient to meet demand in many specialties. Another factor to consider is that VHA uses APPs extensively, but APPs are not included in industry ratios. (See Section 2.2.6)

2.2.2 Overall provider staffing generally reflects Veteran needs (Finding 1)

VHA specialties with the highest provider FTE levels include medicine specialties, mental health, and primary care, consistent with VHA's care model and the needs of the Veteran population. Social Workers also represent a significant portion of provider FTEs.

Figure 2-1 illustrates that there were 28,490 total FTE employed VHA providers,[21] working at VHA medical centers[22] across VHA (5,938 APPs; 22,552 physicians; and 9,827 social workers) in fiscal year 2014. The FTE total is based on total *paid* FTE which includes vacation, holiday, and other non-working time for which the provider is compensated; note that FTE is not the same as headcount. Contract or "fee-based" providers who provide care within VAMCs as a contractor rather than an employee are omitted from this count, as VHA does not have data available on the FTE level of fee-based providers).

Figure 2-1. Total provider FTEs (Paid) by major grouping, FY 2014[23]



We evaluated VHA provider FTE in more than 30 aggregate specialties, but present them as by major groupings of specialties. Social workers are categorized separately because the VHA data does not allow us to align them to a particular specialty care, and as a separate group are higher than all other major groupings. Specialties with the highest FTE levels include medicine specialties (includes internal medicine hospitalists and specialists), mental health (psychology, psychiatry) and primary care. Many patients require mental health services due to a high prevalence of mental health and psychiatric conditions in the Veteran population such as Post

[21] Providers primarily includes independently licensed practitioners; the complete definition is in Section 1.1.2.

[22] This number excludes those Without Compensation (WOC) providers serving in an administrative capacity at VISN offices and VA Central Office [VACO], who primarily do not provide patient care.

[23] Assessment G team analysis of Provider Labor Detail, provided by VHA OPES, April 9, 2015

Traumatic Stress Disorder (PTSD), which explains the high number of mental health providers.[24] The Assessment A report includes an analysis which shows that Veterans have a significantly higher prevalence of mental health conditions as well as Posttraumatic Stress Disorder (PTSD) than non-Veterans, which further supports the higher number of mental health providers (see also the following section of the report which shows a high proportion of mental health providers per population compared to the private sector).[25] Assessment A also finds that Veterans also have a higher prevalence of undiagnosed health conditions, to include chronic diseases, for several conditions, such as Cancer, Chronic Obstructive Pulmonary Disease, Diabetes, GERD and hearing loss.[26] These types of conditions may require a need for more primary care providers and medicine specialists, which is seen in the predominance of provider FTEs in these categories (when compared to non-hospital based specialists, i.e. radiologists and pathologists, and surgical specialists). This is explored further in section 2.2.6. The low number of dental specialists can be explained by a small number of Veterans eligible to receive dental care from VHA. This is further explained in section 2.2.5

Table 2-2 illustrates the total provider FTE and clinical provider FTE (total FTE aligned to clinical care activities) by specialty. Note that in Table 2-2, primary care is included within internal medicine.

[24] Seal, K.H., Bertenthal, D., Miner, C.R., Sen, S., Marmar, C. (2007). Bringing the War Back Home: Mental Health Disorders Among 103,788 US Veterans Returning From Iraq and Afghanistan Seen at Department of Veterans Affairs Facilities. *Arch Intern Med*. 2007; 167 (5):476-482. doi:10.1001/archinte.167.5.476

[25] Rand Corporation. (2015). Veterans Choice Act Assessment A Final Report.

[26] Ibid.

Table 2-2. Provider FTE (Paid) totals by specialty[27]

Specialty	Total FTE	Clinical FTE
Internal Medicine	5,714	5,148
Psychology	3,901	3,363
Psychiatry	2,534	2,193
Radiology	969	831
Optometry	660	615
Anesthesiology	683	614
Emergency Medicine	548	508
Cardiology	590	483
Physical Medicine & Rehabilit..	524	429
Surgery	517	418
Neurology	493	362
Critical Care / Pulmonary Dise..	481	351
Geriatric Medicine	449	338
Podiatry	361	336
Gastroenterology	422	328
Pathology	404	315
Ophthalmology	332	288
Orthopaedic Surgery	307	280
Hematology-Oncology	333	264
Urology	261	228
Nephrology	275	186
Infectious Disease	245	144
Endocrinology	218	144
Otolaryngology	155	134
Dermatology	162	126
Vascular Surgery	141	112
Rheumatology	152	105
Thoracic Surgery	103	83
Obstetrics & Gynecology	77	71
Plastic Surgery	79	70
Preventive Medicine	72	62
Neurological Surgery	67	55
Pain Medicine	55	49
Chiropracty	47	43
Allergy and Immunology	32	26
Grand Total	22,363	19,102

2.2.3 VHA has limited information on fee-based providers (Finding 2)

VHA does not systematically track fee-based provider productivity, and does not capture FTE level information for fee-based care providers.

Providers who work in VAMCs as non-employees on a contract basis, termed fee-based providers, are not included in staffing information maintained by VHA. More specifically, VHA

[27] Assessment G team analysis of Provider Labor Detail, provided by VHA OPES, April 9, 2015

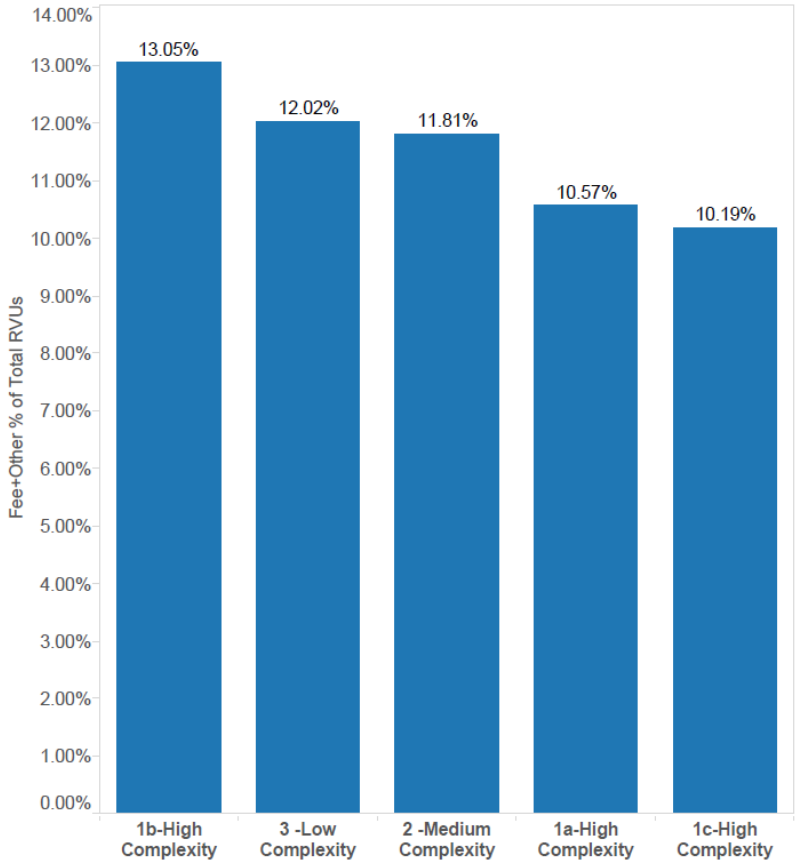
does not keep total FTE data for fee-based providers,[28] nor does VHA systematically track the productivity of these providers. VHA also does not have this information on providers who may generate workload but who do not have a labor mapping. VHA terms these providers "without compensation," or "WOC" providers, and they include providers who may, for example, work in an administrative capacity at VHA Central Office, do not have a labor mapping, yet work a few hours per month as a provider seeing patients at a nearby medical center. It could also include providers with a labor mapping at one facility, but who see patients sometimes at another facility and this time is not accounted for. For the purposes of this section, we refer to these providers as fee-based providers and other providers without a labor mapping. VHA does have information on the encounters and wRVUs generated by this part of the workforce; however, without knowing how many hours these providers spend generating these wRVUs, it is difficult to reliably determine how productive they are. OPES has developed a methodology for imputing presumed FTE levels to include these providers in internal VHA reports, which, given the available information, may be a best practice.

For our assessment, we determined the best course of action was to eliminate these key members of the provider workforce because rather than to make assumptions about the FTE levels. As such, fee-based providers and other providers without a labor mapping (those whom we do not know how many hours they work to generate wRVUs) are excluded from the scope of this report. Although the proportion of the workforce that these providers comprise is unknown, they do produce nine percent of the wRVUs generated across all of VHA, with a higher contribution in certain specialties. The lack of transparency around these providers' time represents a missed opportunity for VHA to better understand their performance relative to VHA employed providers and potential opportunities to improve productivity and reduce costs. It also limits the ability to have a comprehensive picture of the true provider workforce.

Figure 2-2 shows the proportion of total workload generated by fee/other providers (those who do not have a labor mapping) by facility complexity level. Overall, the proportion of workload generated by these providers is relatively consistent across facility complexity levels at approximately nine percent (13 percent for physician only workload and six percent for APPs only), with the exception that complexity level 1b facilities appear slightly higher.

[28] Fee-based providers work as a contractor, typically on a fee-for-service basis, providing care in a VAMC. These providers are not non-VA care providers in the community who are paid through various VHA purchased care contracting mechanisms.

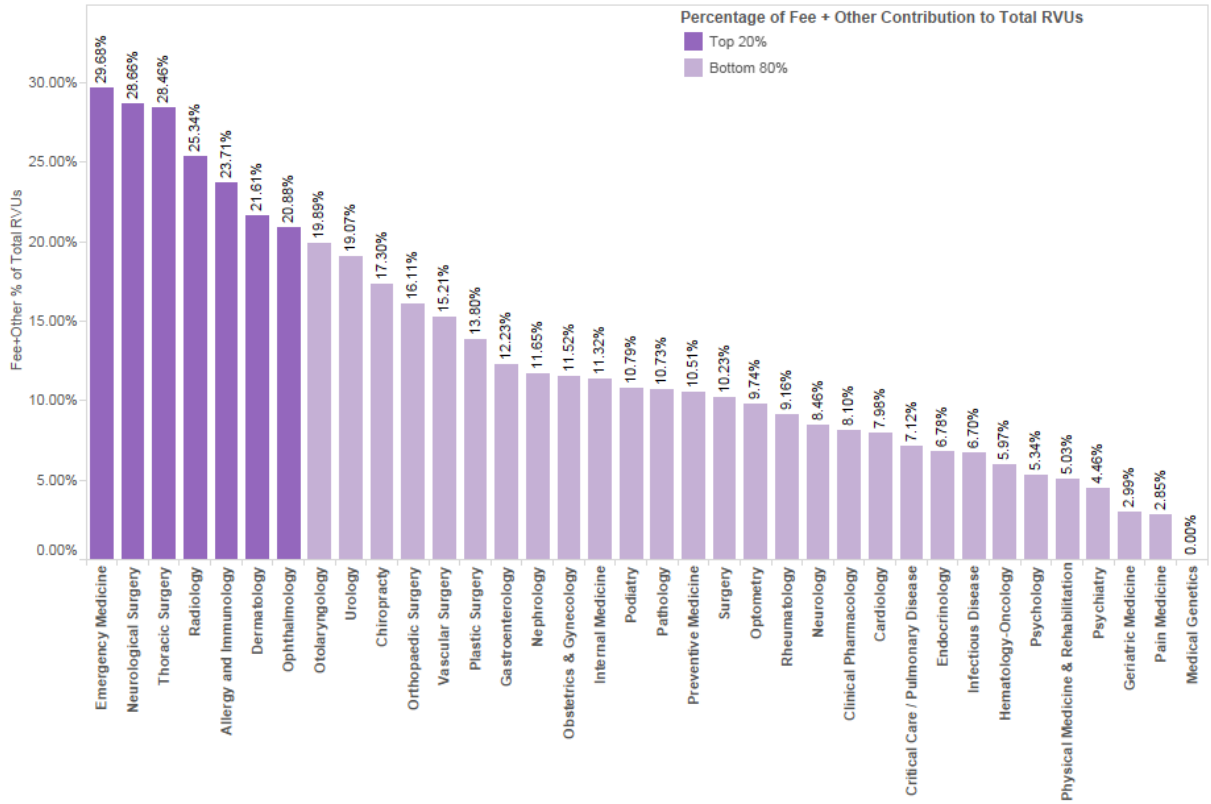
Figure 2-2. Proportion of wRVUs generated by non-labor mapped providers[29]



Although the overall proportion of workload generated by these providers (relative to wRVUs generated by all providers) is low, in some facilities, these providers may constitute an entire specialty or large portion of a specialty's provider workforce. More specifically, (in certain specialties), the proportion of total wRVU-based productivity generated by fee-based and other non-labor mapped providers is significantly higher. Figure 2-3 shows the proportion of total wRVUs which are generated by fee-based providers and other providers without a labor mapping, for specialties with the highest proportion of wRVUs generated by these providers.

[29] Assessment G analysis of Provider Detail FY14, provided by VHA OPES, February 26, 2015.

Figure 2-3. Proportion of wRVUs generated by non-labor mapped providers by specialty[30]



[30] Assessment G analysis of Provider Detail FY14, provided by VHA OPES, February 26, 2015

Figure 2-3 illustrates that fee-based providers and other non-labor mapped providers appear to be used more widely in emergency departments, as there is a higher proportion of wRVUs generated by them, given total emergency medicine provider wRVUs. Of note, anesthesia was excluded from this figure as anesthesiologist productivity is not measured only by wRVUs. Other specialties with a high proportion of wRVUs generated by fee-based and other non-labor mapped providers may reflect that certain specialties require augmentation with additional support to meet demand (dermatology, ophthalmology, otolaryngology) or use of these providers in lieu of hiring VHA employed providers for specialties with lower demand (neurological surgery, thoracic surgery).

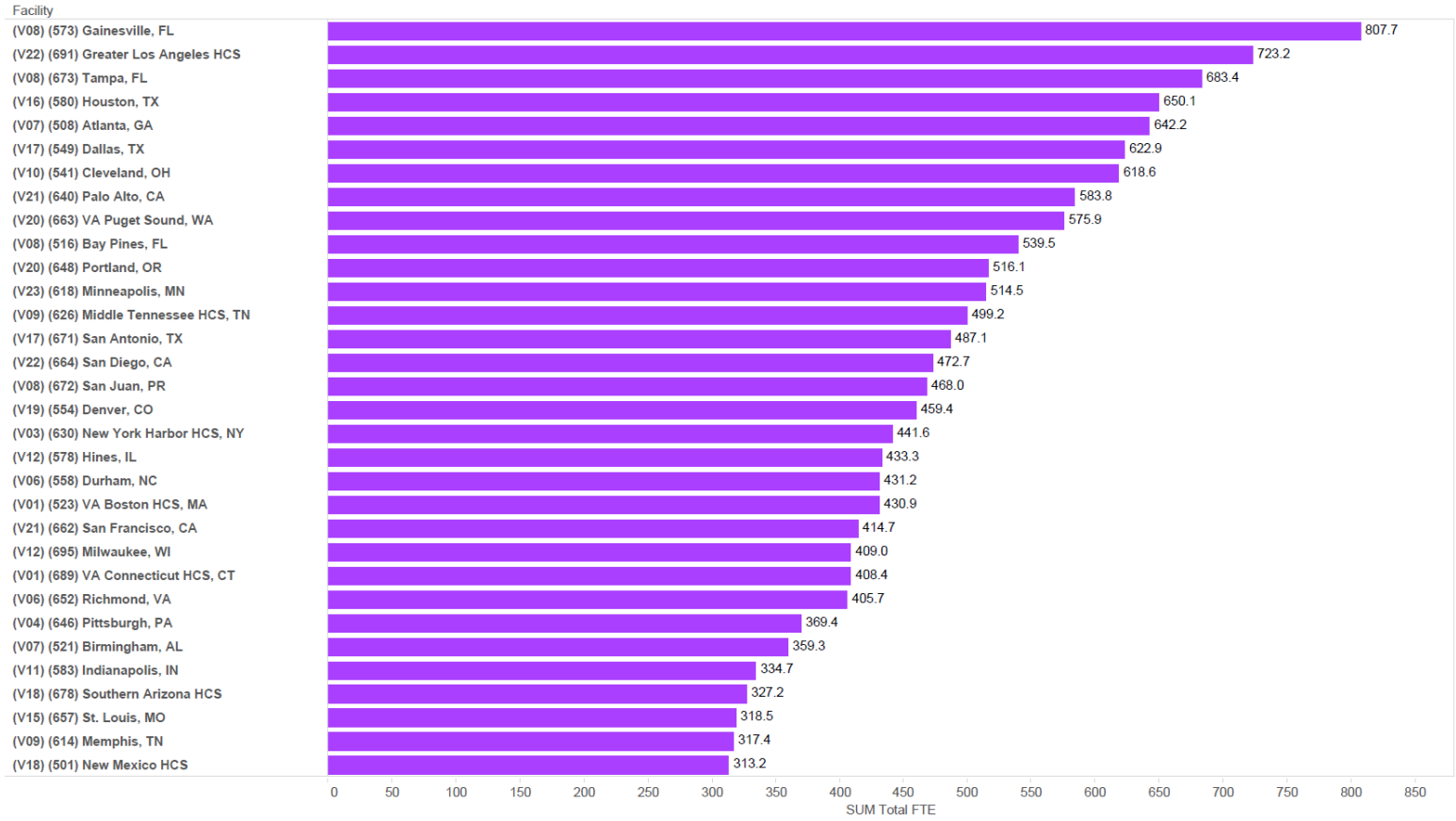
"*There is a shortage of ophthalmologists, hospitalists, emergency medicine physicians, gastroenterologists, and psychologists; these positions are difficult to recruit and are currently filled by fee-for-service contracted providers.*" - Facility leader at a rural VAMC

Some of these specialties may also be specialties that are more difficult to recruit into VHA due to larger differences in earning potential. We would recommend VHA consider a further examination of the performance of, use of, and impact of fee-based providers across VHA to better understand how they are being used, whether their usage is cost effective and the appropriate scenarios in which to augment the provider workforce with fee-based providers.

2.2.4 Provider staffing levels vary between VA medical centers

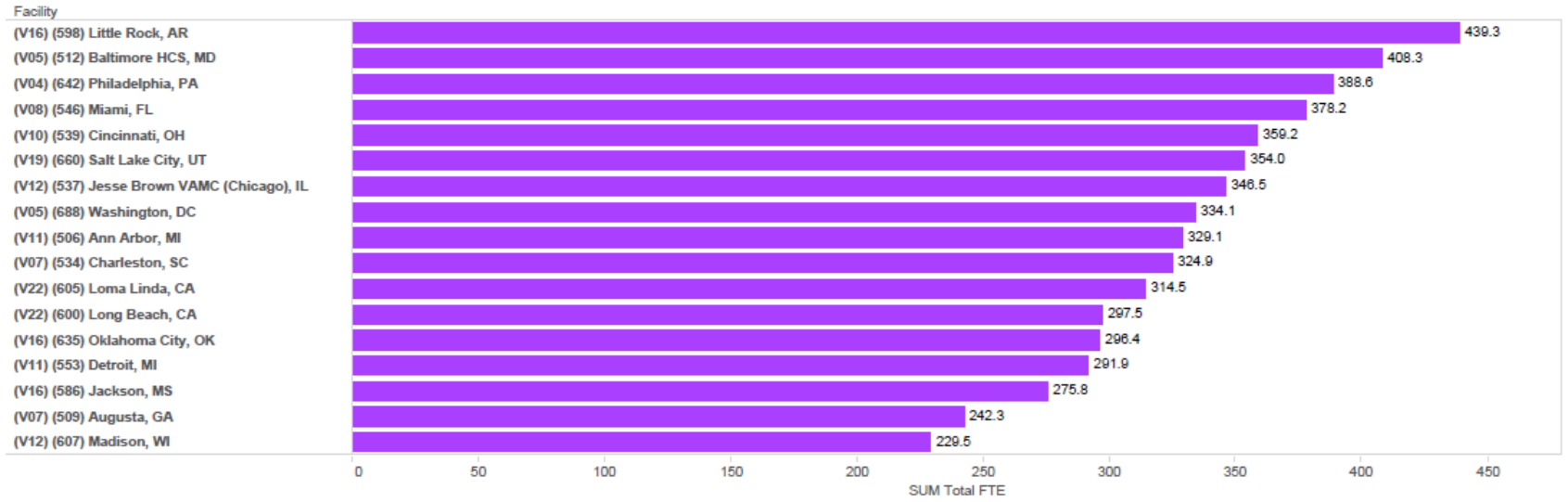
Figure 2-4 through Figure 2-8 depict the total quantity of provider FTE (Paid) in each facility. The facilities are sorted by facility complexity level. The highest range of FTE raises dramatically according to the complexity level with the maximum FTE of a complexity level 1a facility over 800 FTE and the maximum FTE of a complexity level 3 facility just under 200 FTE. This is not surprising since higher complexity facilities typically see a much higher volume of patients.

Figure 2-4. Total provider FTEs (Paid), by facility, at level 1a facilities[31]



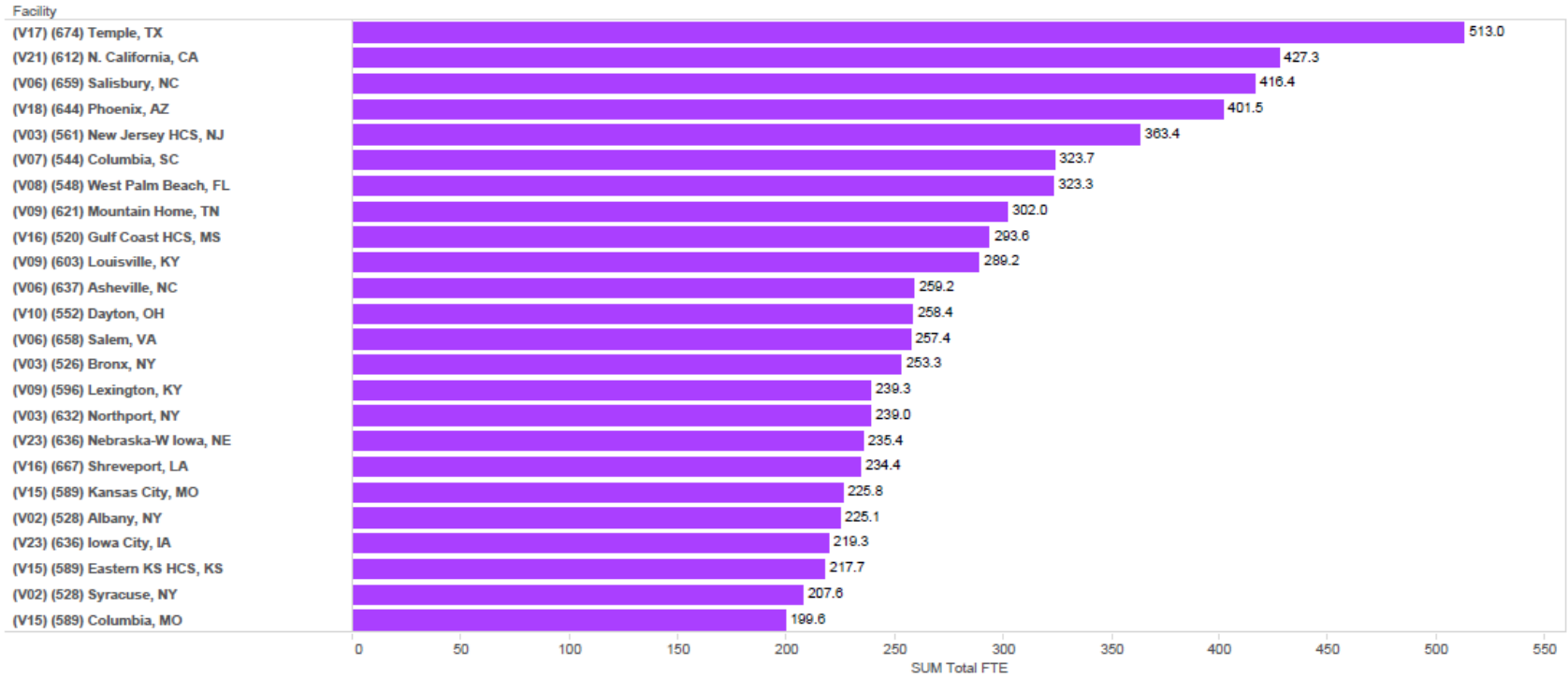
[31] Assessment G team analysis of Provider Labor Detail FY14, provided by VHA OPES, April 9, 2015. Complexity level derived from VHA FY11 facility complexity level designations.

Figure 2-5. Total provider FTEs (Paid), by facility at level 1b facilities[32]



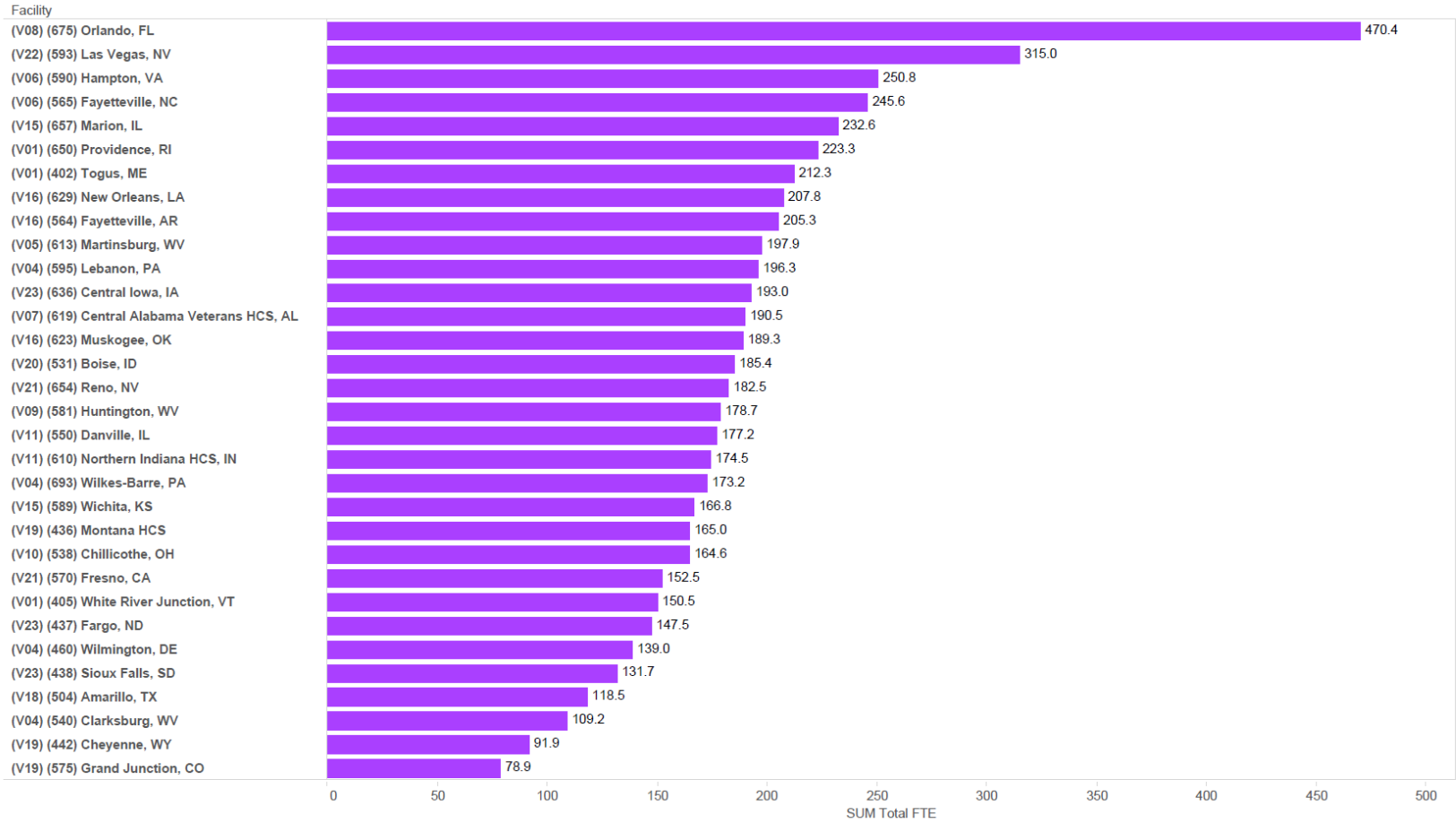
[32] Assessment G team analysis of Provider Labor Detail FY14, provided by VHA OPES, April 9, 2015. Complexity level derived from VHA FY11 facility complexity level designations.

Figure 2-6. Total provider FTEs (Paid), by facility at level 1c facilities[33]



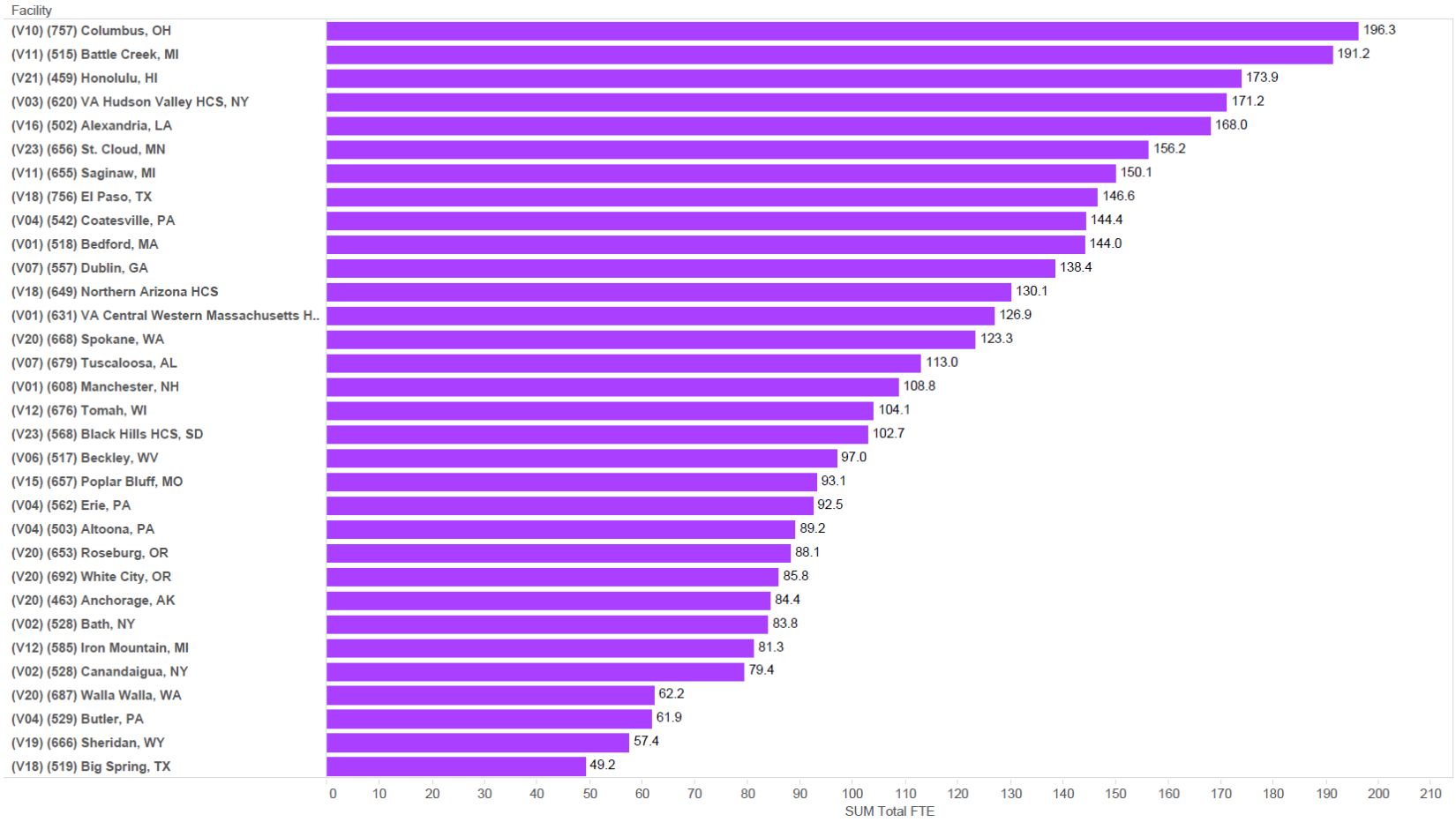
[33] Assessment G team analysis of Provider Labor Detail FY14, provided by VHA OPES, April 9, 2015. Complexity level derived from VHA FY11 facility complexity level designations.

Figure 2-7. Total provider FTEs (Paid), by facility at level 2 facilities[34]



[34] Assessment G team analysis of Provider Labor Detail FY14, provided by VHA OPES, April 9, 2015. Complexity level derived from VHA FY11 facility complexity level designations.

Figure 2-8. Total provider FTEs (Paid), by facility at level 3 facilities[35]



[35] Assessment G team analysis of Provider Labor Detail FY14, provided by VHA OPES, April 9, 2015. Complexity level derived from VHA FY11 facility complexity level designations.

2.2.5 VHA dental staffing reflects unique Veteran needs for sub-specialists

The goal of VHA Dental Services is to provide high quality, cost-effective and evidence-based dental treatment to eligible Veterans.[36] The majority of Veterans are not eligible for dental care; however, of the 1.7 million Veterans who are, approximately 450,000 unique Veterans receive dental care each year from the approximately 818 dental Worked FTEs employed at VA medical centers across the country.[37] Staffing in VHA dental clinics includes dentists and dental subspecialists (general dentistry, oral and maxillofacial pathology, radiology surgery, endodontics, periodontics, and prosthodontics). Dental hygienists, dental assistants, and dental laboratory technicians provide essential support in operating VHA dental clinics.

Many dental specialists are employed on a part-time basis, with the average specialist in FY 2014 being employed as a 0.55 total FTE per VHA staffing and productivity data provided by VHA. This is not surprising given the low number of patients served and spread across the country. Most major facilities offer dental care,[38] though the demand at any given facility may not be high enough to warrant a full time dental specialist provider.

Comparisons between VHA staffing levels and private industry are difficult to model accurately. There is not a well-aligned published comparison group considering the unique dental population of VHA as well as the heavy inclusion of teaching and residency programs. However, it is possible to draw some comparisons to private industry while keeping these limitations in mind.

- In examining the breakout of specialists within the dental workforce, VHA has a higher proportion of specialists compared to industry norms (25 percent of VHA dental workforce compared to 18 percent of the private sector workforce, according to ADA data).
- Correspondingly, VHA's general practice dentists make up 75 percent of their workforce, compared to the private sector where general practice providers make up closer to 82 percent.[39]
- When examining specific specialties, VHA staffs a significantly higher proportion of prosthodontists compared to the proportion seen in the private workforce. In the private sector, there is a larger proportion of orthodontists in the community vs. the proportion staffed at VHA. This corresponds with the differences in the patient populations – VHA patients are generally older, and possibly possess combat related injuries, versus a private sector population that includes children (with a higher demand for orthodontics, for example), and adults seeking cosmetic dental services.

[36] U.S. Department of Veterans Affairs. (2013). *VHA Handbook 1130.01*, Veterans Health Administration Dental Program. p1. Retrieved from http://www.va.gov/VHAPUBLICATIONS/ViewPublication.asp?pub_ID=2867

[37] Interview with VHA Dental Program, December 30, 2014 and January 5, 2015.

[38] Ibid.

[39] ADA. (2010). 2010 American Dental Association Survey of Dental Practices: Characteristics of Dentists in Their Private Practices and Their Patients. p36. Retrieved from http://www.ada.org/en/publications

Otherwise, the overall breakdown of the specialist work force to total workforce is comparable between VHA and the community. In Figure 2-1 we display overall FTE and clinical FTE figures per VHA specialty, and in Figure 2-9 we show this comparison between VHA dental providers and private sector providers (comparison data comes from the ADA).[40]

Table 2-3. FY14 Dental Worked FTE levels[41]

	VHA Dental Specialty	Total FTEs	Clinical FTEs
1	Dental Public Health	6	5
2	Endodontics	10	9
	General Practice*	610	525
3	Oral and Maxillofacial Pathology	5	5
4	Oral and Maxillofacial Radiology	2	1
5	Oral and Maxillofacial Surgery	52	44
6	Orthodontics and Dentofacial Orthopedics	3	2
7	Periodontics	41	33
8	Prosthodontics	83	72
9	Oral and Maxillofacial Surgery – OMFS	6	5
	Total	**818**	**701**

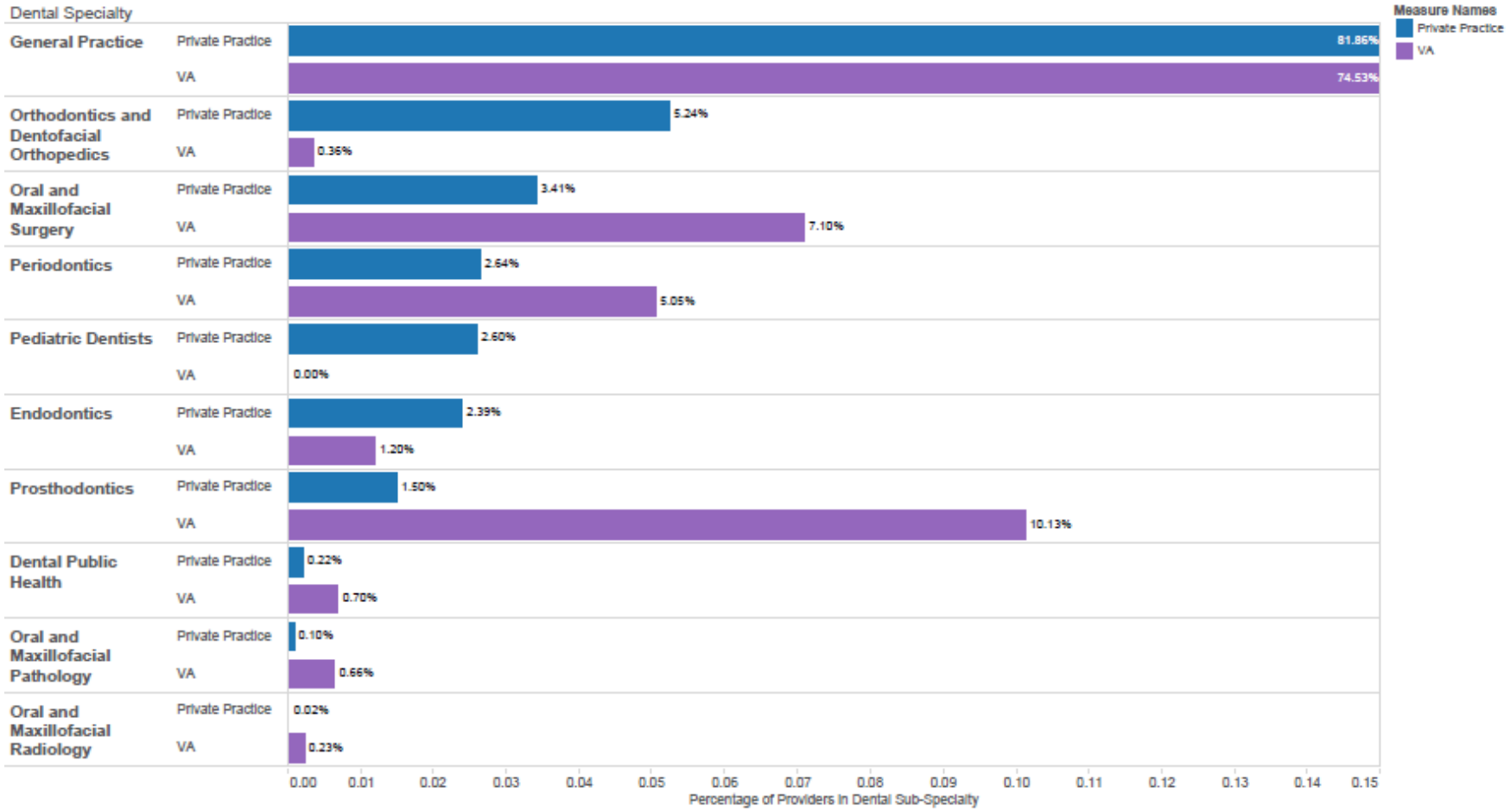
**"Dentists – General Practice" and "Dentists – Not Specified" from our VHA data set were combined into a single "General Practice" category since they both represented non-specialty care Dentists.*

**Each specialty total FTE and clinical FTE are rounded to the nearest whole FTE. Totals may not add up perfectly due to rounding. FTE calculations based on worked hours.*

[40] Ibid.

[41] Analysis of aggregate data on Dental FTEEs for FY14, 201G_FY14Aggregate Dentist.xls, provided by VHA Office of Dentistry, April 13, 2015.

Figure 2-9. Dental specialty staffing comparison between private sector and VHA[42]



[42] Analysis of aggregate data on Dental FTEEs for FY14, 201G_FY14Aggregate Dentist.xls, provided by VHA Office of Dentistry, April 13, 2015.

2.2.6 VHA physician staffing per population is lower than industry (Finding 3)

VHA physician staffing levels per population are, in most specialties, lower than industry ratios. These ratios are not sufficient to establish whether VHA is staffed to meet demand. One factor to consider is that even industry physician supply is not sufficient to meet demand in many specialties. Another factor to consider is that VHA uses APPs extensively, but APPs are not included in industry ratios.

The physician to population analysis using the Truven Health Analytics Report and VHA Physician FTE per enrollee indicates that VHA is marginally understaffed compared to the private sector. Furthermore, Truven data on physician demand indicate that the private sector is understaffed to meet its demand in 12 out of 34 specialties – in other words, even the private sector supply, in several specialties, are not sufficient to meet demand.[43] Comparisons presented in this section should not be used as an indicator of appropriateness or ability to meet demand, as we did not assess the demand for physicians in VHA. Additionally, physicians are only part of the provider workforce. We did not include the other key members of the provider workforce, APPs, because there is no comparison data set, and because VHA uses APPs extensively (they make up more than 20 percent of the total provider workforce, when social workers are excluded).[44]

We compared the ratio of VHA's employed physicians (using paid physician staffing levels from FY 2014) and the Veteran enrollee population to the physician supply (FTE) from the Truven Health Analytics report,[45] based on robust internal Truven physician FTE supply databases from 2014. The Truven supply is calculated as the number of practicing physicians by zip code, specialty and site of service. The supply was then aggregated to the national level and divided per 100,000 population.[46] Providers known to be assigned to VAMCs were removed from the Truven FTE supply. Future analyses may consider comparing VHA ratios at the zip code level as well, since it may reveal geographic (for example, urban versus rural) patterns of under- or over-staffing. Initially we considered several other published physician to population ratios; since the Truven data was most recent, we analyzed VHA against it rather than the others (additional detail is found in the methodology on other ratios reviewed).

The Truven ratio is calculated as the supply of physicians relative to 100,000 population per specialty (using 2014 data). The VHA ratio is calculated as the number of physician FTE to the 2014 Veteran enrollee population (total enrollees is 9,111,955)[47] per specialty. We applied the Truven ratios to the VHA enrollee population using a multiplier to calculate a Truven

[43] Truven Health Analytics Population Planning Data Module, February 2015. © 2015 Truven Health Analytics Inc.

[44] Assessment G team analysis of VHA Provider FTE data, see Section 2.2.2 for additional detail.

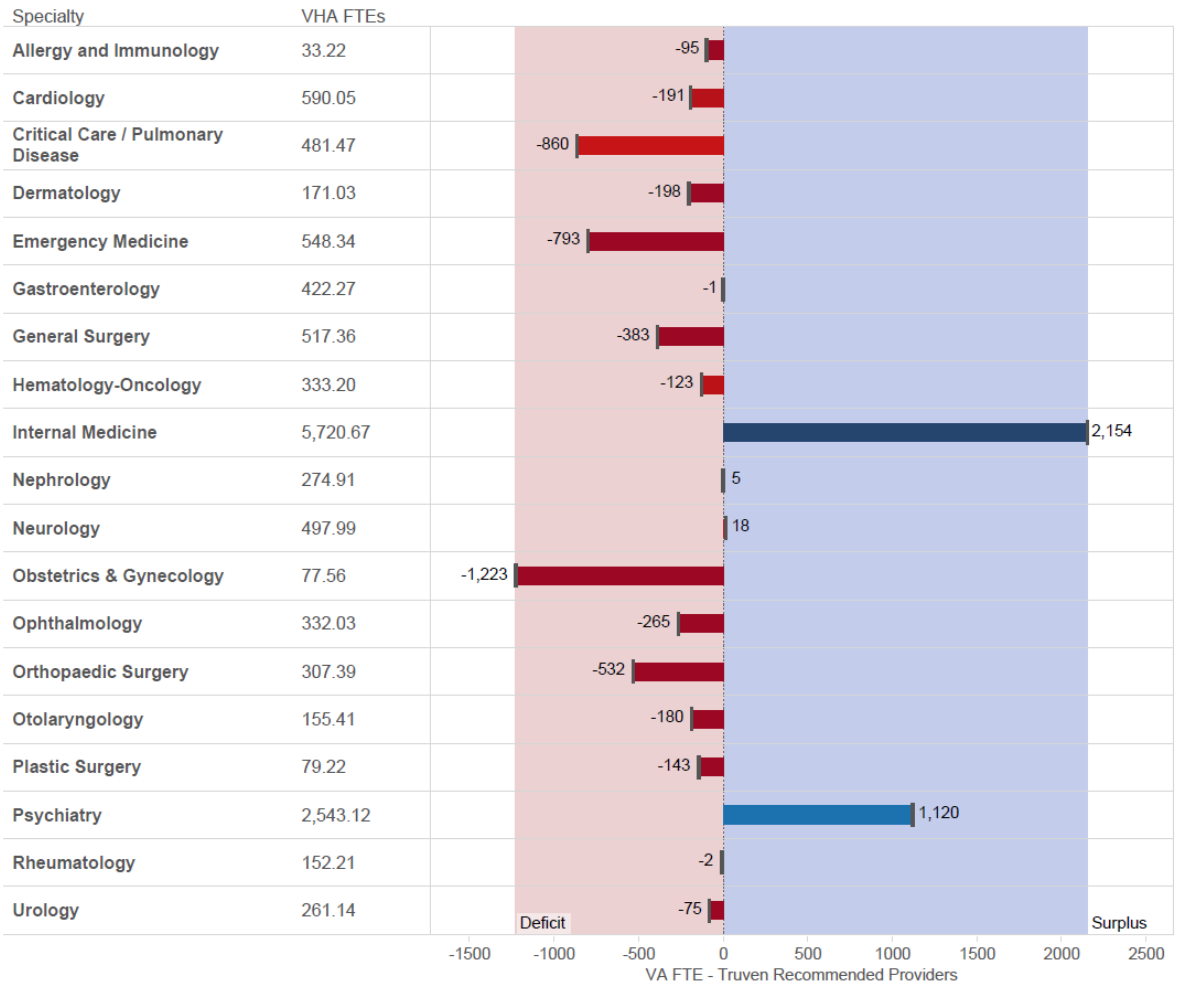
[45] Truven Health Analytics Population Planning Data Module, February 2015. © 2015 Truven Health Analytics Inc.

[46] Truven Health Analytics acquires all of its demographic data from The Nielsen Company including 2010, 2014, and 2019 statistics for every ZIP Code in the United States. Nielsen bases their estimates on products of the United States Census Bureau, including the 2010 Census Summary File 1 (SF1).

[47] Bagalman, Erin. (2014) The Number of Veterans That Use VA Health Care Services: A Fact Sheet. p3. Congressional Research Service. Retrieved from https://www.fas.org/sgp/crs/misc/R43579.pdf

'recommended providers' quantity. We subtracted the VHA physician FTE supply levels from the recommended Truven provider quantity and analyzed the differences. With the exception of Internal Medicine and Psychiatry, VHA exhibited lower physician ratios than the Truven industry ratios of physicians per the US population. Figure 2-10 shows the difference in the benchmarked ratio between VHA physician staffing and the Truven Health Analytics ratio per specialty. Of note, since these data exclude non-labor mapped providers (for example, contract or fee-based providers), some of these ratios may not reflect a complete staffing picture where there is a greater presence of contract or fee-based providers.

Figure 2-10. Difference between VHA physician staffing and Truven Health Analytics ratio[48]



We also note the several key observations from this analysis:

[48] Assessment G analysis of Provider Labor Detail FY14, provided by VHA OPES, April 9, 2015 (for provider FTE); Bagalman, Erin. (2014) The Number of Veterans That Use VA Health Care Services: A Fact Sheet. p3. Congressional Research Service. Retrieved from https://www.fas.org/sgp/crs/misc/R43579.pdf (for VHA enrollee population); and Truven Health Analytics Population Planning Data Module, February 2015. © 2015 Truven Health Analytics Inc. (for comparison benchmark).

- Notably, VHA has significantly more physicians per population in internal medicine and psychiatry. This is expected given VHA's care model and population needs; internal medicine includes primary care providers, and VHA has a population health focused care model which promotes access to Primary Care and therefore Internal Medicine providers (this high number of primary care providers is also seen in the section above on staffing levels). VHA also makes considerable effort to respond to their mental health patients as quickly as possible. In many facilities, this effort translates into guaranteed appointments for walk-ins seeking mental health care.[49] A small proportion of total wRVUs generated in psychiatry are generated by contract and fee-based providers, or others without a labor mapping (who are not included in the total count of provider FTE in this comparison); therefore, their impact would be low.
- On the lower ratio end, our team expected and confirmed that VHA has fewer obstetricians and gynecological physicians than industry recommendations, attributable largely to the smaller proportion of women to men in the VHA Enrollee population. According to the RAND Assessment A (demographics) analysis. More than 93 percent of Veterans are men compared with 40.5 percent of civilians, per the Medical Expenditure Panel Survey.[50] Since 11.5 percent of total obstetrics and gynecology wRVUs are generated by contract and fee-based providers, it is possible that this also makes the VA physician supply appear lower.
- Figure 2-10 also shows that the ratio of VHA emergency medicine physicians per 100,000 enrollees appears to be significantly lower than the Truven ratio. The Assessment G team believes this may be due to a higher proportion of fee-based and other non-labor mapped physicians (who are excluded from this analysis) supporting VHA's emergency departments; in other words, in this particular specialty, the ratio below does not comprehensively capture the true staffing ratio due to fee-based providers making up a more significant part of the care delivery team in emergency departments (see Section 2.2.3). More specifically, more than 29 percent of all wRVUs generated by emergency medicine providers are generated by contract or fee-based providers.
- The higher proportion of fee-based and other non-labor mapped physicians employed in the VHA specialties of orthopedic surgery, ophthalmology, dermatology and allergy and immunology may also account for lower ratios of these physicians compared with the Truven benchmark.

Our charge was to assess how VHA compares to the private sector on staffing, rather than to assess whether physician supply is sufficient to meet patient demand. As we note above, these ratios are not sufficient to establish whether VHA is staffed to meet demand. More specifically, there are several limitations of making these types of comparisons for the purpose of assessing supply adequacy:

[49] Observational data gathered from site visits.

[50] Rand Corporation. (2015). Veterans Choice Act Assessment A Final Report.

- The Veteran population is not similar to the general civilian population; Veterans have different (and sometimes unique) health needs due to differences in demographic composition, military experiences, preexisting health conditions, and health behaviors.[51] As such, there is no single population or benchmark data set comparable to Veteran enrollees seeking care from VAMCs.
- The comparisons we made do not consider geographic differences, since we could only report data aggregated nationally; a more in depth study would need to consider local demand and demographic shifting patterns to reflect where demand is.
- Making such comparisons is further complicated by the complexity in measuring demand for services (VHA is a "leaky" system - the majority of Veteran enrolled users of VA medical care seek care outside the system), and the recent implementation of the Choice Card Program, which allows Veterans even greater access to care outside VHA, makes it difficult to tie a population to a medical center or particular region to calculate more specific ratios which tie patients to the specific providers who may treat them. This is further detailed in Section 2.1.
- Additionally, there is no single benchmark data set that comprehensively captures the full provider workforce; available provider staffing ratios tend only to include physicians. Considering that APPs make up 20 percent of the total provider population at VHA (excluding social workers), this is a limitation of these comparisons. Fee-based providers also cannot be quantified as part of the comparison, even though they serve as key members of the provider workforce within VHA and produce nine percent of the workload. Lastly, available benchmark physician to population ratios are all relatively dated and may not reflect the current needs of populations.

We recommend that VHA consider improvements to its current demand forecasting capabilities (See Assessment A), as well as to data that more comprehensively reflects the true supply of the provider workforce. With accurate, real time data on both the supply and demand, VHA would be able to understand whether its current staffing is appropriate for the population it seeks to serve. We also recommend that rather than comparing to dissimilar civilian populations by using private sector ratios which only illustrate a comparison, VHA and Congress should focus on comparing VHA demand to VHA supply using analytic models to determine whether staffing is appropriate to meet demand.

2.2.7 VHA struggles to fill provider vacancies

VHA is struggling to fill its provider vacancies. Provider shortages, in some specialties are a nationwide challenge that many health care systems are currently grappling with, making for an even more competitive provider hiring landscape. To add to the challenge, VHA has lengthy

[51] For additional information on this topic, please see the Veterans Choice Act Assessment A Final Report, conducted by the RAND Corporation.

hiring processes and offers potential candidates a lower earning potential, further limiting competitiveness for top talent in the marketplace.

As of January 6, 2015, VHA had 16,995 vacancies, to include providers and clinical support staff- that have been open for over 180 days. (Section 301 report, p. 9)[52] As described by McKinsey & Company in the Assessment F report, VHA's vacancy rates are generally higher than their private sector benchmarks, ranging from less than a 3 percent difference for physicians and nurses, to a 9 percent difference for pharmacists.[53] Some VISNs have fewer than 300 vacancies, while other VISNs had over 1,000 vacancies.[54] The number of provider vacancies is even more compelling. In some VISNs, the number of provider staff vacancies is equivalent to 25 percent of providers in the facility.[55] In fiscal year 2014, 24 percent of total VHA vacancies were for providers (excluding nurse practitioners and nurse midwives).[56] VHA has conducted hiring surges to fill specific vacancies. In 2012, President Barack Obama signed an executive order to increase VHA mental health providers and support staff to fill 2,000 vacancies. Following the conclusion of the initiative, over 4,000 mental health providers were hired.[57]

> *"We need additional providers; we are currently treading water; we are utilizing residents and fee-based providers from the academic affiliate to plug in where there are gaps in staff coverage*." – VAMC Physician

Despite the success of this initiative, VHA continues to struggle to fill vacancies. Overall provider shortages, coupled with burdensome hiring processes, and lower earning potential increase VHA's challenge.

2.2.8 Provider shortages nationwide

The Assessment G team found that physician staffing levels per population are, in most specialties, lower than industry ratios. We frequently heard on our site visits about challenges in staffing to meet demand. Insufficient provider staff in specialty care, primary care, and mental health, can result in patient care delays, over reliance on fee-based providers, disruption to the population health care model, and inefficient clinic operations as too few providers attempt to cover all consults.

[52] Onboard FTE and Turnover by Facility FY14_Data Request N333.xlsx, provided by VHA.

[53] McKinsey & Co. (2015). Veterans Choice Act Assessment F Final Report.

[54] U.S. Department of Veterans Affairs, Veterans Health Administration. (2015). Veterans Access, Choice and Accountability Act Section 301: A Report Assessing the Staffing Needs of Each Medical Facility within the Department of Veterans Affairs.

[55] U.S. Veterans Health Administration. Onboard FTE and Turnover by Facility FY14, VHA Vacancies by Occupation.

[56] Ibid.

[57] U.S. Department of Veterans Affairs. (2014) 2014 Work Force Succession Strategic Plan. Retrieved from http://www.vacareers.va.gov/assets/common/print/2014_VHA_Workforce_Succession_Strategic_Plan_EBook.pdf.

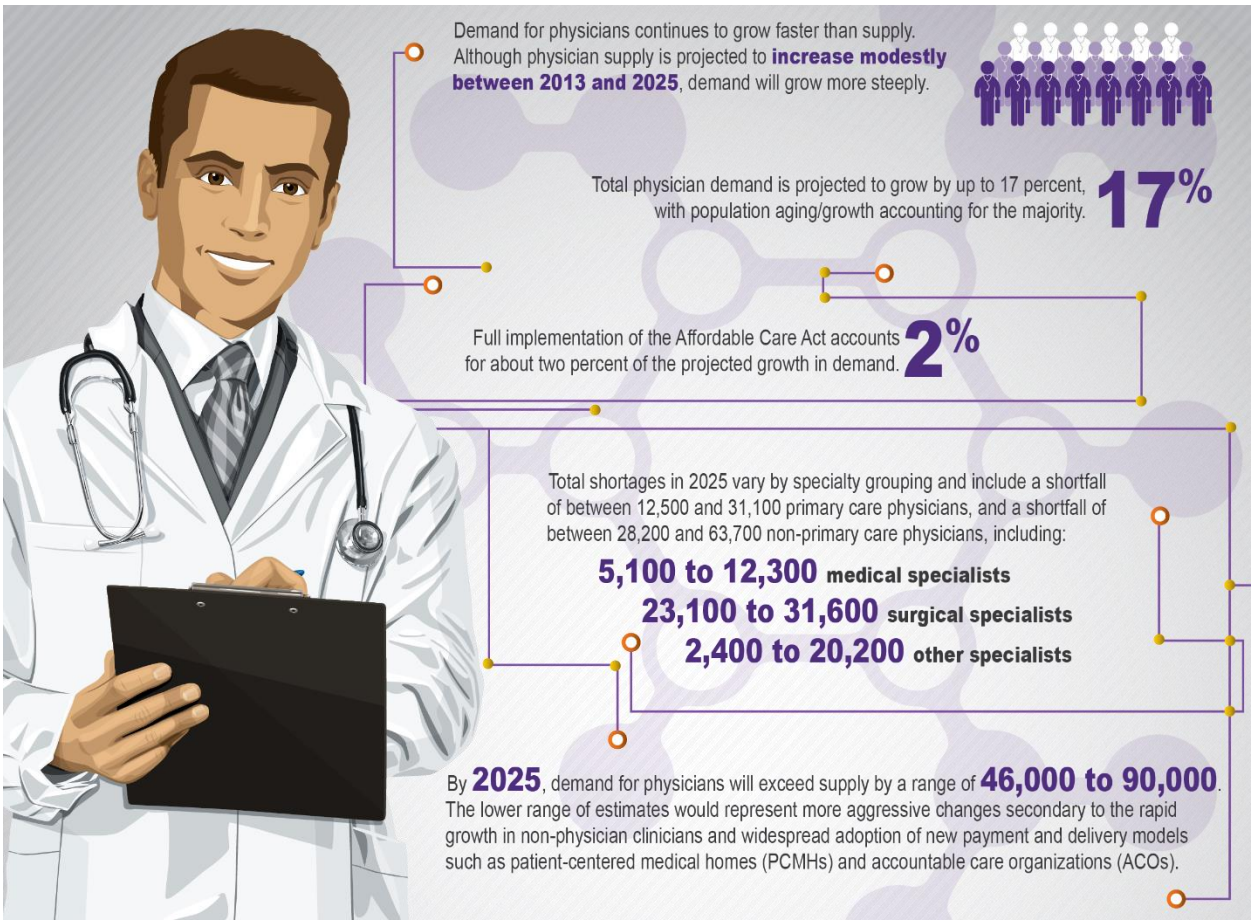
Nation-wide provider shortages in some specialties mean that the challenge VA medical centers face in having enough staff is not unique to VHA. In fact, many specialties in the U.S. have high wait times and poor access as a result of workforces shortages, especially in certain markets; in a 2013 survey, the average cumulative wait time to see a physician for five specialties in 15 markets was 18.5 days, with higher averages in certain specialties for example 28.8 days for dermatology.[58] Further, the number of unfilled provider positions in the U.S. nationwide is projected to grow between 2013 and 2025, based on predicted supply and demand.

Some of these national challenges are outlined in a March 2015 report by the economic modeling and forecasting firm IHS Inc.[59] The physician shortage will persist under every likely scenario that IHS Inc. considered, including increased use of advanced practice nurses (APRNs); greater use of alternate settings such as retail clinics; delayed physician retirement; rapid changes in payment and delivery, for example, accountable care organizations (ACOs) and bundled payments. Addressing the shortage will require a multi-pronged approach that requires innovation in delivery; greater use of technology; improved, efficient use of all health professionals on the care team; and an increase in federal support for residency training. The study's results confirm that no single solution will be sufficient on its own to resolve physician shortages. Because physician training can take up to a decade, a physician shortage in 2025 is a problem that needs to be addressed in 2015. Figure 2-11 presents several of the challenges outlined in the IHS report.

[58] Merritt Hawkins. (2014). Physician Appointment Wait Times and Medicaid and Medicare Acceptance Rates, 2014 Survey. Retrieved from http://www.merritthawkins.com/uploadedFiles/MerrittHawkings/Surveys/mha2014waitsurvPDF.pdf

[59] Association of American Medical Colleges. The Complexities of Physician Supply and Demand: Projections from 2013 to 2025. Retrieved from https://www.aamc.org/download/426260/data/physiciansupplyanddemandthrough2025keyfindings.pdf

Figure 2-11. Physician shortage predictions[60]



Because we did not study VHA future demand projections in relation to supply, we cannot definitively quantify the potential impact of the physician shortage on Veteran access to care. Yet, the IHS findings, particularly when taken in combination with the findings of the previously presented comparison of VHA and private sector physician supply per population ratios, and staffing challenges reported by VAMC leaders on our site visits, illustrate the challenging context in which VHA is operating.

In the following section, we describe some of the specific challenges that VHA faces in ensuring that it has sufficient providers to meet demand; namely, lengthy hiring processes and non-competitive compensation, each of which can contribute to provider shortages in VA medical centers.

2.2.9 Lengthy hiring processes may contribute to provider shortages

VHA's role as a government-administered health system creates unique challenges which other private sector health systems do not typically face. To fulfill its mission, VHA must hire large

[60] Association of American Medical Colleges. The Complexities of Physician Supply and Demand: Projections from 2013 to 2025. Retrieved from https://www.aamc.org/download/428622/data/20150401_projbriefingbio.pdf

numbers of clinicians while simultaneously abiding by federal personnel regulations and statutes. These requirements, among others, lead to lengthy hiring processes, which are often cited by VAMC staff as a significant challenge in recruiting providers and providing timely care to Veterans. In response to section 203 of the Veterans Choice Act, a Northern Virginia Technology Council report stated, "From General Schedule (GS)-5 clerks to senior clinicians, the hiring of needed staff proceeds too slowly. The causes are complex, but much of the delay can be traced to redundant, inconsistent, and inefficient hiring processes."(NVTC, p.12)[61]

"*Recruitment for vacancies are challenging; Recruitment takes approximately 4 months, including USAjobs.gov posting, requirement to post as internal position for 14 days, 5 days to close CERT, manager subsequently reviews for 5 days – only after this is the position reposted as an external position; Because of the delays and lengthy timing, this facility is not competitive for new graduates*." – VAMC Senior leader

VHA does not have an enterprise position management system, which limits the organization's ability to provide quantitative data surrounding the length of the hiring process; however the Assessment G team consistently heard from VHA employees that it can take several months.[62] The McKinsey & Company Assessment F team conducted a more in depth review of the hiring process and timeline, finding that VHA's hiring timeline spans 4-8 months while a typical private sector organization hires staff between 0.5 and 2 months. The Assessment G team notes that the major drivers of the extended VHA hiring time are the human resources (HR) certification process of the applicant's credentials, and the VetPro background check.[63]

"*Recruiting into the VA is challenging - we don't do a good job of advertising and reaching out for provider recruitment. Using USAjobs for recruitment? That is not how recruitment is done in the private sector*." – VAMC Service Line Chief

"*The HR process is incredibly slow, which includes the hiring process; It can take up to six months after selection of a new hire for the hire to actually step foot in a VA facility; This drives away many candidate*s." – VAMC Service Line Chief

Provider and support staff recruitment and hiring challenges were echoed consistently by multiple staff and virtually all medical centers visited by the Assessment G team. VHA is actively taking steps to improve the timeliness of filling vacancies, many of which VHA outlined in its

[61] Northern Virginia Technology Council. (2014). Opportunities to Improve the Scheduling of Medical Exams for America's Veterans: A Report Based On a Review of VA's Scheduling Practices by the Northern Virginia Technology Council (NVTC) Retrieved from http://www.va.gov/opa/choiceact/documents/NVTCFinalReporttoVA-revised3.pdf

[62] As reported during Assessment G site visit interviews.

[63] McKinsey & Co. (2015). Veterans Choice Act Assessment F Final Report

Section 301 response to the Veterans Choice Act,[64] submitted to Congress earlier this year. These efforts include recruitment, retention, and compensation planning efforts, such as:

- Increasing entrance survey participation among new employees and encourage facilities to improve recruitment planning based on findings[65]
- Leveraging the National Recruitment Program to recruit clinical and executive positions via private sector recruiting best practices[66]
- Implementing Pathways Internship Program to increase the pipeline of candidates to VHA's workforce[67]
- Conducting and analyzing the results of exit surveys to improve retention programs[68]
- Utilizing the Education Debt Reeducation and Student Loan Repayment Program[69] to recruit highly skilled employees
- Providing the MyCareer@VA portal to offer long-term career growth tools and development to current VHA employees
- Increasing pay ranges for physicians and dentists who provide direct patient care[70]
- Leverage the Physician and Dentist Steering Committee to develop recommendations for each specialty's pay ranges

The Assessment G site visit teams heard positive feedback on a number of these recruitment and retention programs, as well as indicators of gaps where these programs could be expanded. Specifically, a VAMC service chief suggested that the debt reduction programs were a positive incentive for recruiting both physicians and mid-level providers at his facility. Another VAMC section chief praised the debt reduction programs as a helpful recruitment tool to compensate for the pay disparity between VHA physicians and those in the private sector. The team also heard suggestions for how these programs could be expanded, and suggestions for

[64] U.S. Department of Veterans Affairs, Veterans Health Administration. (2015). Veterans Access, Choice and Accountability Act Section 301: A Report Assessing the Staffing Needs of Each Medical Facility within the Department of Veterans Affairs

[65] Veterans Health Administration. (2014). Interim Workforce and Succession Strategic Plan. Retrieved from http://www.vacareers.va.gov/assets/common/print/2014_VHA_Workforce_Succession_Strategic_Plan_EBook.pdf

[66] U.S. Department of Veterans Affairs, Veterans Health Administration. (2015). Veterans Access, Choice and Accountability Act Section 301: A Report Assessing the Staffing Needs of Each Medical Facility within the Department of Veterans Affairs

[67] U.S. Department of Veterans Affairs. (2014) 2014 Work Force Succession Strategic Plan. Retrieved from http://www.vacareers.va.gov/assets/common/print/2014_VHA_Workforce_Succession_Strategic_Plan_EBook.pdf.

[68] Ibid.

[69] U.S. Department of Veterans Affairs, Veterans Health Administration. (2015). Veterans Access, Choice and Accountability Act Section 301: A Report Assessing the Staffing Needs of Each Medical Facility within the Department of Veterans Affairs.

[70] U.S. Department of Veterans Affairs. (2014) 2014 Work Force Succession Strategic Plan. Retrieved from http://www.vacareers.va.gov/assets/common/print/2014_VHA_Workforce_Succession_Strategic_Plan_EBook.pdf.

improving programs. With respect to areas where VHA should focus in the future, a member of a VAMC leadership team specified that career fulfillment is an essential element in maintaining provider and staff morale, and an area VHA should try to improve.

2.2.10 Less competitive pay may contribute to provider shortages

Provider earning potential for VHA providers is significantly lower for VHA providers than the private sector. While VHA offers, in many cases, greater work life balance, and unique opportunities for research, teaching, and the opportunity to serve a formidable mission to care for our nation's Veterans, the lower salaries may reduce VHA's competitive edge in the marketplace when trying to attract top provider talent.

The Department of Veterans Affairs Health Care Personnel Enhancement Act of 2004 (Pub. L.108-445) established provisions for a new pay system for VHA physicians and dentists consisting of base pay, market pay, and performance pay. The base pay component is set by statute, while market pay is intended to reflect the recruitment and retention needs for the specialty or assignment of a particular physician or dentist at a facility. Performance pay is intended to recognize achievement of specific goals and performance objectives prescribed annually. With the passage of this law, lawmakers set to establish a pay system driven by both market indicators and employee performance, while recognizing employee tenure in VHA.

In accordance with 38 U.S.C. 7431€(I)(A), the Secretary must prescribe Department-wide minimum and maximum amounts of annual pay for physicians and dentists. Further, 38 U.S.C. 7431€(I)(B) allows for the prescription of separate minimum and maximum amounts by specialty designation or assignment.[71] Specific goals and performance objectives, as they pertain to performance pay, are generally developed at the local level. They cover a wide range of categories including research achievements, reduction in wait times, and patient satisfaction. At the conclusion of the fiscal year, the provider's supervisor evaluates the extent to which each goal was demonstrated or achieved by the individual. If performance pay is granted to the provider, it cannot exceed $15,000 or 7.5 percent of his or her salary, whichever is lower.[72]

The most recent update to the annual pay ranges tables was completed in November 2014. As part of the update, VHA identified and utilized survey data from the Association of American Medical Colleges (AAMC), Hospital and Health care Compensation Service, Sullivan, Cotter, and Associates, MGMA, Physician Executive Management Center, and the Survey of Dental Practice published by the ADA. VHA collectively utilized these surveys as benchmarks from which to prescribe annual pay ranges for physicians and dentists across the scope of assignments/specialties within VHA. While aggregating the data, VHA more heavily weighted

[71] U.S. Department of Veterans Affairs. (2014). Notice: Annual Pay Ranges for Physicians and Dentists of the Veterans Health Administration. Retrieved from https://www.federalregister.gov/articles/2014/09/18/2014-22187/annual-pay-ranges-for-physicians-and-dentists-of-the-veterans-health-administration

[72] U.S. Department of Veterans Affairs. (2014). VA Handbook 5007/47. Retrieved from http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=739&FType=2

those surveys which most directly resembled the environment of VHA.[73] In the recent update, some physician and dentist specialty grouping pay tables increased by $20,000 to $35,000 annually. There was no change to pay tables for physicians serving in leadership roles, such as a Veteran Integrated Service Network (VISN) or VAMC Director.[74]

Despite these adjustments, VHA still falls far below the average provider salary ranges for many specialties relative to the industry. Figure 2-12 shows the difference between the VHA-approved physician pay ranges[75] and the MGMA Physician Compensation and Production Survey, which includes average physician salaries, for a subset of specialties. We compared the top salary tier for VHA providers against the MGMA surveyed 90th percentile salaries in dark purple. The figure shows the lowest salary tier for VHA providers against the MGMA surveyed 10th percentile salaries in light pink. A value of zero indicates no difference between VHA top and bottom tier salaries and the private sector. Dark purple peaks below zero highlight the earning potential gap for VHA providers. This graphic does not depict observed top salaries of VHA providers against private sector providers, but offers insight into the earning potential gap between VHA and private sector.

In analyzing the differences in salaries, our team concluded that VHA is often able to provide physicians an entry salary industry comparable or better to industry, but that VHA physicians' earning potential is dramatically below those of their private sector peers. At the top of the salary ranges, VHA providers made less than their counter parts by up to $310,000 and on average, $74,631. The only specialties where VHA physicians made equal to or more than industry averages were anesthesiology, nephrology, ophthalmology, and psychiatry. To see a table with all specialties, please reference Appendix A.

To address staffing shortages, section 301 of the Veterans Choice Act also allows for increased recruitment and appointment of providers.[76] The inability to provide competitive salaries has resulted in difficulties in recruiting these positions, specifically in areas with a high number of outside health care systems, which may decrease Veterans' access to care. VA facilities have come up with creative ways to get around this barrier, most predominantly, using part-time providers or fee-based providers. Providers may be offered more research and teaching time, and/or a dual-affiliation with a neighboring institution to help attract candidates.

Based on site visit interviews and data reviewed, and notwithstanding the fact that many providers choose to work at VHA because of the important mission and culture, compensation

[73] U.S. Department of Veterans Affairs. (2014). VA Handbook 5007/47. Retrieved from http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=739&FType=2.

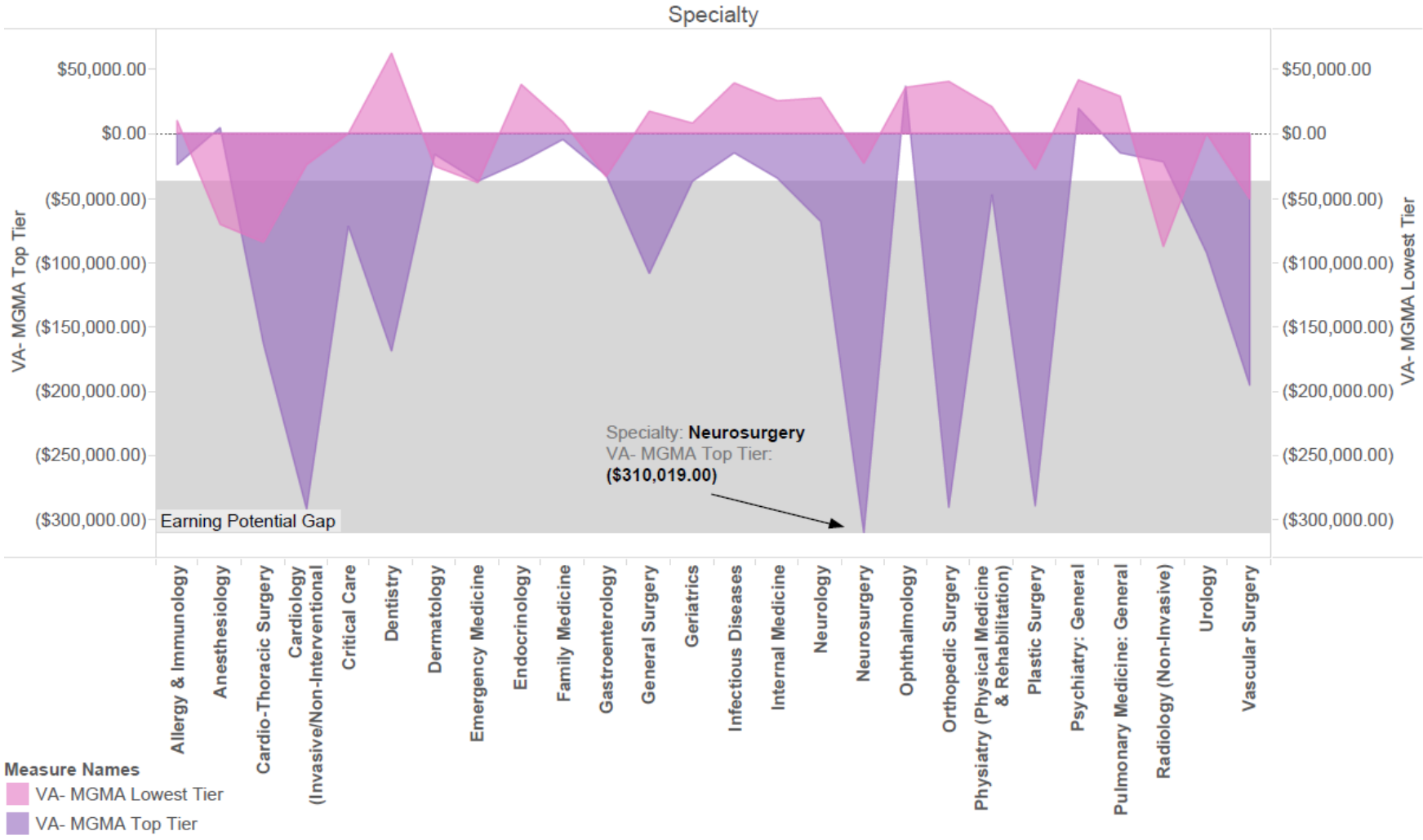
[74] U.S. Department of Veterans Affairs, Veterans Health Administration. (2015). Veterans Access, Choice and Accountability Act Section 301: A Report Assessing the Staffing Needs of Each Medical Facility within the Department of Veterans Affairs.

[75] Assessment G analysis of data from VHA pay tables available at http://www.va.gov/OHRM/Pay/PhysicianDentist/FinalAnnualPayRanges_20150111.pdf and data from MGMA. (2013). Physician Compensation and Production Survey: 2014 Report Based on 2013 Data.

[76] U.S. Department of Veterans Affairs, Veterans Health Administration. (2015). Veterans Access, Choice and Accountability Act Section 301: A Report Assessing the Staffing Needs of Each Medical Facility within the Department of Veterans Affairs.

does seem to be a factor which should be further examined by Congress and VA leadership to understand how much of an impact it has on provider recruitment and retention.

Figure 2-12. VHA provider salary comparison to MGMA



2.3 Provider Productivity (Objective 2)

Comparing the productivity of VHA providers to the private sector requires an understanding of available productivity measures, the limitations of each, available benchmark surveys, and the comparability of benchmark data. Below we summarize productivity measurement in the health care setting, how it is applied as a performance measure, and the use of benchmark data sets.

2.3.1 Productivity measurement is associated with reimbursement

Productivity is a measure of the output, for example, procedures or tests, that can be produced given a certain combination of inputs (number of professional minutes/hours and supplies/resources). Typically, productivity is measured for a specific input, such as labor. It is also possible to consider "system productivity" – the productivity of spending in a hospital, physician practice, or health system – by looking at the output achieved for any given amount of resources devoted to health care services.

- Measurements of productivity generally correspond to the reimbursement system. In the private sector, the common reimbursement models and measures of productivity are based on episodes of care, such as a physician office visit.
- The industry is moving closer to a value based reimbursement system that pays for maintaining and improving the health status of a defined population. As an industry, these reimbursement models and the related performance measures are still in the early stages of development and wide spread acceptance.

A systematic review conducted by Hussey, et al. of the RAND Corporation found that over 97 percent of productivity measures tracked only the utilization of health care services as the output from hospitals and other medical institutions. "Those measures include cost per hospital discharge, cost per outpatient visit, relative value units (RVUs) per physician per month, patient visits per physician per month, average length of stay per discharge, and similar metrics."(McKeller et al., 2013, p2)[77]

2.3.2 Productivity should not be considered in isolation from process and outcome measures

There are several well-defined measures of provider productivity used in the private sector, many of which have robust comparison data sets. Provider productivity measurements offer useful tools for physician compensation package design, administrative decision making (workload management, resource allocation, and cost accounting), or other uses, such as: economic profiling, workforce planning, documenting the level of activity treating patients, or research.

[77] McKellar, R., Chernew, M., & ColucciI, J. (2013). Productivity Measurement in the United States Health System. p2. Retrieved from https://www.newamerica.org/downloads/McKellar_Chernew_Colucci_NAF_10_2013.pdf

Productivity is impacted by a wide range of independent variables to include the patient population and characteristics the organization in which the provider practices. In the private sector, physicians and hospitals operate in a largely fee-for-service environment, creating an incentive to increase utilization of services, and so to increase throughput. In fact, in its 2014 Review of Physician Recruiting Incentives, Merritt Hawkins found that in 57 percent of the physician search assignments it conducted between April 1, 2013 and March 31, 2014, a salary plus a production bonus was the form of compensation offered to physician candidates.[78]

VHA operates closer to a population-based care model where process and outcome measures related to managing patient health becomes a higher priority than procedure based measures of activity; however, there are currently no widely accepted productivity measures based on the population health approach. As the industry migrates from volume-based to value-based care, new measures of provider productivity which consider quality, service, access and outcomes will be critical elements to future performance management and incentive structures.

2.3.3 Provider productivity can be measured in many ways

Specialty care providers are typically measured on caseload or other measures of productivity, whereas primary care providers are typically measured by their panel size. This is because primary care providers typically have a consistent set of the same patients for whom they are accountable to (called a panel), while specialists are more likely to treat patients on a short term basis and have greater fluctuation in unique patients (this set of patients is termed their caseload). Measures of productivity typically used in for specialists include: visits/encounter counts, charges, collections, and work relative value units (wRVUs). Although use of multiple measures provides a more robust picture, the industry standard for benchmarking productivity is wRVUs, especially for specialists. The relative value unit (RVU) system was developed as part of the resource-based relative value scale (RBRVS) by CMS and is currently used as the basis for reimbursement by most third-party payers in the U.S. The RVU system considers three categories that inform the value of health care services: physician work (denoted as work RVU, or, wRVU), practice expense, and malpractice insurance.

The advantage of using wRVUs as a measure of productivity is that they are independent of any dollar amounts involved, so they are not affected by the limitations associated with measuring charges or collections.[79] Another wRVU advantage is that they reflect the acuity of the patient population (subject to accurate and comprehensive coding documentation practices), providing higher value or CPT® Evaluation and Management codes which reflect higher acuity.

[78] The Physicians Foundation. (2014). 2014 Review of Physician and Advanced Practitioner Recruiting Incentives. Merritt-Hawkins Survey Retrieved from http://www.merritthawkins.com/uploadedFiles/MerrittHawkings/Clients/Merritt_Hawkins_2014_Physician_Recruiting_Incentive_Review.pdf

[79] Physician Productivity Paper. Retrieved from http://www.migrantclinician.org/files/resourcebox/PhysicianProductivityDiscussionPaper.pdf

In capitated systems (a capitated model is one in which whole networks of hospitals and physicians band together to receive single fixed monthly payments for enrolled health plan members)[80] and other environments where the emphasis is not on maximizing the number of patient encounters and on coding to the highest CPT® E/M level, wRVUs may not serve as the most appropriate measure of comparison due to misalignment of incentives. In these cases, panel size or the number of encounters per provider may be more appropriate. However, these measures have limitations as measures of comparison. One limitation of panel sizes as a measure of productivity, is that the provider may have little or no control over the size of their panels and it is not a measurement of activity. Another limitation is that comparability is limited unless one can risk adjust for patient acuity, and compare to benchmarks that represent organizations with similar care models. Encounters and visit counts are limited as they do not reflect acuity; however, if providers do not code accurately, acuity would not be reflected completely in wRVU data either.

2.3.4 MGMA and AMGMA are appropriate benchmarks for productivity

The most reputable (most used and have the largest sample sizes) are: MGMA's Physician Compensation and Production Survey, MGMA's Academic Practice Compensation and Production Survey [AMGMA]), and AMGA Medical Group Compensation and Financial Survey.

- MGMA Physician Compensation and Production Survey:[81] The survey includes both a single specialty practice edition and a multi-specialty practice edition. The survey includes 4,197 medical groups and 66,299 providers (2,518 multispecialty groups representing more than 44,000 providers). The survey is conducted across primary care and specialty care and a wide range of geographies. This survey is the most commonly used survey of all existing physician performance and compensation benchmarking options. It includes data that highlight staffing, cost, and productivity data points.
- MGMA Academic Practice Compensation and Production Survey:[82] MGMA's academic survey (referred to as AMGMA) includes 20,876 providers and 1,996 administrative staff. This survey includes those multi-mission providers that include clinical, research and teaching time. This survey group, while smaller than MGMA, is in some important aspects most similar to the VA health care system, especially VHA's most complex and affiliated (level 1 and 2) medical centers. This survey is also valuable to understanding the relationship between clinical production and additional responsibilities held by academics such as research and teaching.

[80] Capitation Models. (2015, June 4).Retrieved from http://www.hci3.org/content/capitation-models.

[81] MGMA. (2013).Physician Compensation and Production Survey: 2014 Report Based on 2013 Data. Retrieved from http://www.mgma.com/Libraries/Assets/Key-Findings-PhysComp_FINAL-with-copyright.pdf

[82] MGMA. (2013) Academic Practice Compensation and Production Survey for Faculty and Management: 2014 Report based on 2013 Data. Retrieved from http://www.mgma.com/Libraries/Assets/Store/Surveys/8743-2014-Key-Findings-Academic-Practice.pdf

- **AMGA Medical Group Compensation and Financial Survey:**[83] AMGA is the industry group in which most large health systems and medical groups have membership. Only providers can be members, while other industry professionals may purchase access to the information. AMGA's annual survey includes responses from 289 medical groups including 73,700 providers for an average group size of 255. This survey has been conducted since 1986. Respondents tend to be larger organizations. Unlike the other two benchmark sets, data is published demonstrating quartiles, rather than individual provider percentiles.

Note: The Assessment G team was not granted permission to publish data from the AMGA surveys as comparisons to VHA data, although we did conduct an analysis using it.

To describe how productive VHA providers are in comparison to relevant industry benchmarks, the team conducted separate analyses of primary care and specialty care. We used panel size for primary care and encounters and wRVUs for specialty care, as measures of productivity, and benchmarked primarily to AMGMA and MGMA surveys, as well as Kaiser Permanente Northern California, and American Academy of Family Physicians (AAFP) for primary care panel size recognizing the limitations described above.

2.3.5 Primary care

For primary care, panel size is an appropriate measure for comparing both staffing levels and provider performance (productivity) in health care systems that care for a defined patient population, such as VA. Panel size is defined as the number of unique patients for whom a care team is responsible. To assess the provider staffing and productivity of VHA primary care as compared with the private sector, we first examined the characteristics of VHA's primary care model (PACT) and the ways in which it has been adapted for the needs of special populations (women, geriatrics, and Veterans with mental health needs). We considered the ways in which VHA's panel size for primary care providers has been adjusted based upon the demographics and unique health care needs of the patients it serves. We then benchmarked the panel size of VHA primary care providers with comparable industry benchmarks.

2.3.5.1 Summary of findings and analysis for primary care

We synthesized data and observations from benchmarking and site visits into the following three key findings. The sub-sections that follow describe the findings for primary care in detail. Information on the factors that we believe to be the drivers of these findings are presented below.

- Finding 4. VHA measures the performance of its PCPs using panel size. VHA calculates a modeled panel size for providers based on a variety of factors at each facility. The model was developed based on research into the appropriate panel size for the unique needs of Veterans. (See Section 2.3.5.2.)

[83] AMGA (2014) *2014 Medical Group Compensation and Financial Survey: 2014 Report Based on 2013 Data*. Alexandria, VA, American Medical Group Association.

- **Finding 5.** In accordance with policy, VHA facilities establish a maximum panel size for each primary care provider which is often lower than the modeled panel size. The maximum figure takes into account specialized panel needs (for example, a geriatric population) and other factors deemed appropriate by the facility. (See Section 2.3.5.4.)
- **Finding 6.** The actual panel size of VHA primary care providers is lower than internal and external benchmarks. (See Section 2.3.5.5.)

2.3.5.2 VHA's primary care model establishes the panel size of providers (Finding 4)

VHA measures the performance of its PCPs using panel size. VHA calculates a modeled panel size for providers using a variety of factors at each facility. The model was developed based on research into the appropriate panel size for the unique needs of Veterans.

In October 2009, as part of the Veterans Health Administration Transformation 21 initiative, VHA adopted and customized the Patient Centered Medical Home (PCMH) model of care within its primary care clinics, branding its PCMH model as PACT (Patient Aligned Care Team).[84] Through the use of the PACT model, VHA delivers a team of health care professionals who provide comprehensive primary care in partnership with patients, and who manage and coordinate comprehensive health care services consistent with the agreed upon goals of care. The PACT model aligns with VHA's strategic goal to provide personalized, proactive, patient-driven health care. Each PACT team, known as a 'teamlet' typically consists of a Primary Care Provider (PCP), Registered Nurse Case Manager, Clinical Associate (LPN, LVN, or Heath Technician, and Administrative associate [clerk]). The PCP can be a physician or APP.

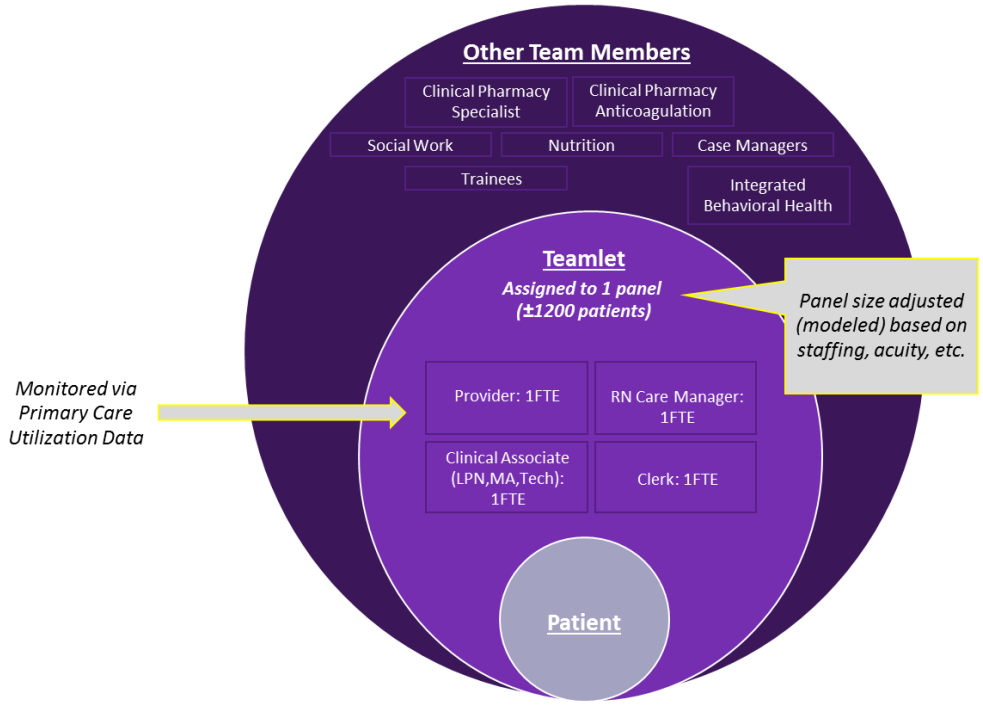
Each teamlet consists of a panel of patients under the direction of the PCP. Figure 2-13 shows the VHA-recommended PACT teamlet model and the model's inter-relationship with the patient. A recent study funded by VHA Health Services Research and Development found that Veterans in clinics with the highest medical home adoption had positive health outcomes – they had significantly lower Ambulatory Care Sensitive Conditions rates[85] (20 per 1,000) compared to Veterans in clinics with the lowest (25 per 1,000) and medium (26 per 1,000) adoption of medical home features.[86]

[84] U.S. Department of Veterans Affairs Health Department. (2014) VHA Handbook 1101.10: Patient Aligned Care Team (PACT) Handbook. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2977

[85] Ambulatory Care Sensitive Conditions: a quality measured defined as the age standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for admission to the hospital per 100,000 population younger than age 75 years. Agency for Healthcare Research and Quality. Retrieved from http://www.qualitymeasures.ahrq.gov/summary_redirect.aspx?type=replaced&objectID=35186

[86] Yano E. (2015). Implementation and Impact of VA Patient Centered Medical Home. IRR 09-082. HSR&D Study. Retrieved from http://www.hsrd.research.va.gov/research/abstracts.cfm?Project_ID=2141701013#.UijbFX_gfms

Figure 2-13. PACT teamlet model[87]



**Note: Each parent facility has an HPDP Program Manager, Health Behavior Coordinator, and MyHealtheVet Coordinator*

VHA's Office of Primary Care does not measure the productivity of its PCPs using wRVUs. In our discussions with them, VHA primary care leadership expressed significant concerns in using wRVUs to measure productivity, as many clinical activities done by PCPs do not have an associated wRVU value.[88] Furthermore, comparisons to systems which do not operate on a value-driven or patient centered model, are not comparable. In a white paper provided by VHA's Office of Primary Care Services and Office of Primary Care Operations, VHA stipulates that, "as a capitated health care system, management of a population and hence panel size is much more relevant than RVUs."[89](VHA, 2015). Perhaps not surprisingly, the only entities the Assessment G team identified as having methodologies for establishing panel sizes were those health care systems that care for defined patient populations. In analyzing these external entities alongside the VHA Primary Care approach, our team determined that panel size was the most appropriate measure of productivity within VHA Primary Care.

[87] Shear, J. Clinical Program Manager, VHA Office of Clinical Operations, VHA. (n.d.).VHA Transformation to a PCMH Model of Care Presentation. Colors modified from v.congresocronicos.org/documentos/ponencias/joanne-shear.pdfdocument presentation. Retrieved from v.congresocronicos.org/documentos/ponencias/joanne-shear.pdf

[88] Telephone Interview with several leaders from VHA Office Primary Care Services and Office of Primary Care Operations (January 7, 2015) and Assessment G site visit interviews.

[89] Veterans Health Administration. Panel Size: Private Sector & VHA, White Paper, provided by VHA, January 2015.

VHA modifies primary care panel sizes based on several factors:

- Primary Care intensity score (reflects patient population acuity)
- Support staff ratios
- Number of clinic rooms and other physical support infrastructure
- Presence of newly hired providers
- Specialized panels (a panel which serves a special population, such as a Geri-PACT)

Text box citation: U.S. Department of Veterans Affairs. (2009) VHA PCMM Handbook 1101.02. Retrieved from http://www.cobooks.net/d/vha-handbook-110102-primary-care-management-module-pcmm-579895/

VHA utilized the Primary Care Management Module (PCMM) to compute a modeled panel size (division modeled capacity) for PCPs at each facility. To develop VHA's modeled panel size, VHA compared itself in 2003 to MGMA and U.S. Army Medical Command and made modifications based on factors known to affect physician productivity, for example, patient characteristics, support staff, and exam room ratios. In 2012, a follow up study was conducted that included Santa Clara Valley Medical Center, a county health system with patients who primarily have chronic diseases in Los Angeles County.[90] As reported in VHA's Primary Care Management Module Handbook, "For sites with a patient population reflecting the norms for disease severity and reliance on VHA and who have current norms of 2.17 support staff per 1.0 FTE provider and 3.0 clinic rooms per 1.0 FTE provider, an expected panel would be 1,200 patients for a full-time, established primary care physician. After adjustment for the factors identified, expected panels for VHA primary care providers largely fall in the range of 1,000 to 1,400."[91](VHA Primary Care Management Module [PCMM] Handbook, 2009). For APPs, this translates to roughly 900 patients (75 percent of a physician's panel size) per primary care APP.

2.3.5.3 Facilities can customize primary care models for special populations

In considering the staffing levels and productivity of primary care clinics across VHA, it is important to understand both the general PACT model and specialized models for unique or special populations, which may have different staffing requirements and care models. Special populations are cohorts of patients who meet VHA national or locally approved and published criteria to receive care from a special population PACT. Special population PACTs may include: Women's Health (WH), Geriatric (GERI), Home-based Primary Care (HBPC), Infectious Disease (ID), Post-deployment Care (PD), Renal/Dialysis, Serious Mental Illness (SMI), and Spinal Cord Injuries and Disorders (SCI/D).[92] WH-PACTS represent the largest proportion of specialized

[90] Veterans Health Administration. Panel Size: Private Sector & VHA, White Paper, provided by VHA, January 2015.

[91] U.S. Department of Veterans Affairs. (2009) VHA PCMM Handbook 1101.02. Retrieved from http://www.cobooks.net/d/vha-handbook-110102-primary-care-management-module-pcmm-579895/

[92] U.S. Department of Veterans Affairs. (2014). VHA PACT Handbook. Retrieved from http://www.va.gov/vhapublications/publications.cfm?pub=2

population panels. They make up 28.8 percent of PCP FTE (both Physician and APP FTE). The remaining specialized population panels, when combined, make up 9.4 percent of PCP FTE.

These specialized PACTs are unique because their panels are composed of special populations that require more complex primary care. Special population PACTs tend to have smaller patient panels than their traditional primary care counterpart panels (which generally range from 1,000 to 1,400 patients),[93] and may also have different staffing and support staffing requirements. Further, exact staffing models for PACTs may vary by facility (see discussion of Facility Maximum versus VHA Modeled Panel Size in Section 2.3.5.4); however, according to VHA Handbook 1101.10, staffing decisions must optimize PACT function. VHA Handbook 1101.02 provides procedures for determining and adjusting panel sizes and primary care direct patient care time and prorating of support staff FTE based on dedicated primary care clinical activities.

Women Veterans are a relatively small proportion of the total Veteran population (they represent approximately 6 percent of VHA patients),[94] but have specific health care needs served through a certified WH physician. 27.41 percent of primary care physician FTE serve on WH-PACTs. Each WH-PACT has a physician certified in women's health and 10 percent or more women patients. More than 80 facilities across VHA also have comprehensive women's health clinics, with VA requiring each site of care to have a designated women's health provider. Female Veterans that are victims of physical assault, battery, or sexual harassment occurring during active duty or active duty for training receive specialized physical and mental health care through WH-PACTs.[95] Separate of these unique needs, women Veterans tend to be younger (the average age of female Veterans in 2013 was 48, whereas the average age of male Veterans was 63).[96]

Staffing to meet demand is a particular challenge in some women's health clinics due to the increasing influx of women Veterans to the VA system.[97] In fact, since 2000, the number of female Veterans using VA health care has more than doubled, outpacing the growth rate of the male Veteran population. On the other hand, overall demand is low relative to other specialties, so some facilities may not have enough demand for providers to appear productive. The Office of Women's Health and Office of Primary Care recommend a 4:1 ratio of staff for

[93] House Veterans Affairs Subcommittee on Health. (2015) Congressional Hearing: A Report Assessing the Staffing Needs of Each Medical Facility within the Department of Veterans Affairs. Transcript retrieved from http://www.c-span.org/video/?326075-1/hearing-veterans-affairs-staffing-issues.

[94] U.S. Department of Veterans Affairs. (2014). Sourcebook: Women Veterans in the Veterans Health Administration. Volume 3: Sociodemographics, Utilization, Cost of Care, and Health Profile. p3. Retrieved from http://www.womenshealth.va.gov/.

[95] U.S. Department of Veterans Affairs. (2010) VHA Directive 2010-033. Military Sexual Trauma Programming. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2272.

[96] Women Veterans Health Care, Fact Sheet, July 2014 (sourced from Women's Health Evaluation Initiative [WHEI], Analysis of FY13 WHEI Master Database).

[97] Telephone Interview with the Office of Women's Health. (February 24, 2015) Patricia Hayes, Chief Consultant for the Women Veterans Health Strategic Health Care Group

PCPs for women's health PACT teamlets in contrast to a 3:1 ratio for regular PACT teams.[98] A unique feature of staffing in a women's health clinic is that a female chaperone is required to be in the room with the provider when certain procedures or exams are being performed.[99] This can impede productivity compared to caring for the male Veteran population, as in some cases where a chaperone is not readily available, the provider and patient must wait for a chaperone to become available.[100]

There is a shortage of specialized geriatric care across the country, with private sector systems and VHA having similar challenges.[101] Today, VHA leads the nation in the provision of specialized geriatric care, with 45 FTE geriatric/palliative providers across the VA system.[102] At present, there is no health system with as many care teams, known in VHA as Geri-PACTS, dedicated to the geriatric population. Geri-PACTS can be established for any geriatric team that assumes responsibility for comprehensive, coordinated primary care and specialized geriatric care of an assigned panel of patients. It is important to note that geriatric services for Veterans in VHA are not limited to only those services provided by Geri-PACTs; however, few VHA geriatricians practice outside of Geri-PACTs. Geri-PACT teamlets typically have a panel of 642 patients and include 1.0 FTE geriatric PCP, 1.0 FTE registered nurse case manager, 1.0 FTE clinical associate (LPN/LVN/Health Tech), social worker, and clinical pharmacy specialist.[103] Discipline-specific team members, such as registered dieticians, geriatric psychiatrists, geriatric psychologist, hospice and palliative care provider, or physical medicine and rehabilitation services clinicians may also be part of the care team.[104]

Panel sizes for Geri-PACTS may not exceed two thirds of the PACT panel size at the site.[105] When assessing the productivity of providers in Geri-PACTs, it is important to note that there are several CPT® codes which do not have wRVU values (for example, S0250 – team assessment) that constitute the workload of Geri-PACTs. Another key aspect of geriatrics care is the purchased care program. Long term care support is supported by over 10,000 home health care workers at 2,500 community nursing homes, 130 VA CLCs and 130 State Veterans homes.[106] The Office of Geriatrics and Extended Care Services is making significant efforts to

[98] Ibid.

[99] U.S. Department of Veterans Health Administration. VHA Handbook 1333.01. Health Care Services for Women Veterans. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2246

[100] Telephone Interview with the Office of Women's Health. (February 24, 2015). Patricia Hayes, Chief Consultant for the Women Veterans Health Strategic Health Care Group, and Assessment G site visit interviews.

[101] Telephone Interview with the Office of Geriatrics and Extended Care Services, (January 30, 2015) Richard Allman, Chief Consultant, Geriatrics and Extended Care Services.

[102] Ibid.

[103] U.S. Department of Veterans Affairs. Geriatrics and Extended Care: Geriatric Patient Aligned Care Team (Geri-Pact). Retrieved from http://www.va.gov/GERIATRICS/Geriatric_Patient_Aligned_Care_Team.asp

[104] Ibid.

[105] Telephone Interview with the Office of Geriatrics and Extended Care Services. (January 30, 2015). Richard Allman, Chief Consultant, Geriatrics and Extended Care Services.

[106] Ibid.

better monitor whether community nursing home facilities meet eligibility requirements, provide high quality care, and do so in a cost effective manner.[107]

VHA recently initiated a special PACT model for Veteran patients with serious mental illnesses called SMI-PACTs. In a SMI-PACT, the Veteran's mental health care is planned and delivered by a team of mental health professionals, including psychiatrists/mental health advance practice nurses, psychologists, RNs, LPNs/Health Techs, therapists, and others. Because persons with SMI have premature mortality rates much higher than the general population, and may be more likely to have difficulty navigating the VA system, VHA is testing the SMI-PACT model. This project, led by a physician at the VA Greater Los Angeles Health care System, "will partner leadership at two medical centers to implement SMI-PACT, with the goal of improving health care and outcomes among people with SMI, while reducing unnecessary use of emergency and hospital services. Evidence-based quality improvement strategies will be used to reorganize processes of care. In a site-level controlled trial, this project will evaluate the effect, relative to usual care, of SMI-PACT implementation on (a) provision of appropriate preventive and medical treatments; (b) patient health-related quality of life and satisfaction with care; and (c) medical and mental health treatment utilization and costs."[108](Young, 2014). In most instances, the mental health team will not be providing the primary care services to the Veterans in SMI-PACTs, but incorporating providers with privileges and scopes of practice that include providing these services.[109] However, depending on the results of the study, which ends in 2018, VHA may move toward providing care to this population through more SMI-PACTs.

2.3.5.4 VHA facilities establish a maximum panel size for primary care providers (Finding 5)

In accordance with policy, VHA facilities establish a maximum panel size for each primary care provider which is often lower than the modeled panel size.

According to the Office of Primary Care, VHA central office calculates a modeled panel size (capacity) for a general primary care physician at each facility using the factors described above in Section 2.3.5.2. The Office of Primary Care issues the modeled panel size to each facility, along with guidance (the VHA PCMM handbook) on how the model may be modified by the facility. Each VHA facility has the flexibility to sets its own maximum capacity for its providers (physicians and APPs) based upon local situational factors and using the guidance in the PCMM handbook (such as, applying guidance to adjust for special PACT presence.) For example, a facility may set a lower maximum panel size for a new provider, or a panel serving a population with special needs, or in order to have capacity for new patients.

[107] Ibid.

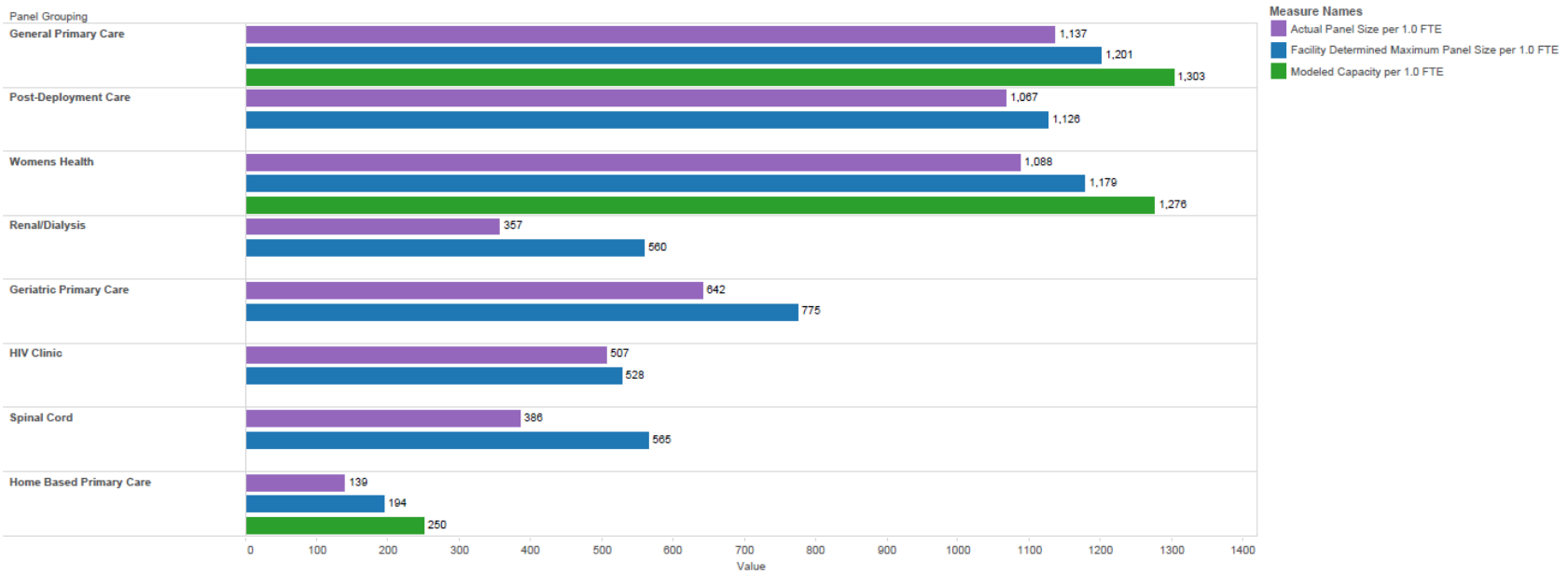
[108] Young, S.A., PACT to Improve Health Care in People with Serious Mental Illness. (January 2014- December 2018) Retrieved from project abstract, available at http://www.hsrd.research.va.gov/research/abstracts.cfm?Project_ID=2141701880.

[109] U.S. Department of Veterans Affairs. (2014). VHA PACT Handbook. Retrieved from http://www.va.gov/vhapublications/publications.cfm?pub=2.

As depicted in Figure 2-14, nationally, VHA's average modeled capacity is 1,306 patients per primary care general practice physician FTE. Whereas the average facility determined maximum capacity is 1,207 patients per general practice physician. Comparing them, the average facility maximum is 99 (8 percent) fewer patients per physician FTE than VHA's modeled panel size.

In Section A.3, we report the maximum and modeled capacity at each facility. The difference between the VHA-modeled capacity and the facility maximum can vary significantly. On the low side, we found a facility maximum capacity could be 462 patients fewer per physician FTE than the VHA-modeled capacity for the same facility. On the high side, we found a facility maximum could be 954 patients more per physician FTE than the VHA-modeled capacity for the same facility.

Figure 2-14. Summary of panel grouping



One consideration which facilities take into account in developing the facility maximum is the prevalence of special populations, which have different expectations for panel size (see VHA's PCMM Handbook). While 68.1 percent of PCP (physician) FTE are in general primary care PACTs, 27.4 percent are in WH-PACTs and 4.5 percent are in other special population PACTs. As depicted in Figure 2-14, the average facility maximum capacity per physician FTE is lower for all specialty population PACTs than the average VHA modeled capacity for general primary care providers.

Our team was further able to calculate the national modeled capacity for WH-PACTs and HBPC-PACTs using the recommended modifiers in VHA's PCMM Handbook. The modeled capacity for both WH-PACTs and HBPC-PACTs was higher than the facility reported maximums. The modeled capacity is depicted as a green bar in the graphic above and exists only for the WH-PACTS, HBPC-PACTS, and General Primary Care PACTs, since specific inputs for modifications to modeled panel size are not provided in the VHA PCMM or PACT Handbooks. Instead, either general guidelines are suggested or discretion is left to local leadership.

2.3.5.5 VHA's actual primary care panel size is lower than expected (Finding 6)

The actual panel size of VHA primary care providers is lower than internal and external benchmarks.

We completed our analysis of VHA PCP panel size by comparing it to the private sector using three approaches; first, we conducted research on panel sizing, and provide that information below for comparison. Second, we reviewed VHA's methodology for developing its panel sizing approach, and compared VHA's panel sizes to existing benchmarks (recognizing that some comparison sets operate very different models of care); and lastly, we used a formula to calculate ideal visits per year, and compared that to the current visits per year in primary care.

To summarize the research on appropriate panel sizes:

- A 2012 Annals of Family Medicine study by Altschuler, et al. reported the average US panel size was 2,300, but noted that this was too large to deliver quality care under a PCMH. Using peer reviewed sources regarding the number of hours per patient per year needed to perform preventive, chronic, and acute care, it also reported that panels can range from 983 to 1,947, dependent upon delegation of tasks to various non-physician members of a primary care team. It recommends that the low-overhead ideal medical practice have somewhat larger panel sizes (than a concierge medical practice with panel sizes of 200 to 600) but typically fewer than 1,000 patients.
    - Under a non-delegated model, and assuming primary care providers work 2,025 hours per year and provide an average of 2.06 hours of service per patient per year, primary care physicians can care for a panel of 983 patients.
    - On the opposite end of the spectrum, with the most ambitious assumption about the degree of delegation possible, a physician could reasonably care for a panel of 1,947 patients.[110]
    - It further noted that adjusting for the age and acuity of VHA's patient population supports VHA's panel size of 1,200 if work is delegated to non-clinicians.[111]
- A 2013 published blog by the Medical Group Management Association (MGMA) reported an unadjusted median panel size of 1,906 and average panel size of 2,184 patients per full time provider, sourcing from the 2012 MGMA Cost Survey for Primary Care Practice.[112] This number seems to be on the rise in single and multispecialty group practices with

[110] U.S. Department of Veterans Affairs. (2009) VHA PCMM Handbook 1101.02. Retrieved from http://www.cobooks.net/d/vha-handbook-110102-primary-care-management-module-pcmm-579895/.

[111] Altschuler, J., Margolius, D., Bodenheimer, T., & Grumbach, K., (2012). Estimating a Reasonable Patient Panel Size for Primary Care Physicians with Team-Based Task Delegation. Annals of Family Medicine. Retrieved from http://www.annfammed.org/content/10/5/396.full.pdf+html.

[112] Define patient panels to improve practice flow, patient care. (2015, June 9). Retrieved from http://www.mgma.com/blog/define-patient-panels-to-improve-practice-flow-patient-care.

primary care. The 2014 MGMA Cost Survey reports that primary care practices have 2,505 patients per FTE physician.[113]

- A 2013 presentation by RAND Health researchers on implications of new models of care on the primary care workforce observed that ideal panel sizes vary between 1,387 and 1,947, and that adopting the PCMH model may reduce panel size by 23 percent.[114] It also noted that medical homes, in general, appear to have smaller panel sizes.
- A 2012 *Health Affairs*[115] article cites a 2009 study from Duke University published in *Preventing Chronic Disease*[116] which states that a primary care physician with an average panel of 2,000 patients would spend 17.4 hours per day providing recommended acute, chronic, and preventive care. The *Health Affairs* article further stipulates that if a reasonable work day for a primary care practitioner is eight hours per weekday in direct patient contact – excluding paperwork and other responsibilities, then the appropriate panel size should be lower than 2,000.
- The Assessment G team compared VHA modeled panel sizes to a population health model system - Kaiser Permanente Medical Group Northern California (average), [117] the MGMA 2014 Compensation and Production Survey (median), and AMGA 2014 Medical Group Compensation and Financial Survey (median). Additionally, we calculated an "ideal" panel size benchmark for VHA using equations published by Murray et al in the *Family Practice Management.*[118] See Figure 2-15 for comparisons.

[113] MGMA. (2014). MGMA Cost Survey: 2014 Report Based on 2013 Data; Key Findings Summary Report. Retrieved from http://www.mgma.com/Libraries/Assets/Key-Findings-CostSurvey-FINAL.pdf?source.

[114] Auerbach, D, & Friedberg, M. (n.d.) Primary Care Workforce Implications of New Models of Care. Rand Health. Retrieved from http://www.mass.gov/eohhs/docs/eohhs/graduate-medical-edu/gme-rand-presentation.pdf

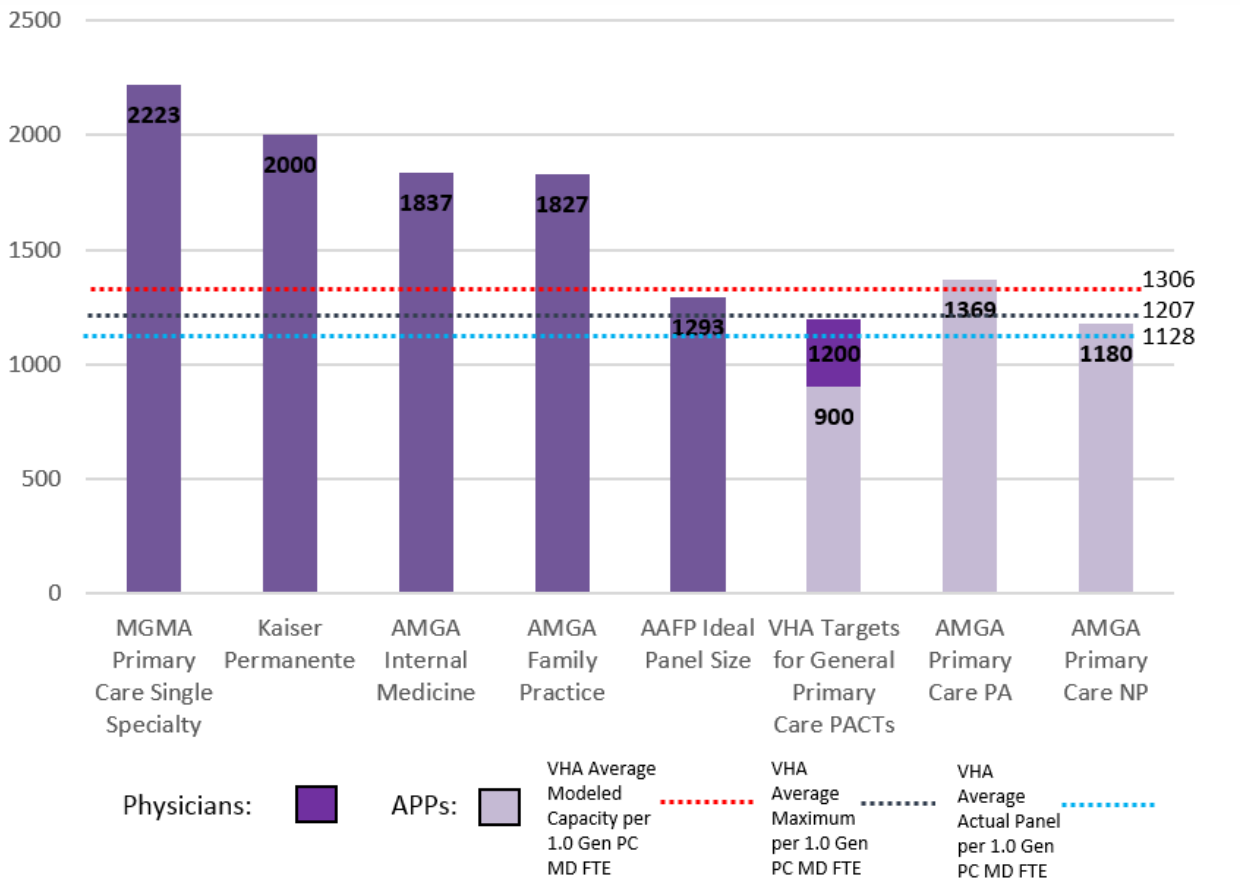
[115] Bodenheimer T, & Pham, H. (2010).Primary Care: current problems and proposed solutions. *Health Aff* May 2010; 29(5): 799-805. doi: 10.1377/hlthaff.2010.0026 .

[116] Yarnall, K.S.H., Østbye, T., Krause, K.M., Pollak, K.I., Gradison, M., & Michener, J.L. (2009) Family physicians as team leaders: "time" to share the care. *Prev Chronic Dis* 2009;6(2):A59. Retrieved from http://www.cdc.gov/pcd/issues/2009/apr/08_0023.html

[117] As reported on site visit to Kaiser Permanente Medical Group Northern California on April 22, 2015.

[118] Murray, M., Davies, M. & Boushon, B. (2007). Panel Size: How Many Patients Can One Doctor Manage? *Fam Pract Manag*.2007; 14(4); 44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html

Figure 2-15. Panel sizes - VHA vs. benchmarks[119]



According to the AAFP, there are several additional variables which may be used to determine the ideal panel size:

Visits per patient per year: To increase the size of the panel that a provider can successfully care for, the number of visits per patient per year can be decreased by improving continuity (when patients see their own provider they require fewer visits),[120] lowering the visit return

[119] Assessment G benchmark analysis uses MGMA survey, data from Kaiser Permanente Northern California Group site visit, AMGA 2014 Medical Group Compensation and Financial Survey. (2015, June 9). Retrieved from https://www.amga.org/wcm/PI/Surveys/wcm/PI/SAT/PhysComp/participate_comp.aspx. Analysis of VHA data using AAFP equation of VHA expected baseline of expected panel size for physicians and APPs. U.S. Department of Veterans Affairs. (2009) VHA PCMM Handbook 1101.02. Retrieved from http://www.cobooks.net/d/vha-handbook-110102-primary-care-management-module-pcmm-579895/

[120] Raddish, M., Horn, S.D., & Sharkey, P.D. (1999). Continuity of care: is it cost effective? *Am J Manage Care*. 1999;5:727–734; Cited in Mark Murray, MD, MPA, Mike Davies, MD, Barbara Boushon, RN. *Fam Pract Manag*. 2007 Apr;14(4):44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html

rate, such as the percentage of visits for which the provider requests a follow-up visit,[121] providing more services at each visit, increasing cohesion of care teams[122] teamwork, and using alternatives to traditional visits such as secure messaging, telephone care and other telehealth modalities, and group visits.[123]

Provider Visits per day: This variable can be increased by optimizing care delivery models, decreasing the no-show rate, offering more appropriate support staff so that providers can reduce individual visit length,[124] improving the workflow by reducing bottlenecks and providing more "just in time" support, optimizing the number of exam rooms,[125] and removing unnecessary work (escorting patients between the waiting and exam rooms, prepping rooms, or scheduling appointments), from the providers to allow them to maximize appointment supply.[126] The number of patients seen per day may also depend on such factors as: appointment length, clinic hours of operation, scheduling practices (for example, double booking, or no show), space, and the presence of residents, fellows, and/or APPs. Unfortunately, there is a lack of information on the leading best practice for the number of patients per day. Best practices may also not be applicable to the VHA patient population, which may differ from other health care systems, specifically around age, co-morbidities, and social determinants of health, for example, employment, and housing.

Provider days per year: This variable is determined by the number of days a provider's schedule was booked for patient visits per year. It can then be adjusted for changing expectations about the number of days that should be booked with appointments, as well as critical decisions about how provider time will be distributed, for example, shifting providers away from nonclinical duties in favor of clinical duties.[127]

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[121] Schectman, G., Barnas, G., Laud, P., et al. (2005). Prolonging the return visit interval in primary care. *Am J Med*. 2005;118(4):393–399; Cited in Mark Murray, MD, MPA, Mike Davies, MD, Barbara Boushon, RN. *Fam Pract Manag*. 2007 Apr;14(4):44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html

[122] Grumbach, K., & Bodenheimer, T. (2004). Can health care teams improve PRIMARY CARE practice? JAMA. 2004;291:1246–1251; Cited in Mark Murray, MD, MPA, Mike Davies, MD, Barbara Boushon, RN. *Fam Pract Manag*. 2007 Apr;14(4):44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html

[123] Bodenheimer, T. (2003). Innovations in primary care in the United States. BMJ. 2003;326:796–798; Cited in Murray, M., Davies, M., Boushon, B. (2007) *Fam Pract Manag*. 2007 Apr;14(4):44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html

[124] Grumbach, K., & Bodenheimer, T. (2007) Can health care teams improve primary care practice? *JAMA*. 2004;291:1246–1251; Cited in Mark Murray, MD, MPA, Mike Davies, MD, Barbara Boushon, RN. Fam Pract Manag. 2007 Apr;14(4):44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html

[125] Mayo-Smith M.F., & Dooley D. (2007). Primary care panels in the VA. Fed Pract. August2004:47–67; Cited in Mark Murray, MD, MPA, Mike Davies, MD, Barbara Boushon, RN. *Fam Pract Manag*. 2007 Apr;14 (4):44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html

[126] Grumbach, K., & Bodenheimer, T. (2004). Can health care teams improve primary care practice? *JAMA*. 2004;291:1246–1251; Cited in Mark Murray, MD, MPA, Mike Davies, MD, Barbara Boushon, RN. Fam Pract Manag. 2007 Apr;14(4):44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html

[127] Murray, M., Davies, M., & Boushon, B., (2007). Panel Size: How Many Patients Can One Doctor Manage? *Fam Pract Manag*. 2007 Apr;14(4):44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html

AAFP recommends using these variables to determine an "ideal" panel size, and further suggests performing age adjustment via adjusting the 'visits per patient per year' metric.[128] The ideal panel size is one in which supply and demand are balanced. The following equation can be used to derive ideal panel size based on the provider's historical level of productivity: Panel size × visits per patient per year (demand) = provider visits per day × provider days per year (supply). For the purposes of aligning VA demographics to outside benchmarks, the Assessment G team applied an adjustment for males aged 60 to 64 (based on VA median age and sex):

***2.38** (current VA primary care outpatient visits per year)[129] **x 1.17** (AAFP adjustment factor based on VHA paneled member age and sex)[130] = **2.78** (calculated adjusted VHA visits per patient per year)*

The Assessment G team made an additional adjustment to the 'provider visits per day' metric. Currently, VHA providers are expected to see between 10 and 12 patients per day.[131] In the typical fee-for-service care model in the private sector, it is common to plan for 24 visits per day (at least 3 patients per hour with 15 minute appointment times). Given the acuity, age, comorbidities, and overall disease state of VHA patients, the "ideal" does not reflect the true need of Veteran patients. Not surprisingly, VHA primary care appointments are more commonly 20-30 minutes in length.[132] Based on the assumption that appointments are typically 20-30 minutes, it is reasonable to assume that a VHA PCP would be able to see 15 patients per day (resulting in scheduling 2 patients per hour, with 8 hour clinical work days and time for additional administrative responsibilities). Table 2-4 shows the calculations and inputs for the "ideal" VHA metrics, based on the aforementioned methodology:

Table 2-4. Calculated ideal VHA metrics[133]

Metrics	VHA
Expected visits per patient per year	2.78
Potential provider visits per day	15.0
Provider days worked per year	240.0

[128] Ibid.

[129] U.S. Department of Veterans Affairs Veterans Health Administration. (2013). VHA Facility Quality and Safety Report Fiscal Year 2012 Data. Retrieved from http://www.va.gov/HEALTH/docs/2013QSExecutiveSummary.pdf.

[130] Murray, M.D, Davies, M. & Boushon, B. (2007). Panel Size: How Many Patients Can One Doctor Manage? *Fam Pract Manag*.2007; 14(4); 44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html#fpm20070400p44-bt2.

[131] Based on Assessment G site visit data gathered from primary care providers on 24 site visits.

[132] Ibid.

[133] Assessment G analysis of expected visits per year using equation from Murray, M.D, Davies, M. & Boushon, B. (2007). Panel Size: How Many Patients Can One Doctor Manage? *Fam Pract Manag*.2007; 14(4); 44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html#fpm20070400p44-bt2

Metrics	VHA
Calculated ideal panel size for VHA providers	1,293
VHA's modeled panel size per general practice physician 1.0 FTE (Standard Deviation = 71.8)	1,306
VHA's average facility maximum panel size per general practice physician 1.0 FTE (Standard Deviation = 161.8)	1,207
VHA's average panel size per general practice physician 1.0 FTE (Standard Deviation = 165.8)	1,128

Nationally, VHA's average modeled panel size for general practice physicians is similar to the calculated ideal panel size, which is the external benchmark derived from the American Academy of Family Physicians. The maximum panel size established by VHA facilities is usually lower than VHA's modeled panel size for general practice physicians at the same facility (the internal benchmark) as well as the ideal panel size for VHA providers (the external benchmark).

The actual panel size for VHA general practice physicians is 13 percent below the VHA-modeled panel size, 12 percent below the external benchmark, and 5 percent below the facility maximum. This analysis is based upon September 30, 2014 data provided by VHA and panel sizes may have changed since this time. As discussed above, a range of factors should be considered when comparing the panel size of facilities, including: patient characteristics (including special populations) support staff and exam room ratios, the experience level of the physician in the clinic, as well as the utilization of APPs by the facility.

In Section A.3 we depict the actual versus modeled and maximum panel sizes per general practice physician 1.0 FTE at each facility.

We elaborate on some of the barriers that VHA faces in increasing the productivity of its primary care providers in Section 2.3.8, several of which parallel the levers noted by AAFP.

2.3.6 Specialty care

For specialty care, wRVUs, encounters and access are appropriate measures for comparing provider performance (productivity). To assess the provider productivity of VHA specialty care as compared with the private sector, we used industry accepted benchmark data sets: the Academic MGMA survey (which includes academic medical centers), and MGMA survey (which includes many smaller single or multispecialty group practices, but has a much larger sample size than the AMGMA survey). We compared the wRVUs and encounters generated by VHA providers in each major specialty with these industry benchmarks. We then benchmarked VHA specialty care providers from high, medium and low complexity facilities with the industry benchmarks to determine if providers in these different cohorts of VHA facilities compare differently to the private sector.

2.3.6.1 Summary of findings and analysis for specialty care

We have synthesized data and observations from benchmarking and site visits into the following findings. The sub-sections that follow describe the findings for specialty care in detail. Information on the some of the potential reasons for the differences between the productivity of VHA specialty care providers and the private sector are presented in Section 2.3.8.

- **Finding 7.** When compared to the private sector using wRVUs, there is a productivity gap in VHA specialty care. (See Section 2.3.6.3)
- **Finding 8.** When encounters or visits are used as a measure of productivity, the gap shrinks and VHA specialty care providers compare more favorably to the private sector. (See Section 2.3.6.5).
- **Finding 9.** VHA mental health providers are more productive than academic medical center (AMGMA) benchmarks, as measured by both wRVUs and encounters. (See Section 2.3.6.6).
- **Finding 10.** Overall, VHA specialty care providers are producing fewer wRVUs than private sector benchmarks; however, VHA specialty care providers at the highest complexity facilities are more productive than their peers. Further, the most productive VHA providers (those at the 75th percentile of VHA providers) are often more productive than the private sector. (See Section 2.3.6.7).
- **Finding 11.** Productivity and access are important measures in population based health models like VHA that focus on patient outcomes, rather than volume. VHA OPES reports on productivity and access offer tools for use by medical facilities. With some improvements to expedite adoption and regular use by medical centers, these tools could become key resources in optimizing productivity and maximizing access to care. (See Section 2.3.6.8).

2.3.6.2 Common productivity measures for specialists are wRVUs and encounters

Specialty care providers represent 46 percent of VHA providers (excluding social workers, dentists, and medical hospital specialists, such as radiologists and pathologists) in FY2014.[134] Please see Section 2.2 for additional detail.

Common indicators of specialty care provider productivity used by VHA and the private sector are wRVU production,[135] encounters per provider FTE, and patient access. The Assessment G team compared VHA provider encounters and wRVUs by specialty against industry accepted benchmark data sets: the Academic MGMA survey (which includes academic medical centers), and MGMA survey (which includes many smaller single or multispecialty group practices, but has a much larger sample size than the AMGMA survey). The AMGMA survey offers a more

[134] Assessment G Team analysis of Provider Labor Detail provided by VHA OPES, April 9, 2015.

[135] MGMA (2009). *Lessons for Financial Success*. (Chapter 5: Productivity, Capacity, and Staffing, pp. 4-6). Retrieved from http://www.mgma.com/Libraries/Assets/About/About%20MGMA/About%20Center%20for%20Research/Lessons-for-Financial-Success-Ch.-5-Productivity-Capacity-and-Staffing.pdf

appropriate comparison for VA's higher complexity (level 1 and 2) facilities, which tend to be affiliated with academic medical centers that have trainees and teaching programs, whereas the MGMA survey is more appropriate to compare to VA's lower complexity (level 3) facilities. However, the accuracy of benchmarking surveys is relative to the number of responses; it should be noted that there are VHA specialties in AMGMA with samples sizes that are too small to benchmark.

We benchmarked the productivity of each specialty practice at the individual provider level (each individual provider's workload). Only VHA providers were included; contract and fee-based (non-employee) providers were excluded, as were fellows and residents.[136] Several specialties, such as emergency department or urgent care, hospitalists (defined as family practice and internal medicine physicians without a designation as a primary care provider), critical care radiology and pathology, were separated from the benchmarking, since encounter and wRVU data for these specialties are difficult to accurately measure and tend to skew the productivity data. For the purposes of this report, we call these "Hospital Based Specialties" and we separate them out in the productivity benchmarks.

We compared encounters to both MGMA and AMGMA benchmarks. While MGMA has updated the encounter definition in its Physician Compensation and Production Survey to include Telehealth and e-consults in its most recent survey (2014), MGMA has not updated its definition as such in its Academic Practice Compensation and Production Survey (AMGMA). Our team was unable to distinguish Telehealth and e-consults in the encounter data set as CPT® level detail was not included. As such, we were unable to adjust when comparing to AMGMA. We were able to quantify the volume of Telehealth and e-consults to be about 2.7 percent of total wRVUs. These telehealth and e-consults may cause VHA providers to appear more productive than the AMGMA benchmark, though the impact does not appear to be significant.

2.3.6.3 A productivity gap exists between VHA specialists and the private sector (Finding 7)

When compared to the private sector using wRVUs, there is a productivity gap in VHA specialty care.

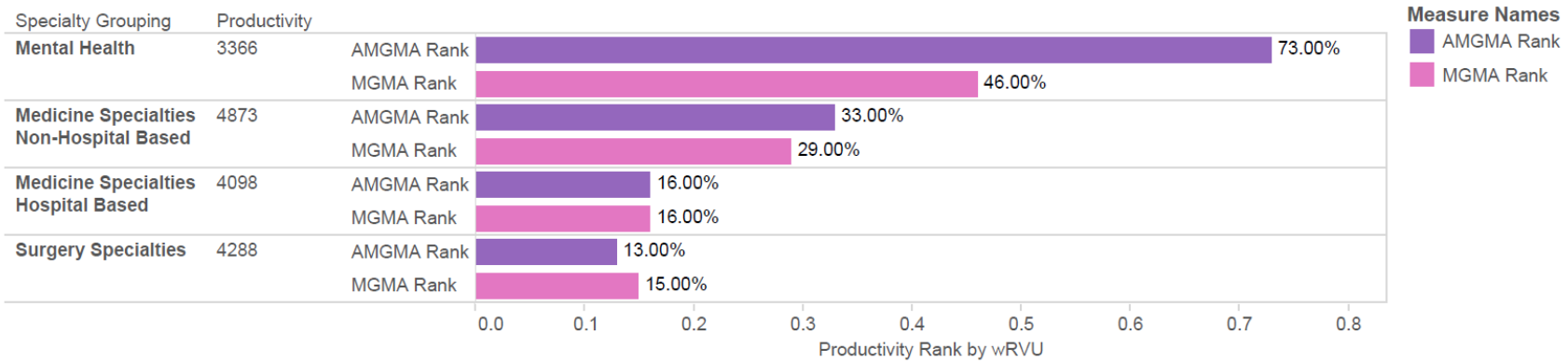
We compared wRVUs per VHA provider (using clinical, Worked FTE as basis) with AMGMA and MGMA benchmark surveys. The Assessment G team calculated the wRVUs based on VHA wRVU data from the same core data set used to calculate the staffing level and encounters of specialty care providers. The VHA wRVU data was adjusted to account for modifiers, gap (non-traditional CPT® codes) and imputed codes, to make the data more comparable to the benchmark data sets. However, the team was not able to adjust wRVU data to ensure encounters are not double counted for RVU credit; according to VHA OPES, this issue only affects 2.9 percent of encounters or 3.4 percent of total wRVUs produced (See Appendix A for additional detail).[137] Grant Thornton urges readers of this report to carefully consider the

[136] Resident workload is attributed to attending physicians, both in VHA, and in the private sector.

[137] Analysis of multiple provider wRVUs by stop code, provided by Jim Campbell, VHA OPES, March 27, 2015.

limitations of the VHA provider productivity data, its comparability to these benchmarks, and to consider the findings detailed below that explain the differences between VHA provider productivity and private sector providers (limitations are further described in the methodology section). The wRVU productivity benchmark data for each aggregate specialty group is provided in Section A.1. The aggregate wRVU data for providers at each VAMC is presented in Section A.2. We grouped the specialties presented in Figure 2-15 into mental health, medicine specialties (non-hospital based), medicine specialties (hospital based) and surgery specialties. These specialty groupings are typical in health care and allowed us to understand general patterns in the productivity of VHA specialty providers. Nevertheless, this high level view may mask variations in productivity at the specialty and provider level.

Figure 2-16. External productivity rankings by wRVUs and specialty grouping[138]



The Assessment G team found that VHA medical and surgical specialists are less productive than many providers in the private sector when comparing wRVU production to AMGMA and MGMA benchmarks. VHA medical specialists are less productive than the median of academic medical providers (AMGMA survey) and providers in the MGMA survey, producing wRVUs at 33rd and 29th percentiles of survey respondents, respectively. VHA surgical specialists are also less productive than the median of academic medical providers (AMGMA survey) and providers in the MGMA survey, producing wRVUs at the 13th and 15th percentiles of survey respondents, respectively. On the other hand, hospital-based specialties, for example, radiology and pathology, compare to the 16th percentiles of both the AMGMA and MGMA benchmarks.

The wRVU calculations for certain surgical specialties (in particular, the Thoracic, Neuro, and Orthopedic surgical specialties) may be affected by the methodology that the Assessment G team used to account for the number of surgical assists performed by non-resident/non-fellow physicians. The Assessment G team used a standard modifier used by Centers for Medicare and Medicaid, which discounts the wRVUs generated for a surgical procedure (for example, a bilateral knee replacement) when a second physician

[138] Assessment G analysis of Provider Detail FY14 provided by VHA OPES, February 26, 2015; Provider Labor Detail FY14 provided by VHA OPES April 9, 2015; AMGMA survey 2014; and MGMA survey 2014.

assists. In the case of VHA, this may over-adjust the productivity of these specialties because the assist is more often performed by a resident or fellow, neither of whom will generate wRVUs for the encounter. While accounting for this difference would drive productivity higher in the surgical specialties, the team determined the overall impact on the percent rankings compared to benchmarks was minimal (generally in the bottom quartile across benchmark sources). For details on modifier adjustments and VHA's response, please see Appendix B.2.5.3.

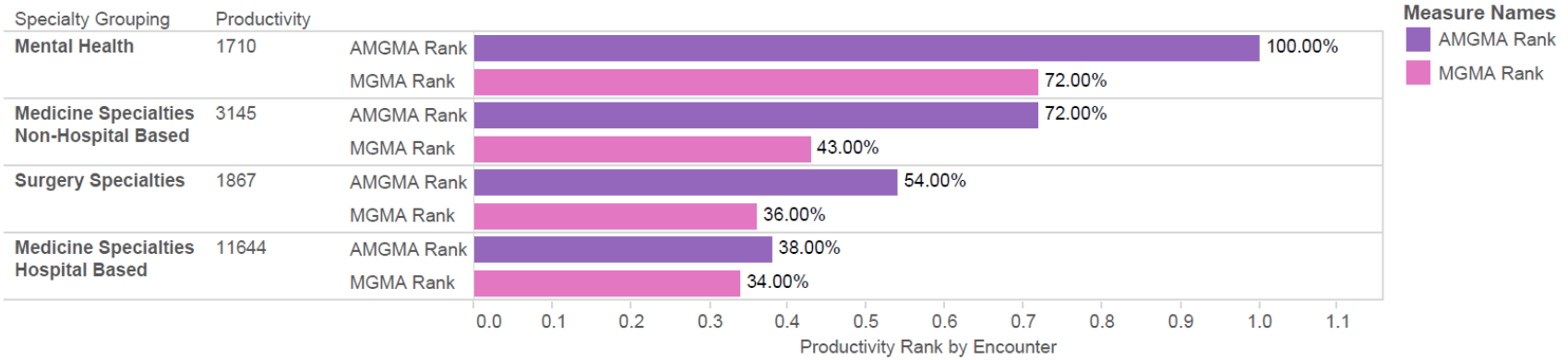
VHA mental health providers are more productive than many providers in the private sector when comparing wRVU production to AMGMA and MGMA benchmarks. They are more productive than the median of academic medical providers (AMGMA survey) and as productive as the providers in the MGMA survey, producing wRVUs at 73rd and 46th percentiles of survey respondents, respectively.

2.3.6.4 The productivity gap is smaller when VHA specialists are compared on encounters (Finding 8)

When encounters or visits are used as a measure of productivity, the gap shrinks and VHA specialty care providers compare more favorably to the private sector.

The Assessment G team analyzed encounters per provider FTE (clinical time, worked) compared with AMGMA and MGMA benchmarks as one measure of specialists' productivity. The encounters per provider comparison is shown in aggregate per facility in Section A.2

Figure 2-17. External productivity rankings by encounters[139]



Overall, VHA medical and surgical specialties, excluding anesthesiology and hospital-based specialties for example, radiology and pathology, compare favorably to academic medical center (AMGMA) benchmarks. VHA specialists see more encounters per FTE than the median private sector academic medical providers (AMGMA). When compared to the MGMA benchmark, VHA specialists drop to the 43rd and 36th percentile for non-hospital medicine specialties and surgical specialties, respectively. On the other hand, hospital-based specialties compare to the 39th and 34th percentiles, respectively.

[139] Assessment G analysis of Provider Detail FY14 provided by VHA OPES, February 26, 2015; Provider Labor Detail FY14 provided by VHA OPES April 9, 2015; AMGMA survey 2014; and MGMA survey 2014.

One reason for the variance between the non-hospital-based medicine and surgical specialties and the private sector may be VHA's PACT and population health focused care model. VHA's focus on the primary care medical home and the "gate keeper" role of the PCP as the key source of referrals may result in lower numbers of encounters downstream in specialty care which is reflected in the AMGMA survey and even more so in the MGMA benchmark, where specialists may operate more independently of primary care.

2.3.6.5 VHA mental health providers are more productive than industry (Finding 9)

VHA mental health providers are more productive than academic medical center (AMGMA) benchmarks, as measured by both wRVUs and encounters.

Similar to the wRVUs generated by VHA mental health providers, they see more encounters per FTE than almost all private sector academic medical providers. They are producing at the 100th and 72nd percentiles compared to AMGMA and MGMA surveys. Although some caution should be used when interpreting the AMGMA finding, since telephone encounters or "e-consults" were not included in the AMGMA survey, but account for an unknown proportion of VHA mental health encounters. One contributing factor to the higher number of VHA encounters may be the shift of VHA mental health providers to utilize more evidence based practices to increase access; this shift has resulted in more group therapy visits which increases the number of unique encounters compared to the private sector. Additionally, due to a higher incidence of psychological disorders, demand, and subsequently throughput, may also be higher for mental health specialists.

Overview of VHA telehealth encounters

VHA is a national leader in the use of telehealth. Its use has allowed VA facilities, especially rural hospitals and clinics, to address gaps in access to specialty care services; resulting in an increase in the number of encounters seen by providers. There are currently three distinct national telehealth platforms: Home Telehealth (HT), Clinical Video Telehealth (CVT), and Store-and-Forward Telehealth (SFT). These platforms are in place across 150 VAMCs and over 400 CBOCs. VHA's goal in FY15 is to provide elements of care to 1 million Veteran patients — 20 percent of its enrolled population — through telehealth services.[140] Since the PACT model was implemented in 2009, non-face to face care utilization has significantly increased. For example, while the total number of PACT patients has increased by approximately 10 percent, the number of telephone encounters has increased by over 10 times, and the number of secure messages has increased from just over 1,000 in 2010, to almost 600,000 in 2014.[141]

Tele-Ophthalmology and Tele-Dermatology are the two most used types of SFT. Tele-Ophthalmology takes an image of the back of eye or retina services and stores the image in the

[140] Darkins, A. (2014). The Growth of Telehealth Services in the Veterans Health Administration Between 1994 and 2014: A study in the Diffusion of Innovation. *Telemed J.E. Health*. doi: 10.1089/tmj.2014.0143.

[141] Shear, J. Clinical Program Manager, VHA Office of Clinical Operations, VHA. (n.d.).VHA Transformation to a PCMH Model of Care Presentation. Retrieved from v.congresocronicos.org/documentos/ponencias/joanne-shear.pdf.

patient's electronic health record (EHR). This allows a provider at another location to read the images and communicate findings and recommendations to the primary care provider. Similarly, Tele-Dermatology utilizes photo imaging of skin conditions and abnormalities, such as skin lesions or dermatitis, and sends the image via the patient's EHR to a specialist provider at another location. Telehealth service platforms of care such as those using SFT, increase access to care, providing Veterans with specialized services that may otherwise be unavailable (this is especially relevant for rural Veterans). With respect to HT services, there is initial evidence that the provision of HT services decreases mortality and reduces costs.[142,143]

According to Darkins in the article, "*The Growth of Telehealth Services in the Veterans Health Administration Between 1994 and 2014,"* in FY 2013, 45 percent of Veteran patients whose care was supported by VHA telehealth lived in rural areas.

National patient satisfaction surveys conducted by VHA's National Telehealth Services Office[144] reflect high Veteran satisfaction with telehealth services. Additionally, although more studies need to be done in this area, there appears to be a correlation between telehealth and productivity; telehealth has the potential to positively impact productivity. For example, rather than hire a provider, a provider with extra capacity can care for the additional patients at satellite facilities (this is particularly applicable with SFT telehealth services, as providers can see SFT patients during any unscheduled downtime in between patients). To comprehensively assess the impact on productivity, VHA will need to work on standardizing coding policies for telehealth services and ensuring that all sites of care and their providers are aware of and understand these policies.[145]

The utilization of telehealth to address Veteran demands for care helps alleviate common access challenges due to geographic location (patient does not reside near a VAMC) and provider shortage issues that mostly afflict rural Veterans. For example, VA Montana HCS has two telehealth Outreach Clinics: Hamilton CBOC and Plentywood CBOC. Both are located in rural areas, with a population of less than 5,000 in Hamilton, MT, and less than 2,000 in Plentywood, MT. [146] As such, there is low demand for VA health care; yet, those Veterans who

[142] Darkins, A., Kendall, S., Edmonson, E., Young, M., Stressel, P. (2015). Reduced cost and mortality using home telehealth to promote self-management of complex chronic conditions: a retrospective match cohort study of 4,999 Veteran patients. *Telemed J.E Health*. doi: 10.1089/tmj.2014.0067.

[143] VHA National Telehealth Services Offices. (May 13, 2015). Interview with MITRE and Grant Thornton. VHA Staffing Assessment.

[144] Darkins, A. (2014). The Growth of Telehealth Services in the Veterans Health Administration Between 1994 and 2014: A study in the Diffusion of Innovation. *Telemed J.E. Health*. doi: 10.1089/tmj.2014.0143.

[145] VHA National Telehealth Services Offices. (May 13, 2015). Interview with MITRE and Grant Thornton. VHA Staffing Assessment.

[146]U.S Census Bureau. (2014) Retrieved from http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2014_PEPANNRES&prodType=table

do live in the area are able to access care at these CBOCS. These clinics have limited hours of operation and are run by a small team (Registered Nurse [RN] and telehealth operators) and provide only telehealth visits.[147] This allows for Veterans to access their providers for episodic care (e.g. colds, consults) that does not require them to travel, in some cases, hundreds of miles to the main VAMC facility.

2.3.6.6 The most productive VHA specialists are often more productive than private sector benchmarks (Finding 10)

Overall, VHA specialty care providers are producing fewer wRVUs than private sector benchmarks; however, VHA specialty care providers at the highest complexity facilities are more productive than their peers. Further, the most productive VHA providers (those at the 75th percentile of VHA providers) are often more productive than the private sector.

VA medical facilities can vary widely in terms of their size and complexity of services offered, (VA groups its 151 medical facilities into highly complex - level 1a, 1b, and 1c, moderate complexity - level 2, and low complexity - level 3, facilities). More complex facilities tend to have academic affiliations, with teaching and research programs, whereas lower complexity level facilities may be located in more rural areas and do not have these programs. The larger, more complex facilities (1a complexity vs. 2 complexities) compare better using both encounters and wRVUs. One factor may be that these facilities simply have higher patient demand and consequently clinic throughput. This would tend to increase the number of encounters per provider. The larger facilities may treat patients with a wider variety of diseases and conditions simply due to the number of specialties offered, and tend also to have a larger number of providers who are dual appointees and have strong relationships with their affiliate institutions. Dual appointees may carry over certain behaviors such as chart closure within 24 hours, accurate charge capture, and physician involvement in denial management that encourages workload capture and consequently generates more wRVUs.

A Service Chief stated that *"Part Time providers from [the affiliate] across the street know how to [code]….We need to get with the coders to [understand how to educate] providers on how to maximize documentation."*

[147] As observed on Assessment G site visits.

Promising Practice: John D. Dingell VAMC – Detroit

At the John D. Dingell VAMC in Detroit, facility leaders found productivity within a specialty clinic was below the national median for VHA. They investigated and found that workload within the clinic was not being captured accurately. The Section Chief trained providers in better coding practices. The accuracy of productivity measurement, and consequently the clinic's ranking, increased.

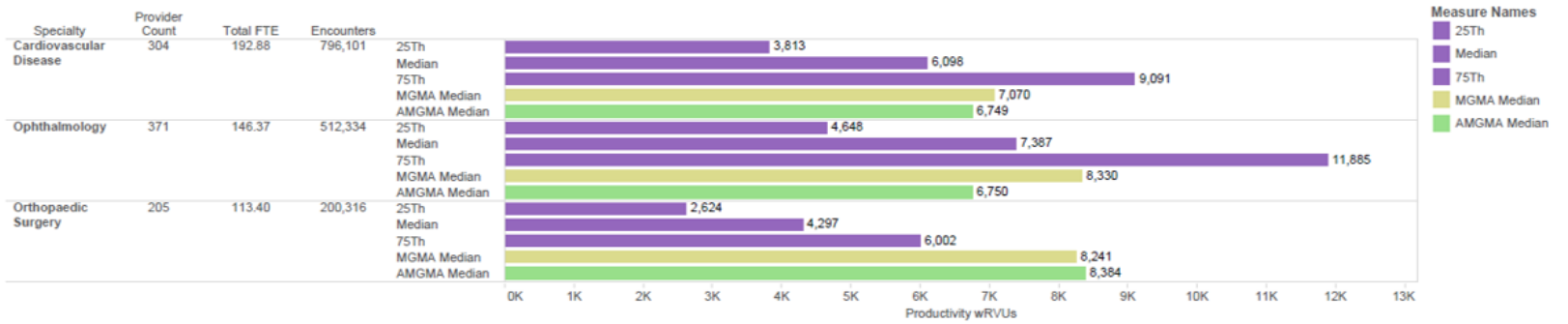
Value: The facility highlighted this success story to other clinics and as a result clinic leaders' awareness of the importance of accurate coding to measure productivity improved.

The Assessment G team compared the productivity of VHA specialties (measured in wRVUs) at Level 1a (high complexity) and level 3 (low complexity facilities) with external benchmarks (AMGMA and MGMA). A case study analysis of wRVUs per provider FTE (clinical, worked) is provided for three specialties (cardiovascular disease, ophthalmology, and orthopedic surgery) in Figure 2-18.

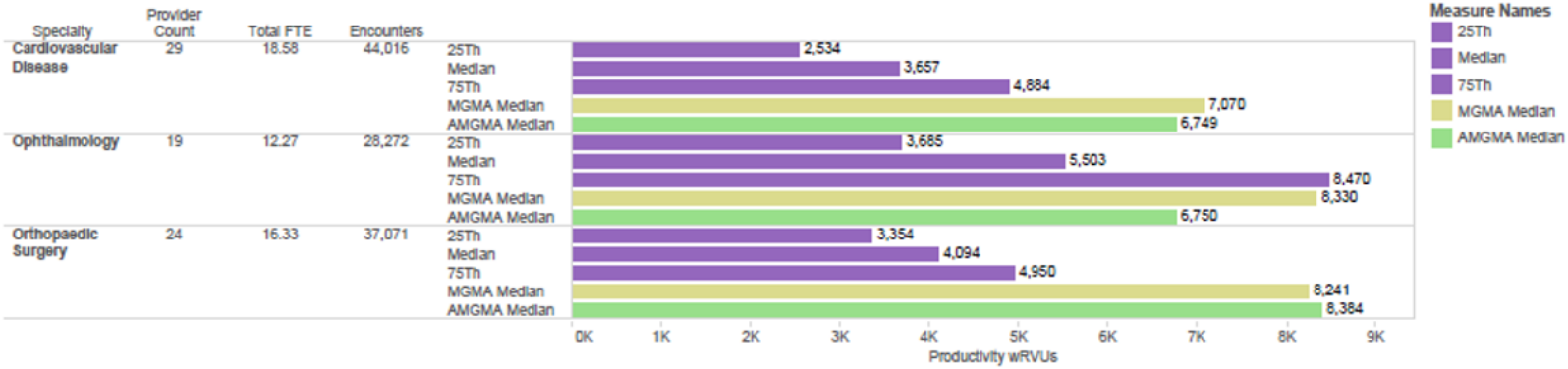
For Figure 2-18, Assessment G analysis Provider Detail FY14; provided by VHA OPES, February 26, 2015 and Provider Labor Detail FY14 provided by VHA OPES April, 9, 2015; AMGMA survey 2014; and MGMA survey 2014.

Figure 2-18. Benchmark case study - level 1a and level 3

Level 1a Complexity Facilities



Level 3 Complexity Facilities



For cardiovascular disease, providers at VA complexity level 1a facilities are just as productive as the median of MGMA and AMGMA providers, for example 6,098 versus the median of 6,749 wRVUs for AMGMA providers. However, the providers at VA complexity level 1a facilities benchmarking above the median (75th percentile of VHA providers) produce significantly more wRVUs than the rest of the industry for example, 9,091 versus the median of 6,749 wRVUs for AMGMA providers. When comparing complexity level 1a facility providers using encounters as a measure of productivity, they have 1.7 percent more encounters than the median of MGMA providers and 26 percent more encounters than the median of AMGMA providers. One explanation for this result may be the care needs of a sicker Veteran patient population, with higher rates of cardiovascular disease and other co-morbidities (see Assessment A) which results in more referrals, follow-up visits and higher intensity visits to manage chronic heart conditions.

At VA complexity level 3 facilities, providers specializing in cardiovascular disease produce only half of the median production of MGMA and AMGMA providers. The median wRVUs of the most productive VHA providers (those at 75th percentile) at complexity level 3 facilities is closer to external benchmarks, for example, 4,884 versus the median of 6,749 wRVUs for AMGMA providers. When comparing complexity level 3 facility providers using encounters as a measure of productivity, they look more similar to industry: VHA providers produce encounters at 63 percent and 78 percent of MGMA and AMGMA providers, respectively (Note: encounter benchmark data is not shown).

For ophthalmology, a specialty that tends to be highly productive (when measured by wRVUs) due to the demand at VA facilities, providers at complexity level 1a complexity facilities compare favorably with industry benchmarks. At VA complexity level 1a facilities, providers specializing in ophthalmology are move productive than the median production of AMGMA providers and produce at the 89th percentile of MGMA providers. Similarly, providers at complexity level 1a facilities at the 75th percentile of VHA providers produce significantly more wRVUs than the rest of the industry, for example, 11,885 versus the median of 6,750 wRVUs for AMGMA providers and 8,330 wRVUs for MGMA providers.

At VA complexity level 3 facilities, the majority of providers specializing in ophthalmology produce only 81 percent and 66 percent of wRVUs produced at the median of AMGMA and MGMA providers, respectively. The most providers at VA complexity level 3 facilities at the 75th percentile of VHA providers are more productive than the rest of the industry, for example, 8,470 versus the median of 6,750 wRVUs for AMGMA providers and 8,330 for MGMA providers.

For orthopedic surgery, a specialty that tends to be highly productive due to the number of outpatient procedures performed in the private sector, providers at VA complexity level 1a and level 3 facilities produce approximately half of the wRVUs compared to the rest of the industry. The most productive providers (those at the 75th percentile of VHA providers) at VA complexity level 1a facilities are closer to the median external benchmarks; VHA providers at the 75th percentile are producing 72 and 73 percent of the wRVUs of the AMGMA and MGMA median benchmark. Comparing encounters, the median productivity of VHA providers at complexity level 1a facilities increases to 68 percent of the median of AMGMA providers. For VHA

providers at complexity level 3 facilities, productivity as measured by encounters increases to 82 percent of the median of AMGMA providers.

The differences from the private sector may be the result of lower utilization of elective procedures performed at VAMCs. Since VHA's population health focused model emphasizes management of chronic disease to prevent overutilization of services to improve patient outcomes, lower utilization of elective procedures would not be surprising. This finding is also observed in general surgery and otolaryngology. Surgical specialties that are highly utilized on an encounter per FTE basis in both the private sector and VA, include colorectal surgery, ophthalmology, hand surgery, and vascular surgery. Additionally, the shortage of specialty providers, such as orthopedic surgeons, in rural communities, may account for the higher numbers of encounters seen by complexity level 3 facility providers.

Additional detailed review of encounters is needed to better understand the relationship between encounters and Veteran access to care. Higher numbers of (than benchmark) encounters, but low patient access may be a result of inefficient scheduling processes, but would require an in depth analysis to confirm. Managing patient access requires a delicate balance between new and established or return patients. Too much of one or the other can decrease access to care. For example, if you increase the number of new patients from 2 to 4 seen by a provider in a given afternoon clinic which is traditionally 4 hours, there will be fewer appointments available for established patients as new patient appointments traditionally are longer, 30 minutes vs. 60 minutes respectively.

2.3.6.7 Productivity should be looked at in combination with access

Access is often considered as a key performance measure, along with productivity. Further, the ability to see more patients by increasing or improving access should result in higher RVU production. However, higher productivity is not necessarily associated with better access to care. Similar barriers might affect both access and productivity, such as: insufficient numbers of providers, insufficient numbers of clinical and/or administrative staff, and/or inconsistent clinic hours of operation and poor scheduling practices. Providers might be incentivized to focus on high wRVU procedures, at the expense of patients seeking access to care for simpler (lower wRVU) conditions.

High performing health care systems are increasingly looking at access in conjunction with productivity. By comparing these two measures, clinic leaders can better understand provider behavior and set targeted productivity goals or implement changes to improve access, such as: freeing up appointment slots for new patients, providing extended hours, or making changes to support staff mix.

Combined analysis of productivity and access is an important component in population health and/or value-based care models, which, like VHA, focus more on patient outcomes over volume. Minimum volume thresholds are still needed to maintain cost effectiveness and quality, as well as justify staffing ratios.

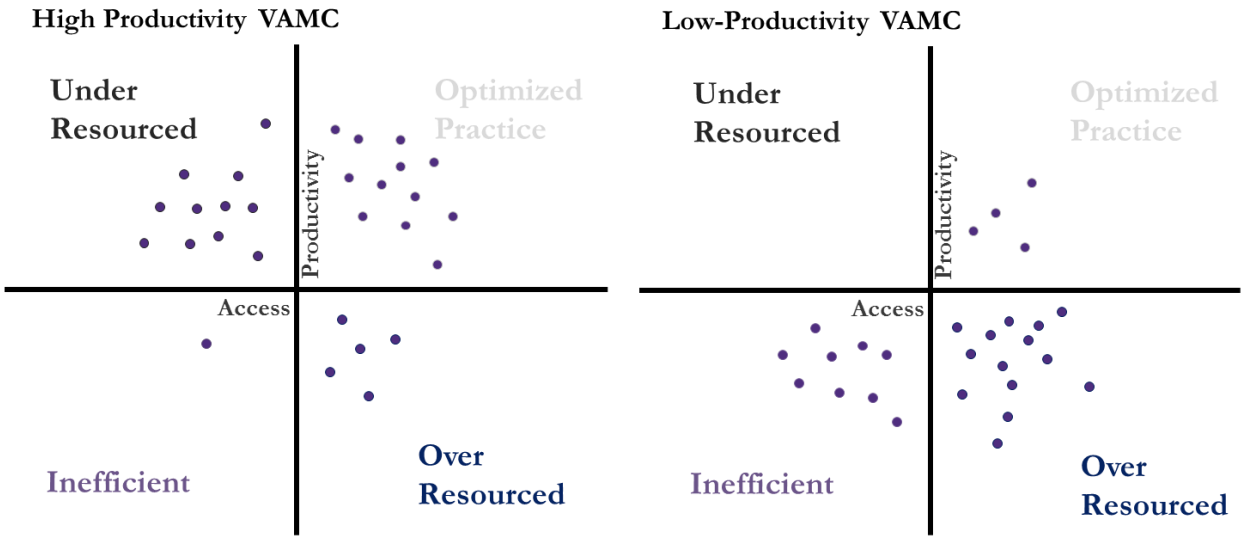
2.3.6.8 VHA's framework of productivity and access measures is a best practice (Finding 11)

Productivity and access are important measures in population based health models like VHA that focus on patient outcomes, rather than volume. VHA OPES reports on productivity and access offer tools for use by medical facilities. With some improvements to expedite adoption and regular use by medical centers, these tools could become key resources in optimizing productivity and maximizing access to care.

VHA OPES has developed a Relative Value Unit based modeling tool (SPARQ) to measure specialty provider group practice level based productivity, staffing and access. Assessment G used the SPARQ tool (see Figure 2-19) to assess the difference between a specialty group practice's productivity and access levels, and projected resource needs. The SPARQ tool combines practice-level productivity and access metrics into an Importance-Performance Analysis (IPA) framework, a two-dimensional Cartesian coordinate system divided by two axes that form four quadrants. Scores representing productivity are plotted on the vertical axis (y axis) and scores representing access on the horizontal axis (x axis). To understand how productive specialty practices are, the SPARQ tool uses probability distributions, a way of calculating the probability of a given productivity or access level occurring. The SPARQ tool makes the assumption that productivity and access are normally distributed by complexity group and specialty, or facility. Therefore, the SPARQ tool measures practices on the normalized scores referred to as the z-scores for productivity and access. The z-scores follow standard normal distribution and are calculated as practice productivity (or practice access, defined by one of five different measures) minus the mean productivity (or mean access), divided by the respective standard deviation.

Each specialty is categorized into a quadrant based on whether it has high or low access, and high or low productivity. However, neither productivity nor access alone tell the whole story.

Figure 2-19. SPARQ tool example[148]



If we use dermatology as an example (see Figure 2-19), there are twelve facilities with high productivity, but decreased access to care (low proportion of patients seen within the 30 day access standard). These dermatologists see his/her full capacity of patients/day, but cannot meet patient demand. In this case, the SPARQ tool scores these facilities as potentially having insufficient resources. However, further examination may uncover operational inefficiencies such as truncated clinic hours, space issues, and/or insufficient clinical staff. Note that the example presented here for dermatology is not a direct extract from VHA's SPARQ tool but symbolizes a visual depiction of real data.

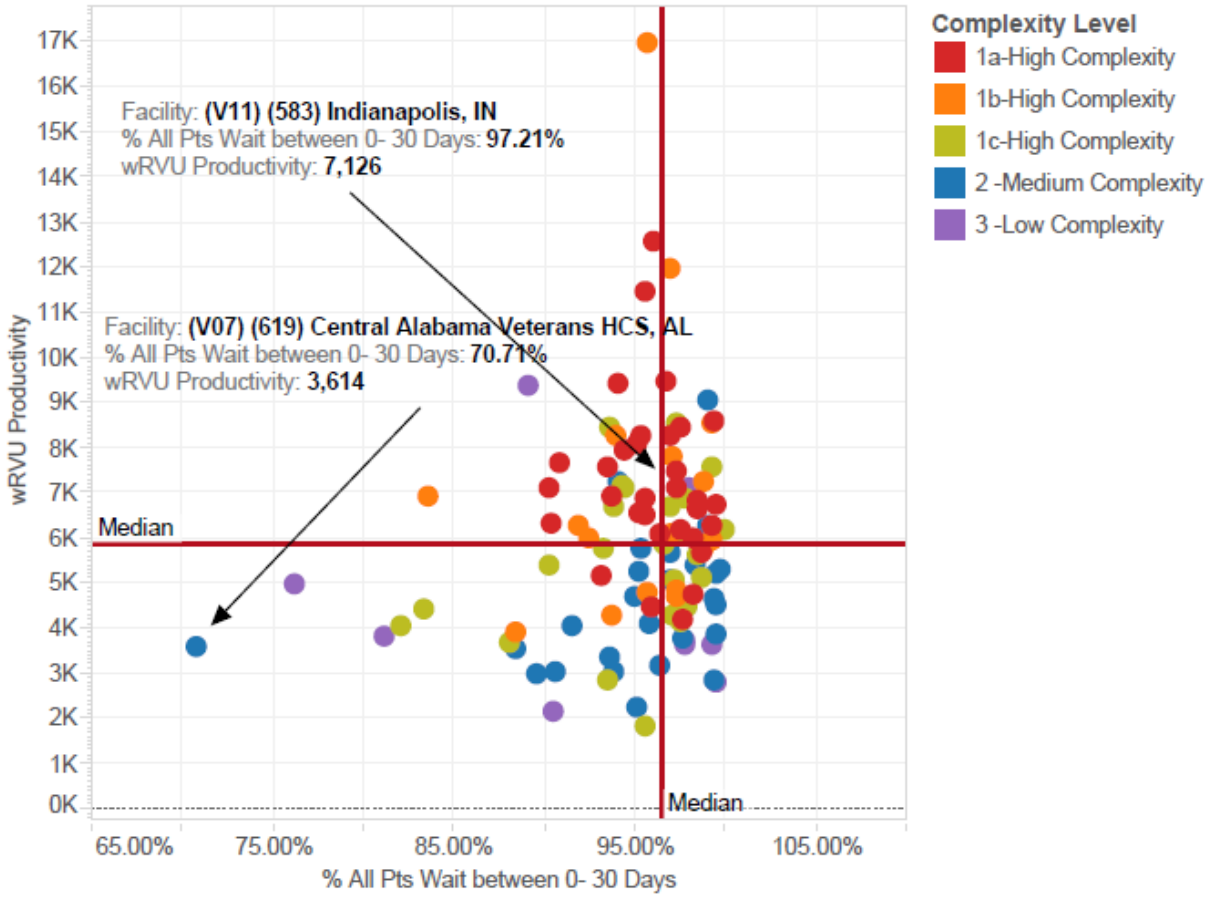
The Assessment G team also analyzed how access and productivity differ within specialties across all facilities and all complexities. Figure 2-20 compares the access metric, Patients Wait between 0- 30 Days[149] to wRVU Productivity (this is the wRVUs per clinical FTE) for cardiology. Of note, VHA cannot validate the reliability Patients Wait Between 0- 30 Days metric as it is a provided output of a SPARQ report; as such, this data must be considered carefully.[150]

[148] Figures were created by the Assessment G team using VHA OPES SPARQ tool reports from two facilities.

[149] This measure is one of five available access measures available in OPES SPARQ reports, and is managed by VHA's Access and Clinic Administration Program. It indicates the percentage of all patients who are able to obtain an appointment within 30 days of request (effectively the percent who receive an appointment within VHA's access standard of 30 days).

[150] McKinsey & Co. (2015) Veterans Choice Act Assessment E Report

Figure 2-20. Productivity vs. access analysis - cardiology[151]



Facilities that fall toward the lower right quadrant of the graph exhibit lower productivity (below the median of VHA cardiology providers of 5,841 wRVUs) but generally good access (above the median, more than 96 percent of cardiology patients are seen within 30 days). This placement could be a result of low patient demand. For example, VA specialty funded or mandated clinics may implemented by facilities without consideration of demand. Additionally, our team recommends future analysis on the effect of a 40 hour work week on access and productivity. To increase access, some private sector health care systems have been increasing clinical contact hours from 32 to 40 hours a week. As a result of this private industry trend toward more clinical contact hours, hours worked is no longer a valid measure to assist in driving access or as a measure of productivity.

Facilities that fall in the upper left quadrant exhibit higher productivity (above the median of VHA cardiology providers) and poor patient access (below the median, less than 96 percent of

[151] Assessment G analysis of data form VHA OPES SPARQ tool (access data) provided December 2014 for all FY2014 and productivity analysis which used the ProviderDetailFY14 file, provided April 9, 2015.

cardiology patients are seen in 30 days). These facilities are productive but may need additional staff, space, or resources to open up slots for patient access. Facilities that fall in the upper right quadrant appear to have high access and high productivity. These facilities represent the highest performers. Further study of the unique characteristics of practice arrangements and service line operations within these facilities will allow VHA to identify replicable best practices.

Generally, facilities with lower complexity levels (Level 2 and Level 3, see blue and purple dots, respectively) appear less productive (above the median of VHA cardiology providers), but have good patient access (96 percent of cardiology patients seen within 30 days). Lower complexity facilities will typically have fewer highly complex, heavily procedural medical and surgical specialties which tend to generate more wRVUs. Good patient access may be a result of the implementation of local policies and procedures that open up slots for new and established patients.[152]

2.3.7 Dental Providers

For dental care, patient visits per year is an appropriate measure for comparing VHA dentists with industry providers. To assess the productivity of VHA dentists, we considered the ways in which VHA measures the performance of its dental providers. We found that VHA has developed an RVU metric, as well as metrics for procedures performed per year and average number of patient visits per year. We found that dental productivity measures do not typically exist in the private sector. We were able to obtain benchmarks from the American Dental Association for dental providers' average number of annual visits, which we compared to VHA dentists.

2.3.7.1 Summary of findings and analysis for dental

Data and observations from benchmarking and site visits yielded the following main finding. The sub-sections that follow describe the findings for dental providers in detail. Information on the factors that we believe to be the drivers of these findings are presented in Section 2.3.7.5.

Finding 12. VHA dentists see fewer patients on average than private sector benchmarks, but serve a population with special needs. The dentistry patient population of VHA generally has a compensable service-connected dental disability, is older, has more complex injuries, and may present for dental care following years of dental neglect. (See Section 2.3.7.4).

2.3.7.2 VHA has industry leading productivity measures

A total of 818 VHA dentists (based on FY14 Worked FTE figures) provide dental care for approximately 450,000 Veterans at VA medical facilities nationwide each year. There are 22 classifications of eligibility for dental care that can be grouped into five major scopes of care, with Class I, IIA, IIC, and IV designating eligibility for comprehensive, life-long dental benefits. VHA has industry leading productivity measures and tracking tools to inform and manage the performance of its dental providers. VHA has developed a set of productivity measures for its

[152] New patients seeking care wait 30 days or less for an appointment.

dental providers that include wRVUs, procedures performed per year, and average number of patient visits per year. Dental productivity measures do not typically exist in the private sector.

2.3.7.3 Limited benchmarks exist for dental provider productivity

Unlike other health care specialties, where wRVUs and other productivity measures are widely available and used, productivity is not typically measured in the private sector for dental providers. As such, there were limited studies available for benchmarking. A study of 829 Oregon general dentists conducted in 2006 on hours worked, practice size, payment and patient mix, prices, dentist visits, and dentist characteristics, is one of the few studies available, separate of the ADA data.[153] However, the only available and nationally collected metric utilized (which comes from ADA) is visits per year. While VHA tracks procedures per year, there is no applicable external benchmark or industry performance metric to which comparisons can be made. Additionally, there is no dental relative value unit (RVU) scale managed by CMS, as is the case in other health care specialties.

VHA developed a method for assigning relative value units (RVUs) for dental work completed more than ten years ago, and has continually refined this method.[154] As an internal system, these RVUs have not been adopted by the general dental community and thus are only used to make comparisons on an internal system level. This represents an area where VHA is the leader in developing best practices for review methodology, and one that they utilize extensively to internally benchmark their providers and use as a tool to assess and manage productivity.

VHA developed its RVU scale and standards for facilities and VISNs after several meetings with VHA dental specialty leaders, and in 2011, conducted a comprehensive assessment of productivity across the system.[155] That study observed significant variation in dentist productivity between sites with residency programs and those without, and resulted in the creation of two models for dental programs; one for each group. The study also provided valuable insight into strategies for increasing productivity per provider, one of which involved increasing assistant to dentist ratios. For example, it noted that there is a significant increase in productivity when the ratio of assistants to dentists is at or greater than 1.75:1.[156]

At a national level, the office of the Assistant Under Secretary of Health for Dentistry actively monitors productivity of provider groups across VHA, and provides tools that facilities can use. They created an internal tool to identify outliers, particularly sites that may be at risk. This tool includes patient demand and RVUs over the last 12 months, comparing internal performance to non-VHA care (more specifically, the proportion of care being sent for non-VHA care).[157] Although we noted that productivity monitoring and decision tools for other specialties created

[153] Conrad, D. A., Shuk-Yin Lee, R., Milgrom, P., & Huebner, C. E. (2010). Estimating Determinants of Dentist Productivity: New Evidence. Journal of Public Health Dentistry, 70(4). doi:10.1111/j.1752-7325.2010.00180.x

[154] Telephone interview with VHA Dental Program, December 30, 2014 and January 5, 2015.

[155] VHA Office of Dentistry (2012).Variables Affecting Dentist Productivity, Workforce Study, 2011, Published April 2012.

[156] Ibid.

[157] Telephone interview with VHA Dental Program, December 30, 2014 and January 5, 2015.

by OPES have varied use (these were created much more recently), we frequently observed that dental service leaders at facilities are actively involved in monitoring their practice productivity using the tools provided by the dental leadership in VHA.

Providers are measured in RVUs per hour, and are actively involved in managing their own productivity. National leadership consults with facility leadership when headquarters observes outliers. We consistently noticed on site visits that dentists were aware of their productivity performance, and that dental service chiefs were actively monitoring the performance of their clinics, and taking steps to improve performance when it was out of range compared to national VHA dental productivity and peer facilities.[158]

2.3.7.4 VHA dentists see fewer patients than private sector benchmarks, but serve a population with special needs (Finding 12)

VHA dentists see fewer patients on average than private sector benchmarks, but serve a population with special needs. The dentistry patient population of VHA generally has a compensable service-connected disability, is older, has more complex injuries, and may present for dental care following years of dental neglect.

The majority of VHA dental providers' number of annual visits are comparable to industry when benchmarked to the 2010 American Dental Association Survey of Dental Practices. While variances exist between dental subspecialties, the majority of dental providers employed by VHA (75 percent) are classified in the "Generalist" category of dentists, and compare significantly more favorably (81 percent of the ADA benchmark average) compared to their specialist counterparts overall to industry peer productivity. The largest groupings of providers that lag behind expected visits per year (caseload) are the specialists, where there are fewer providers employed in the system (such as endodontics, with only 10 worked FTEs across the nation). The surgical subspecialties in particular lag industry visits per year, though significant differences in the delivery model and capabilities on-site are factors that must be considered when evaluating dental productivity. Additionally, the specialist benchmark for average patient visits per year is significantly higher (4,146 visits) compared to the benchmark for general practice dentists (2,224). With significant financial pressures in the private practice to see as many patients as possible for specialty care, direct comparisons to the VHA model of care delivery for similar specialties may not be as applicable. Table 2-5 shows VHA dental productivity and staffing compared to the benchmarks.

[158] Assessment G Site Visits.

Table 2-5. VHA dental productivity and staffing (FY14)

VHA-Designated Specialty	VHA Total Worked FTEs	VHA Clinical FTEs (cFTE)	VHA wRVU/ cFTE	VHA RVU/cFTE Median	VHA Procedures /cFTE	VHA Visits/cFTE (FY 2014)	ADA Benchmark Visits/Year	% of ADA Benchmark Average
Dental Public Health	6	5	137,233	116,619	5,178	2,163	2224	97%
Endodontics	10	9	108,036	93,711	2,649	1,221	4146	29%
General Practice*	610	525	116,587	109,264	3,974	1,811	2224	81%
Oral and Maxillofacial Pathology	5	5	116,194	111,931	3,691	1,644	4146	40%
Oral and Maxillofacial Radiology	2	1	238,342	111,931	9,037	4,801	4146	116%
Oral and Maxillofacial Surgery	52	44	150,400	130,667	4,847	1,914	4146	46%
Orthodontics and Dentofacial Orthopedics	3	2	125,421	111,041	3,952	2,077	4146	50%
Periodontics	41	33	107,574	94,104	3,944	1,694	4146	41%
Prosthodontics	83	72	121,271	105,578	3,769	1,815	4146	44%
Oral and Maxillofacial Surgery – OMFS	6	5	116,857	123,800	3,913	1,904	4146	46%
Total	**818**	**701**	**118,962**	**—**	**4,000**	**1,810**	**—**	**—**

***** *"Dentists – General Practice" and "Dentists – Not Specified" from our VHA data set were combined into a single "General Practice" category since they both represented non-specialty care Dentists. Table represents Assessment G analysis of VHA dental data, specifically Aggregate Dentist FY14, provided by VHA Office of Dentistry, April 13, 2015, and ADA survey data (2010). FTE Totals calculated from Worked Hours.*

2.3.7.5 Several factors may contribute to the differences between VHA dentists and the private sector

Some of the key reasons for the differences between VHA dental providers' patient visits and the private sector relate to the characteristics of the patient population. There are 22 classifications of eligibility for VHA dental care, with Class 1 eligibility (full dental care coverage) requiring the Veteran to have a compensable service-connected dental disability.[159] Class IV eligibility (which covers all other medical disabilities) is the most common classification, representing approximately 70 percent of all patients who receive dental care.[160] As a result, the dentistry patient population of VHA is generally older, has more complex injuries, and may present for dental care following years of dental neglect.[161] In contrast, according to the 2010 ADA Dental Survey the majority of patients seen (64.9 percent) in the private sector are under the age of 55. In addition, the private sector population is 55.6 percent female, with only 6 percent of patients having public-assisted insurance (63.6 percent covered by private insurance and 29.4 percent covered by self-pay). Further, only 38.4 percent of private practice dental providers saw any patients who were covered through public assistance.[162] These are significant differences compared to the VHA population, especially those who qualify specifically for full Class 1 eligibility.

> *"The main difference between VHA dental care and a private setting is the fact that we do not sell dental services. For example, many private offices will push whitening and diagnostic procedures such as tongue scanning on their patients. Here at the VHA, there is no pressure to drive revenue, so we can practice dentistry and do what is needed for our patients."*
> *– VHA Dentist at a Level 1 Facility*

In addition to hearing about the major differences in dental patient population from VHA senior leadership, we consistently heard similar experiences from dentists and dental service line leaders during our site visits. These significant differences in prevalence of co-morbidities and physical debilitations can frequently make the delivery of care time consuming and challenging. The prevalence of mental health disorders amongst the population base also contributes to longer visit times. For example, one dentist reported that being exposed to a drill can evoke a significant amount of distress and discomfort tied to Post Traumatic Stress Syndrome and other disorders. Another dentist noted that procedures can sometimes take two-to-four times as long as the private sector for these types of reasons; the same provider noted that the dentist may sometimes have to consult the patient's primary care provider in the middle of the appointment, adding additional time to appointment length. One dental chief at a complexity

[159] U.S. Department of Veterans Affairs. (2013) VHA Handbook 1130.01, Veterans Health Administration Dental Program. Retrieved from http://www.va.gov/VHAPUBLICATIONS/ViewPublication.asp?pub_ID=2867.

[160] Email correspondence with VHA Office of Strategic Planning and Analysis, July 22, 2015.

[161] Telephone interview with VHA Dental Program, December 30, 2014 and January 5, 2015.

[162] ADA. (2010). 2010 American Dental Association Survey of Dental Practices: Characteristics of Dentists in Their Private Practices and Their Patients. Retrieved from http://www.ada.org/en/publications

level 1 facility specifically described how his productivity is hampered by certain aspects of the VHA patient population. He noted that he often spends time allowing some patients to relax in the dental chair while waiting for their blood pressure to go down before he can begin procedures.

2.3.8 Barriers to VHA providers' productivity

The Assessment G team conducted research to identify the factors that may impact the productivity of VHA providers and help explain why there are differences with private sector benchmarks of productivity. In doing so, we conducted:

- Literature reviews of VHA policy documentation and directives
- External literature reviews
- Participation in site visits to High Performing Health Care Systems
- Interviews with VHA central office leaders and subject matter experts
- VHA site visit observations at 24 VA medical centers and CBOCs
- Interviews with over 700 providers and facility leaders at VA medical centers and CBOCs
- More in-depth reviews of nurse staffing practices at seven VA medical centers

We conducted a root cause analysis exercise to determine those factors which contributed most to the differences between VHA provider productivity and external benchmarks. The key findings are summarized first, followed by a detailed discussion of our findings.

2.3.8.1 Summary of findings

We have synthesized the findings from our assessment to identify what may be the most important drivers of the productivity of VHA providers. These are listed here.

- **Finding 13.** Insufficient exam rooms and poor configuration of space limits providers' productivity, ability to maximize patient throughput and reduces patient access. (See Section 2.3.8.3)
- **Finding 14.** Clinical and administrative support staff ratios are insufficient and may limit provider productivity. (See Section 2.3.8.4).
- **Finding 15.** Insufficient clinical and administrative support staff results in providers and clinical support staff not working to the top of their licensure. (See Section 2.3.8.4.1).
- **Finding 16.** While there has been widespread implementation of the PACT model in primary care clinics and the National Nurse Staffing Methodology in many areas of inpatient care, there are no current VHA standards for staffing levels and/or mix in specialty clinics, with the exception of eye clinics. Furthermore, VHA OPES has developed state of the art tools for managing staffing and productivity, but these tools will require improvements for leaders to more effectively leverage them in resource decisions. (See Section 2.3.8.4.2)
- **Finding 17.** Organizational siloes and separate reporting lines exist for physicians, nurses and medical service administrators at a majority of VAMCs. As a result, service chiefs do

not have control over the resourcing and performance of their clinical support staff (nurses) or clerical and administrative support staff. (See Section 2.3.8.4.3)

- **Finding 18.** Many facilities do not have a centralized staffing office or nurse float pool to address daily staff variances or absences. (See Section 2.3.8.4.4)
- **Finding 19.** During site visits and interviews with VHA Central Office leaders, we consistently heard concerns that providers do not fully document and accurately code all of their clinical workload. (See Section 2.3.8.5).

2.3.8.2 Providers identified several barriers to optimizing productivity

The Assessment G team interviewed over 700 providers and facility leaders through the course of twenty four site visits to VA medical facilities. In doing so, we identified several barriers to optimizing productivity.

The following two figures illustrate the ten most common issues or barriers to optimizing productivity, as reported by providers, and by facility leaders, on our site visits. There was a high degree of consistency between the factors identified by providers and facility leaders.

Many of these barriers are not unique to VHA; in fact, private sector health care systems face the same barriers to provider productivity. It is also important to note that these barriers are in many cases, highly interdependent. As such, addressing one barrier, may not mitigate productivity challenges, and could even exacerbate another issue. For example, if a facility lacks adequate support staff, adding additional support staff may not increase productivity if there are not additional rooms for those support staff to use; for example, if a provider has one exam room in clinic, but no clinical support staff, he or she likely retrieves patients from the waiting room and checks vitals and take the patient's history himself/herself. If that provider was allocated a nurse, but no additional room; the provider still could not have a nurse preparing the patient while he/she was seeing another patient. Below we elaborate on each barrier, and the associated findings. Figure 2-21 and Figure 2-22 were created using Assessment G analysis of site visit data.

Figure 2-21. 10 Most common productivity issues or barriers according to providers

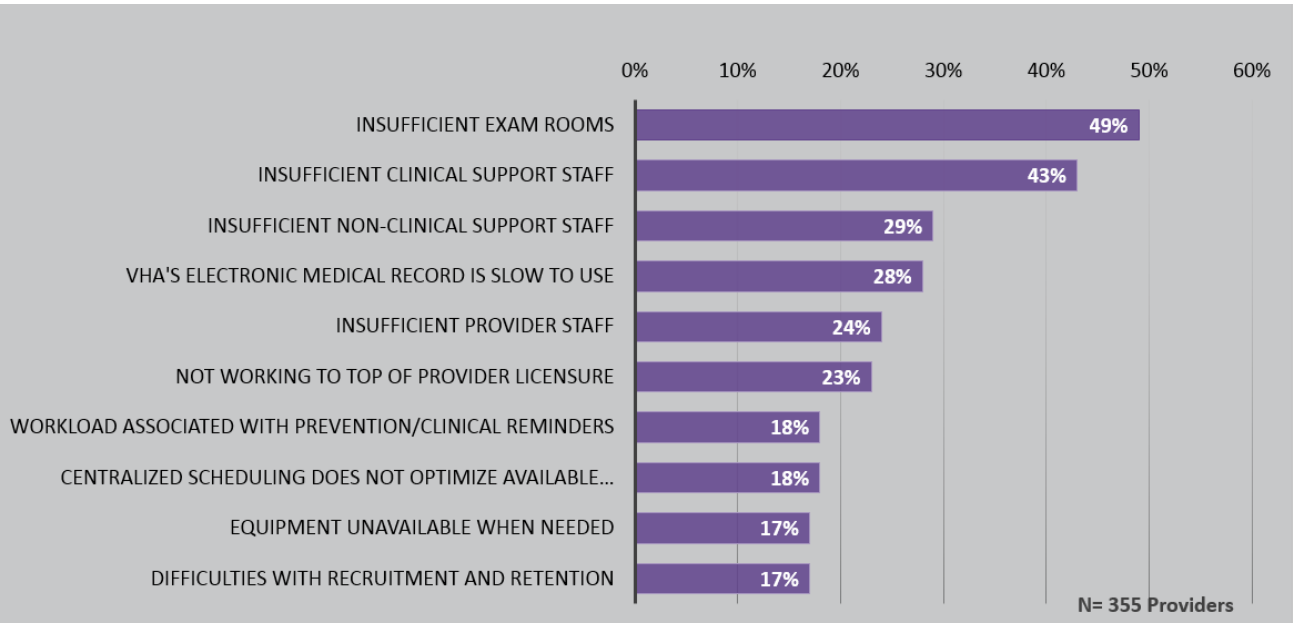
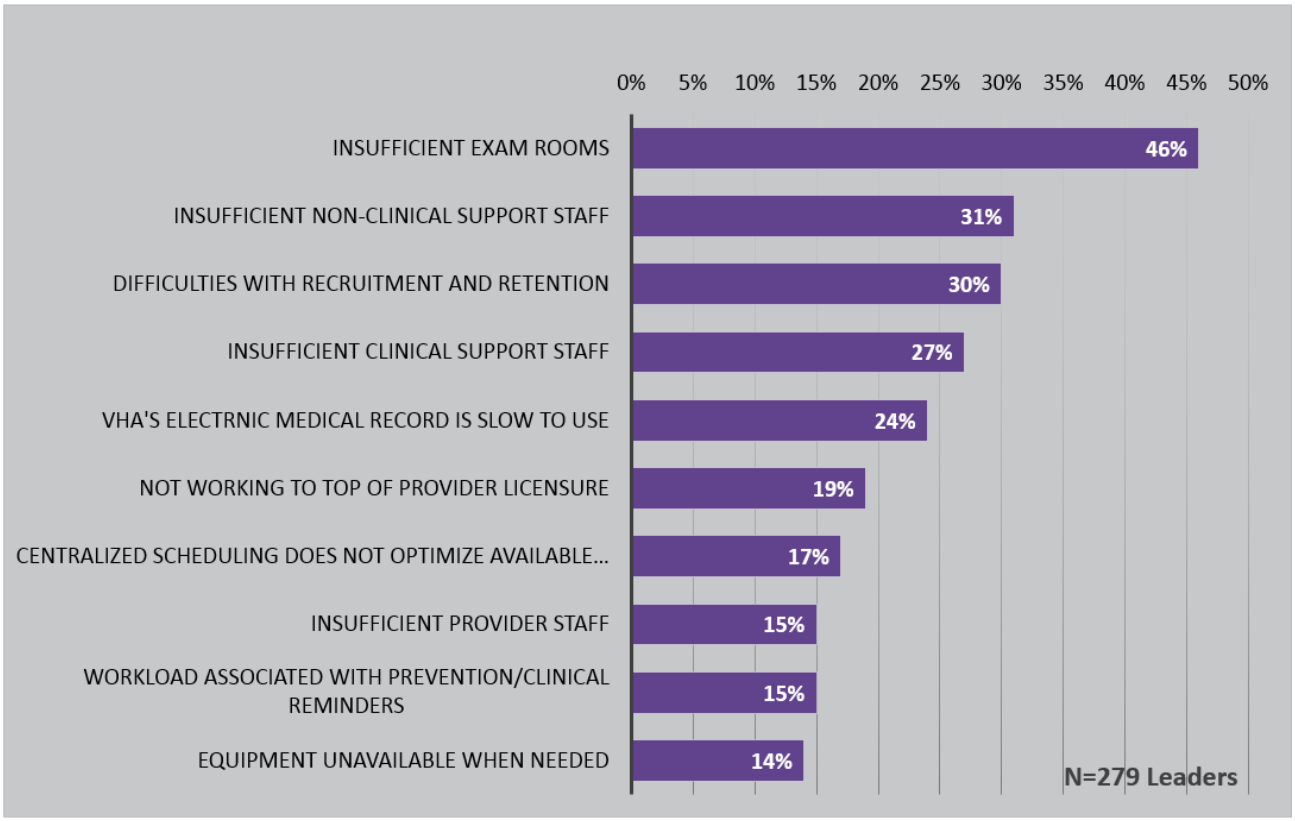


Figure 2-22. 10 Most common productivity issues or barriers according to facility leaders



2.3.8.3 A shortage of exam rooms and poor configuration of space limits productivity (Finding 13)

Insufficient exam rooms and poor configuration of space limits providers' productivity, ability to maximize patient throughput and reduces patient access.

On our site visits we observed that although there are some similarities in facility design between hospitals built during the same time period (and most VAMCs were built in the 1950s post WWII era), no VAMC looks the same. Space is utilized differently between facilities and clinics, and there is variation in room ratios as well as equipment availability. Overall, we found that space is often limited in clinics or is not configured appropriately to optimize efficient patient throughput. Space limitations (insufficient number of exam rooms) was the factor most often identified by providers (49 percent) and facility leaders (46 percent) as a barrier to provider productivity. For example, a provider at a VAMC stated "there is only one exam room per physician; we are unable to put multiple patients in different rooms waiting to be seen at one time; there are therefore a lot of providers waiting for the patient to come to their office". Another provider at VAMC stated "the exam room often doubles as the provider office; there is also not a table present in the exam room, which makes it difficult to perform certain procedures as needed. Providers also frequently (17 percent) mentioned difficulty locating mobile equipment; for example, imaging equipment, medical instruments, furniture and computer hardware. We observed that necessary equipment was sometimes lacking in specialty clinics. Although our team received multiple anecdotal comments regarding the impact of equipment on provider productivity, further analysis is needed to determine the direct impact of this issue to productivity.

> *"How do you retrofit a hospital from the 1950s to function in a modern era without actually modernizing the building? The majority of VA facilities were built beginning as early as the 1930s and are trying to accommodate new era processes and technology. Space is consistently a limiting factor, but it is difficult to expand a footprint that does not exist."* – Chief of Medicine, Complexity Level 1 Facility

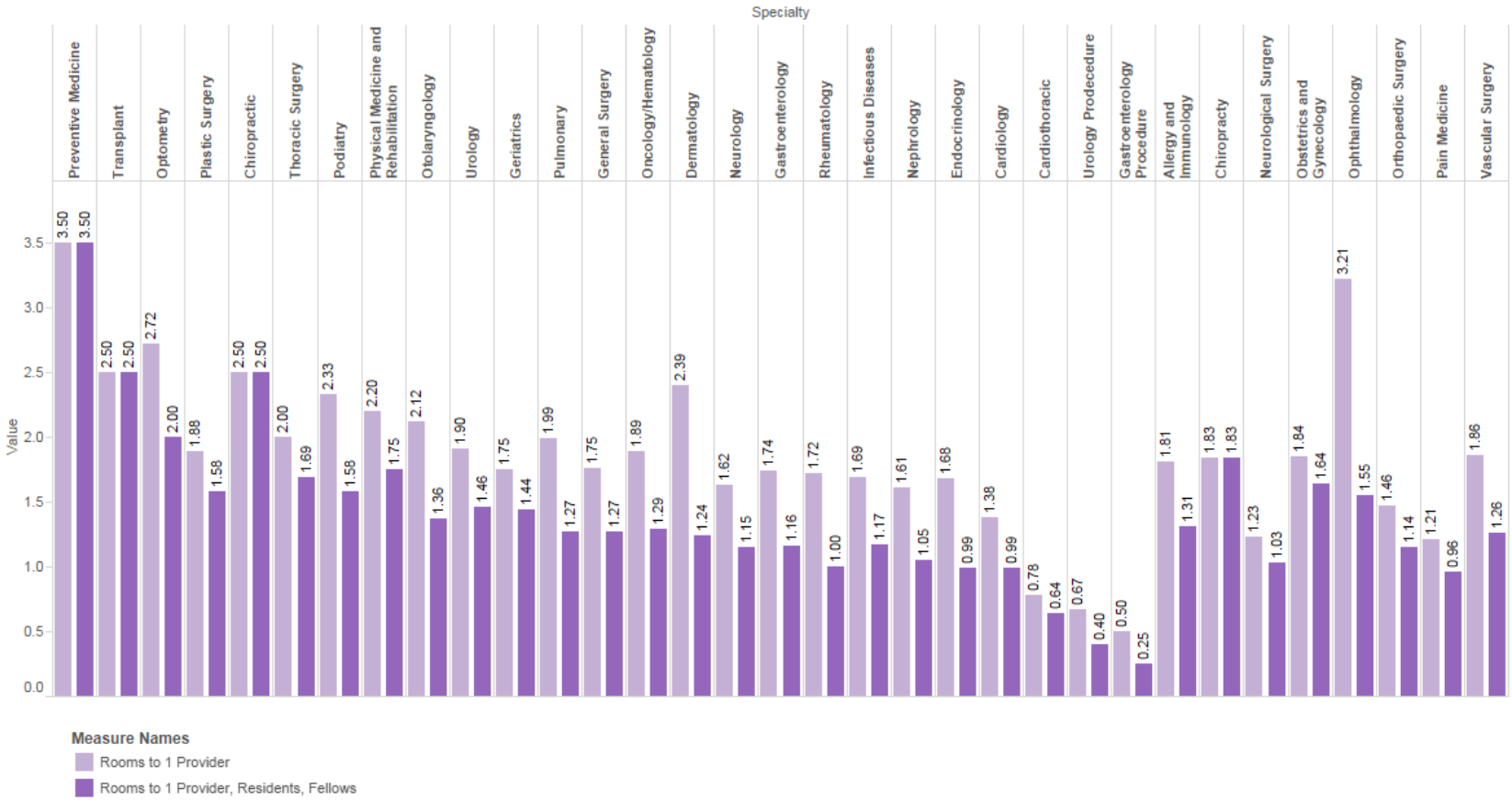
Insufficient exam rooms and ineffective space planning and configuration in specialty, mental health and primary care clinics limits patient throughput and may result in VHA providers waiting to see patients while an exam or procedure room is cleaned and prepared or a nurse conducts intake and vitals with a patient. During our site visit interviews, concerns about clinic space were more prevalent among specialty care providers than primary care providers (PCPs). This may be because space for primary care clinics is guided by the PACT model handbook which recommends 3 rooms per 1 FTE provider (with 2.17 support staff). Of note, primary care provider panel size is adjusted down when providers have fewer than three rooms available.[163]

In a separate study conducted in early 2015 for VHA, Grant Thornton assessed the ratio of rooms to providers for a sample of specialty outpatient clinics at 48 medical centers across the

[163] U.S. Department of Veterans Affairs. (2009). VHA Handbook 1101.02 PCMM. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2017

country, with varying complexity levels. **Figure** 2-23 shows the ratio of rooms to providers from the sampled facilities (for all complexity groups). The figure illustrates both the ratios of rooms per provider (physicians and APPs) for a subset of sampled specialties (light purple bars) and the ratio of rooms per providers, fellows and residents combined (dark purple bars).

Figure 2-23. Provider room ratios[164]



[164] Grant Thornton analysis of practice arrangements conducted on behalf of VHA's Office of Specialty Care Services, draft data, July 6, 2015.

The results of the Specialty Care Services study, which are supported by evidence from the Assessment G team's interviews with providers during our 24 site visits, found the room to provider/fellow/resident ratio in VA clinics is typically, for the subset of sampled specialties, 1.28:1 (roughly one room for each provider), resident and fellow, and the ratio of rooms to providers only (without residents and fellows) is 1.87:1. At the higher volume and most complex facilities (level 1A facilities), the ratio of rooms to providers, residents and fellows falls to 1.05:1. This contrasts with room ratios in efficient external health care organizations of 3:1. In other words, for a no delay practice, the ratio of exam rooms should be one physician to three exam rooms.[165] Having multiple rooms enables the provider to see one patient while a nurse or health technician conducts intake with the next patient in another room.

Promising Practice: Boston VA Health Care System

At the Boston VA Health Care System in Massachusetts, clinic space is at a premium. Exacerbating the space shortage is the age of the facility. An average room at the facility is 500 square feet, whereas the industry standard is 1,000 square feet. To work around the space shortage in its outpatient clinics, the Boston VA has expanded clinic hours to provide appointments in the evening and weekends, a strategy rarely used by VA medical facilities.

Value: This is highlighted as a promising practice because many VA facilities face a similar space shortage. Since VHA construction projects can take a prolonged amount of time to be planned, designed, and constructed, extending clinic hours is a feasible solution. This best practice can be leveraged across facilities, but successful implementation depends on providers' availability and willingness to take on non-traditional work hours, and flexibility of unions in allowing these practices.

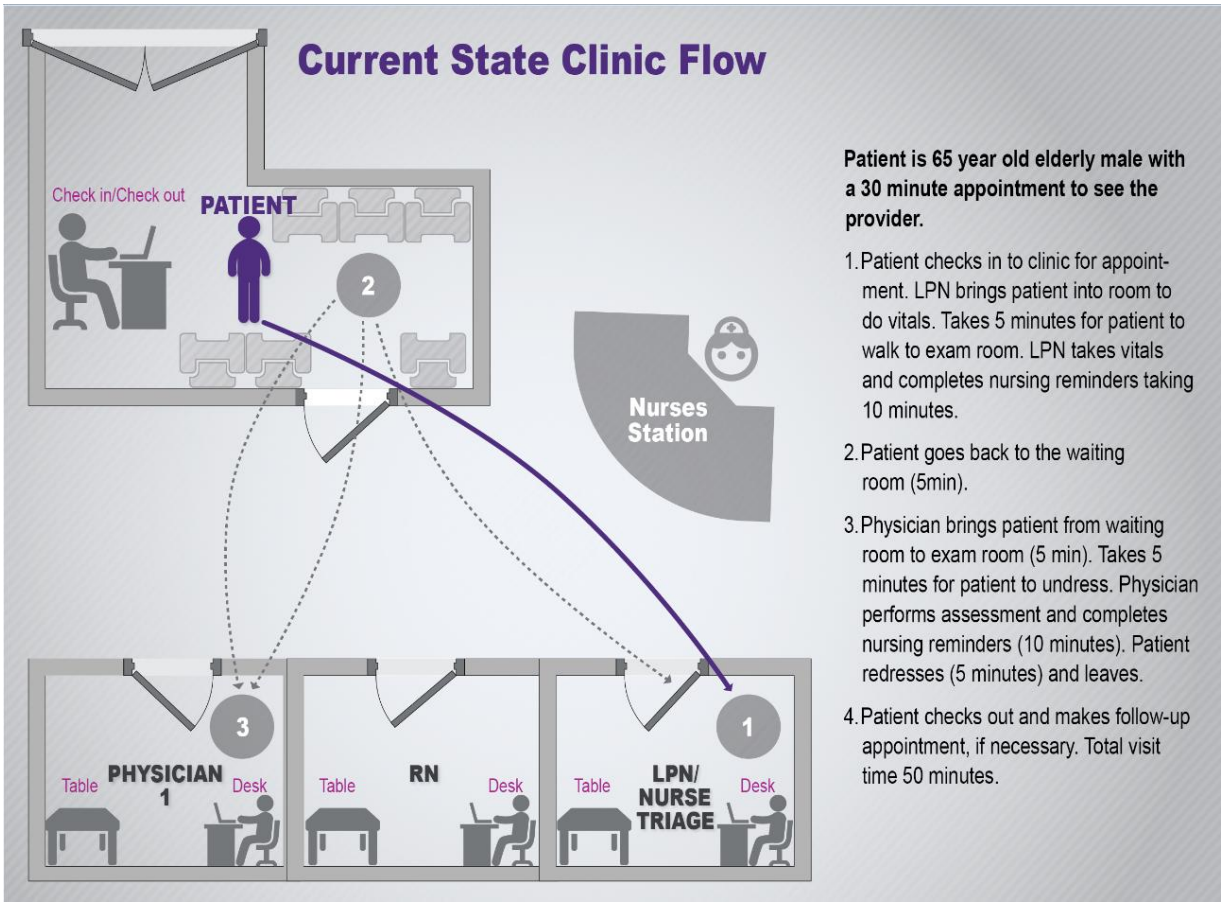
2.3.8.3.1 Inefficient clinic workflows may exacerbate space shortages in VHA clinics

We observed on our site visits that clinic workflow in primary care and specialty care outpatient clinics was largely inefficient, resulting in negative impacts to productivity as well as a provider-centric, rather than patient centric workflow. In the primary care setting, it appears that this inefficient workflow may be exacerbating space shortages as a whole, as space is used inefficiently, limiting the space that could otherwise be used to see additional patients. In the specialty care setting, a lack of exam rooms and clinical support staff may contribute to inefficient clinic workflow, as providers are forced to bring patients back and forth between the exam room and the waiting room themselves, because, in many cases, they only have one room and do not have the support staff to bring the patients to the exam room. Below, we describe the observed current state and ideal future state of primary care clinic workflow in detail.

[165] Applegate, M.S. (2008). Practice Efficiency. American College of Physicians. Retrieved from https://www.acponline.org/running_practice/practice_management/education/practice_efficiency.pdf

Figure 2-24 shows current patient throughput in a primary care clinic as observed by the Assessment G team during site visits to VA medical centers. Per PACT guidelines, each clinician has his or her own room. Ideally, the patient is brought in from the waiting room by the RN to begin the patient workup for example, vitals, initial screening. Once completed, the patient returns to the waiting room until called by the provider (Medical Doctor or Nurse Practitioner) to begin the patient visit. Depending on the presence of resident or fellows and if a procedure is required, a patient could change rooms at least three or four times. This heavily provider-centric flow, in which the patient is brought from room to room, can be especially time consuming given the VHA patient population. Older patients take longer to dress and undress, causing a bottleneck in the provider room, extending wait times for scheduled patients and limiting the number of walk-ins that can be seen.

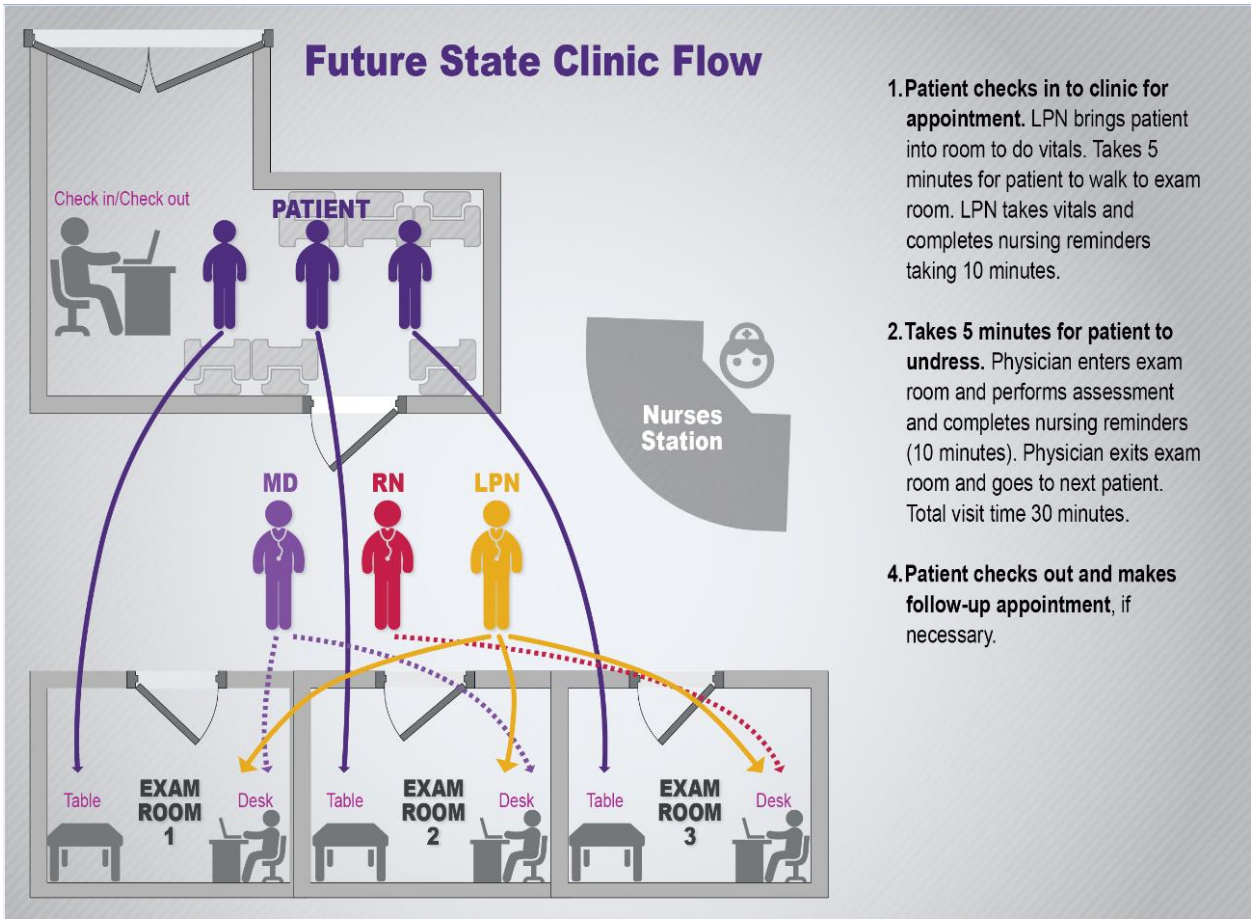
Figure 2-24. Current state primary care clinic flow



Alternatively, Figure 2-25 shows the recommended future state flow that is often seen in the private sector (figure compiled based on input from Assessment G subject matter experts). This best practice is patient-centric, with providers moving from room to room, instead of the patient, increasing patient throughput by untethering the provider from the room and allowing multiple patients to be worked up.

This flow works best when the exam rooms are only for patients and do not double as offices, and the EHR system has flexibility (Single Sign-On) and mobility (computers on wheels [COWs] or tablets).

Figure 2-25. Ideal future state primary care clinic flow



In many VA medical centers are aged, having been built in the post-World War II boom of the 1950s, with the average age of a medical facility approaching 60 years.[166] Initially focused heavily on inpatient care and as long term living spaces for providers, with amenities such as barber shops, bowling alleys, and recreational swimming pools, today VAMCs primarily provide outpatient care (more than 99 percent of care provided is in the outpatient setting).[167] Due to changing patient needs over time, these facilities are no-longer configured to meet modern day patient needs. As a result, many facilities are forced to repurpose space for new uses, without being able to modify that space to optimize patient throughput. Using square footage as a

[166]GAO. (2013). GAO Report to the Chairman, Committee on Veterans' Affairs, House of Representatives. (2013, April). VA Construction: Additional Actions Needed to Decrease Delays and Lower Costs of Major Medical-Facility Projects. Retrieved from http://www.gao.gov/assets/660/653585.pdf

[167] Based on analysis of 2013 data from Selected Veterans Health Administration Characteristics: FY2002 to FY2013, retrieved from http://www.va.gov/vetdata/utilization.asp on May 13, 2015.

measure of available space does not offer a complete picture of available space to provide patient care, since many VAMCs still have some of the same amenities of an era in which facilities focused on long term care and domiciliary type care (it should be noted, however, that we observed on our site visits that these amenities are in fact still being utilized by Veterans – and may also contribute to the high patient satisfaction rates - particularly the Patriot Café (cafeteria) and Patriot Clips (barber shop). Often inpatient wards have been converted to outpatient clinics, so they may have bathrooms or other features typical of an inpatient room, making it appear that the provider has more space for patient care. We frequently observed in facilities, and heard from providers, that space was not configured properly for the type of care they were providing.

Promising Practice: Mitigating Limited Space at Portland VAMC

The Portland VA Medical Center established scheduling processes for outpatient specialty clinics to provide efficient delivery of different services in clinics with limited space and time. For example, the facility moved away from scheduling fixed day and time slots for each specialty to a compressed schedule that accommodated patient appointment preferences for the upcoming weeks.

***Value*:** Resulted in better utilization of available space and increased patient access.

2.3.8.3.2 Insufficient availability of equipment may limit provider productivity

The number of patients seen by a provider can be impacted by several different factors, one of which is equipment availability. Equipment is defined as imaging equipment, medical instruments, and furniture and computer hardware. Limited access to equipment such as X-rays and ultrasound machines, as well as lack of access to specialized equipment for specialty care, can cause bottlenecks in patient throughput, particularly on high-volume days. At one facility, 50 percent of dental clinic exam rooms were equipped with X-ray machines, resulting in frequent delays as patients had to wait if an X-ray was needed and they were in a room without an X-ray machine. During site visit interviews we heard that VA vendor contracting processes regarding ordering equipment valued at less than $3,000, for example, scalers for dentistry, can be confusing and lengthy, leading to shortages in equipment and delays in clinic as equipment is located. Delays in sterile processing was also indicated by providers as an issue pertaining to equipment availability.

In conjunction with exam room configuration, standardization of supplies and tools within exam rooms may increase efficiencies. Lack of day-to-day supplies due to clinic space sharing can cause delays in throughput when providers and/or clinic staff leave the exam room to obtain desired items.

Age of the plant and inefficient configuration of space requires VHA providers to utilize technology such as secure messaging (email and/or instant messaging) to efficiently communicate with each other during a patient visit. We observed varied utilization of real-time instant messaging between medical support assistants (MSAs), nurses, and providers during our

site visits. Technology should also include adjustable features for patient information sharing.[168] If a quick question can be sent to a team member using technology and that team member has an available resource, information can be shared with the patient in real time and care plans can be developed. The technology in place and patient satisfaction with how they "feel" in the room while in communication with their provider can greatly affect their perception of the visit.

In the recommendations section, we provide specific recommendations on how VHA can address space related issues (shortage of appropriately equipped exam rooms and inefficient use of available space). Our findings and recommendations are consistent with those of the Assessment K report, which studied facilities (construction, leasing and space) more comprehensively.

2.3.8.4 There is insufficient clinical and administrative support staff (Findings 14 -18)

Clinical and administrative support staff ratios are insufficient and may limit provider productivity.

The Assessment G team found that 43 percent of the 355 providers interviewed perceived insufficient clinical support staff (for example, nurses) to be a barrier to their productivity. A further 27 percent of the providers interviewed perceived insufficient non-clinical support staff (for example, clerks or schedulers) to be a barrier to their productivity. Many of the 279 facility leaders interviewed also shared these perceptions (29 percent and 31 percent, respectively).

The lack of clinical support staff (registered nurses, licensed practical nurses, medical technicians) and to some extent, not having the right skill mix and roles defined for these staff, can result in providers not using their time or skills (licensure) efficiently within the clinic. For example, providers may perform patient intake procedures themselves, or conduct routine patient care tasks more appropriately performed by a nurse, thereby reducing the efficiency of the clinic, and diminishing both productivity and patient access.

A cardiologist at a VA facility stated, "There is a need for additional support staff to allow providers to operate at the top of their licensure. Currently, in addition to providing patient care, the provider needs to schedule their own appointments, put in orders, and type notes into Computerized Patient Record System (CPRS)." A Hematologist/Oncologist at a VAMC stated "one of the biggest barriers is the shortage of clinical support staff. We would like to have at least one additional registered nurse that could alleviate the burden of administrative duties by triaging patients, making phone calls, and doing medicine reconciliation."

Such problems can be exacerbated by a shortage of non-clinical support staff (medical service administrators, clerks) creating inefficient patient management and clinic workflows in which

[168] Anjali, J., Keller, A. & Gulwadi, G.B., (2009) Improving the Patient Experience: Best Practices for Safety-Net Clinic Redesign. p18. The Center for Health Design. Retrieved from http://www.chcf.org/publications/2009/03/improving-the-patient-experience-best-practices-for-safetynet-clinic-redesign

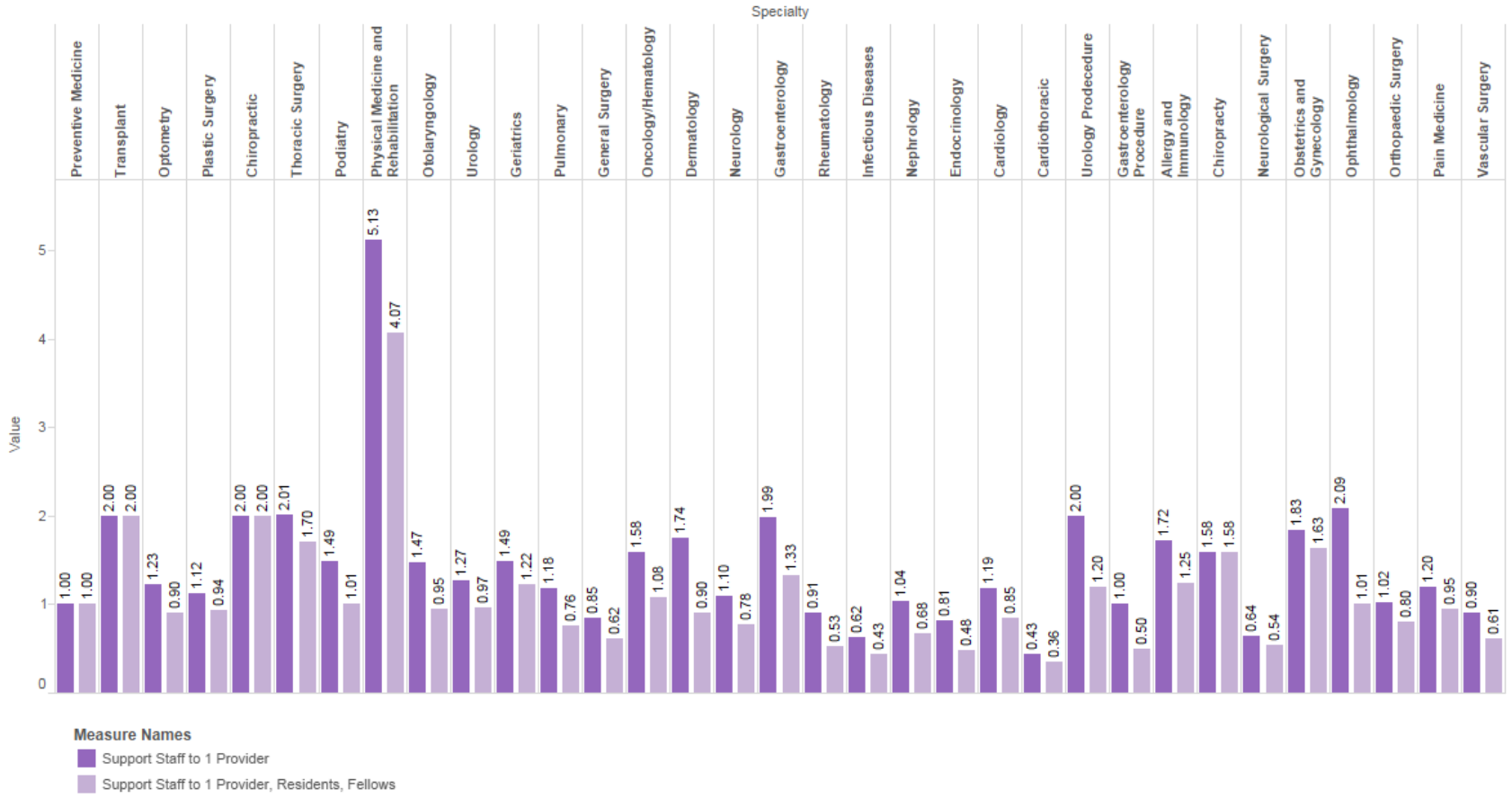
nurses, and to some degree providers, perform administrative functions such as scheduling, patient check-in and check-out and room preparation.

A primary care provider at a VAMC stated, “More clerks are needed, especially to implement the PACT model. Providers could be more efficient if there were more staff to support physicians and enable them to avoid clerical work that impacts their productivity.” An ophthalmologist at a VA facility stated, “The providers at this facility have little administrative support; this has directly led to the doctors having to perform secretarial work instead of focusing efforts on delivery of care.” A Service Line Chief at a VAMC stated, “Nursing staff members are moved to more administrative duties when they underperform in their clinical duties, instead of allowing for attrition; this impacts the availability of clinical support staff.”

In a separate study conducted in early 2015 for VHA, Grant Thornton assessed the ratio of support staff to providers for a sample of specialty outpatient clinics at 48 VA Medical Centers across the country, with varying complexity levels. Figure 2-26 depicts the total support staff (clinical and non-clinical) to provider ratio observed recently for 34 VHA medical and surgical specialties across 48 facilities. The average number of support staff (clinical and non-clinical) assigned to each provider at VHA was observed to be 1.28 support staff per provider across all specialties in the sample subset. When provider was defined to include providers, residents, and fellows the ratio was observed to be less than one (0.87). The ratio was even lower at the higher volume and most complex (level 1A) facilities, where the average ratio was 0.71 providers, residents and fellows to each support staff member. The figure below shows the support staff ratios observed from this study, including support staff per provider only (dark purple bars) and per providers, residents and fellows (light purple bars).This is significantly lower than the ratio of support staff to providers found in the private sector. For instance, the 2014 MGMA survey reported an average of 3.68 total support staff to each provider in multispecialty practices operated by hospitals or integrated delivery systems comparable to VHA.[169]

[169] MGMA. (2013) Academic Practice Compensation and Production Survey for Faculty and Management: 2014 Report based on 2013 Data. Retrieved from http://www.mgma.com/Libraries/Assets/Store/Surveys/8743-2014-Key-Findings-Academic-Practice.pdf

Figure 2-26. VHA support staff ratios[170]



[170] Grant Thornton analysis of practice arrangements conducted on behalf of VHA's Office of Specialty Care Services, draft data, July 6, 2015.

2.3.8.4.1 Insufficient support staff may prevent providers working to the top of their licensure (Finding 15)

Insufficient clinical and administrative support staff results in providers and clinical support staff not working to the top of their licensure.

Through the course of the team's root cause analysis, we identified that a lack of clinical and non-clinical support staff results in providers and nurses not being able to work at the top of their licensure. When VAMCs do not have adequate support staff for clinics, there is a cascade effect of staff not working to the top of their license and consequently limiting the productivity of providers. An Advisory Board study found that 36 percent of tasks routinely performed by nurses across the industry could be delegated to non-licensed staff, which then provides time for nurses to accept greater responsibilities and increase productivity. [171]

The Assessment G team observed numerous examples during site visits of VHA providers and clinical support staff performing tasks that might not reflect the highest and best use of their skills or license when compared to private sector practices. Table 2-6 lists tasks and their typical owner in the private sector versus the potential owner of these tasks at VHA facilities.

Table 2-6. Duties for private sector and VHA providers[172]

Task	Private Sector Responsible Person	VHA Responsible Person
Book appointment	Clerical	Clerical, LPN, RN, Nurse Practitioner (NP), Physician Assistant (PA), **MD**
Take incoming patient call	Clerical, LPN, RN	Clerical, LPN, RN, NP, PA, **MD**
Chart preparation	Clerical, LPN, RN	Clerical, LPN, RN
Room patient	LPN, RN	LPN, RN, NP, PA, **MD**
Prepare exam room	LPN, RN	LPN, RN, NP, PA, **MD**
Triage patient	RN, NP, PA, **MD**	RN, NP, PA, **MD**
Submit medication refill request	RN, NP, PA, **MD**	RN, NP, PA, **MD**

[171] The Advisory Board Company. (2015). Adaptation; For Prospective Members: Achieving "Top-of-License" Nursing Practice. Retrieved from: http://www.advisory.com/research/nursing-executive-center/events/webconferences/complimentary-webconferences/achieving-top-of-license-nursing-practice.

[172] Assessment G team health care expertise and site visit observations.

Task	Private Sector Responsible Person	VHA Responsible Person
Check-in patient	Clerical	Clerical
Remove suture, change dressing, etc.	RN	RN, NP, PA, **MD**
Prescribe treatment	NP, PA, **MD**	NP, PA, **MD**
Administer vaccine and/or medication	RN	RN, NP, PA, **MD**
Perform physical exam and health history	RN, NP, PA, **MD**	RN, NP, PA, **MD**
Diagnose and treat patient	NP, PA, **MD**	NP, PA, **MD**
Provide health promotion, counseling and education	RN	RN, NP, PA, **MD**
Coordinate care	RN, NP, PA, **MD**	RN, NP, PA, **MD**

Promising Practice: Nurses defining optimal staffing mix at Fargo and Palo Alto VAMCs

Established process to define optimal staffing mix to promote nurses to work at the top of their licensure:

- Identify all tasks/patient care interventions conducted per unit/clinic based on patient population
- Map tasks to role (e.g. RN, LPN, Support staff) and calculate staff mix based on HPPD or task time
- Update job descriptions to include specific tasks
- Conduct education sessions to teach staff how to delegate.

***Value*:** Optimizes nurse and support staff roles/responsibilities, clarifies delineation of tasks between licensed and non-licensed staff, reduces costs by hiring more support staff, and promotes nurses working at the top of their license, which results in increased provider productivity.

2.3.8.4.2 VHA lacks staffing models to forecast provider staffing needs (Finding 16)

While there has been widespread implementation of the PACT model in primary care clinics and the National Nurse Staffing Methodology in many areas of inpatient care, there are no

current VHA standards for staffing levels and/or mix in specialty clinics, with the exception of eye clinics.

Through the course of our root course analysis we identified that a lack of staffing models results in VAMCs being unable to predict, identify, and justify the need for resources. Although VHA has a data tool that VHA facilities can use to better understand resourcing and productivity, low confidence in the accuracy of the data results in low usage by facility leaders. Further, the lack of coordinated governance structures between clinical support staff, non-clinical support staff, and provider staff renders an inability to flex resources across service lines, and optimize coordination of care.

The Office of Nursing Service (ONS) recently developed staffing guidance for the Emergency Department, and the Office of Mental Health Services is testing various staffing models in mental health clinics, for example, the Behavioral Health Interdisciplinary Model (BHIP). Of the service chiefs we spoke with on our site visits, none reported that they had formulas for determining the optimal number and mix of providers and support staff for their clinics. Most interviewees said that these decisions were left to the facility, and were not VISN based or VA Central Office mandated. This lack of definitive guidance and requirements for staffing level and mix of providers, as well as clinical and non-clinical support staff, makes it difficult for service chiefs to understand how many and what kind of staff they need, and for them to make the business case for more resources. It can also result in clinics lacking the appropriate number of clinical support staff, non-clinical support staff, as well as providers and support staff not working to the top of their licensure or highest functional level.

VHA facility leaders are not universally leveraging data tools to support staffing decisions.

VHA OPES has established a suite of web-based tools for facility and service level leaders for managing clinic access, productivity, and efficiency. This suite includes the Specialty Productivity-Access Report and Quadrant (SPARQ) tool, and several workforce reports. The SPARQ tool allows a facility management team to compare one of their specialty practices to specialty peer groups, or to compare all facility specialties to facility peer groups to compare performance on productivity and access measures. The tool also calculated 39 measures of specialty practice workload, workforce, productivity, access, demand, physician compensation, fee care expenditures, and facility reliance on fee care. The reports available from OPES are industry leading tools; however, decision support and management reports such as these are only as good as the underlying data which feeds them and factors such as: business rules, roles and responsibilities, and training. These factors may affect facility management's perceptions about the reliability of data and consequently their reliance on these important tools.

VHA recently established productivity standards for each specialty provider group practice, by facility complexity level. Recently published VHA guidance defines VHA's policy for monitoring and assessing productivity and associated staffing.[173] The guidance dictates that each medical

[173] U.S. Department of Veterans Affairs. (2015).VHA Directive 1065, and VHA Handbook 1065.01. Productivity and Staffing Guidance for Specialty Provider Group Practice. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=3103

facility director monitor and assess specialty care provider group practice productivity on an annual basis, at a minimum, using standardized methods. Specialty provider group practices should achieve a yearly clinical productivity value higher that 1 standard deviation below the level of the mean specialty productivity level (current productivity levels are based on fiscal year 2013 data, as a baseline).[174] Facilities with specialties that fall below should develop a remediation plan.

These requirements represent early steps in a movement toward institutionalizing productivity as one measure of performance at the facility level and nationally. As such, VHA Central Office encourages facilities to use the tools developed by OPES to regularly monitor productivity, and to ensure labor mapping, VHA's cost accounting method of aligning provider time to clinical activities, is accurate, as this forms the denominator of provider productivity calculations. OPES also encourages VA medical center leaders to ensure that providers' person classification code is recorded accurately with credentialing and privileging, as inaccurate person class mapping will result in specialty practice wRVUs being misattributed to a specialty.

Despite these efforts, the Assessment G team received varied reports from facility leaders on whether they are using these tools. The team consistently heard from facility leaders that they are not regularly using these tools for decision support or day-to-day management of clinic staffing. There is a perception that the underlying data that feeds these tools can be unreliable. Some of the reasons given are: differences in the way data is captured by the facility, lack of staff to manage clinic productivity, limited understanding of how to use the tools, and an increased focus on making decisions based solely on access (if patients cannot be seen within 30 days, provide a referral for purchased care, rather than use as a justification for additional staff or need to improve productivity). It also appears that clinic business managers have limited bandwidth to support this type of data drive decision making and management. VHA recently began to implement a Clinic Group Practice Manager Model, which is modeled after a successful U.S. Air Force initiative. At present, it does not appear that VHA has tied additional funding for more resources to this initiative; as such, it is not clear how its success will be measured.

VHA is well ahead of the industry in the development of tools that facilities can use, but may have opportunities to improve the tools to better cater to the needs of facility leaders. A separate study by Grant Thornton in support of the Office of Specialty Care Services recently assessed the validity of the labor mapping data that feeds reports by the Managerial Cost Accounting Office (MCAO) and OPES, as well as how and if facilities are complying with the labor mapping guidance and using OPES tools. That study will include a report to OPES with strategies for improving OPES reporting tools.

2.3.8.4.3 Organizational siloes and separate reporting lines exist (Finding 17)

Organizational siloes and separate reporting lines exist for physicians, nurses and medical service administrators at a majority of VAMCs. As a result, service chiefs do not have control

[174] Ibid.

over the resourcing and performance of their clinical support staff (nurses) or clerical and administrative support staff.

Through the course of our root course analysis we identified that organizational siloes and separate reporting lines result in clinical leaders not having sufficient visibility into clinic staffing and not having the span of control or authority needed to manage all of the staff in their clinics. The Assessment G team frequently observed a siloed management structure of providers and clinical and non-clinical support staff. The typical reporting structure has clerks and support staff reporting to medical administrative service (MAS), nurses (Licensed Practical Nurse [LPN]/Licensed Vocational Nurse [LVN] and Registered Nurses [RNs]) reporting to nursing service (led by the Chief Nursing Executive) and most providers reporting to (physician) service chiefs who report to the Chief of Staff. As a result, service chiefs do not have control over the resourcing and performance of their clinical support staff (nurses) or clerical and administrative support staff. Further, service chiefs may have limited influence over who is assigned to their unit and the continuity of those staff.

The lack of oversight of clinic staff by service chiefs can make it difficult for them to understand the complete staffing in a clinic and limit their ability to optimize staff roles and responsibilities. This can lead to issues such as:

- Inefficiencies in executing scheduling protocols and other administrative tasks commonly performed by non-clinical support staff
- Inefficient patient flow within the clinic
- Failure to flex resources across service lines or clinics to meet needs.

2.3.8.4.4 Daily staffing variances create staff shortages (Finding 18)

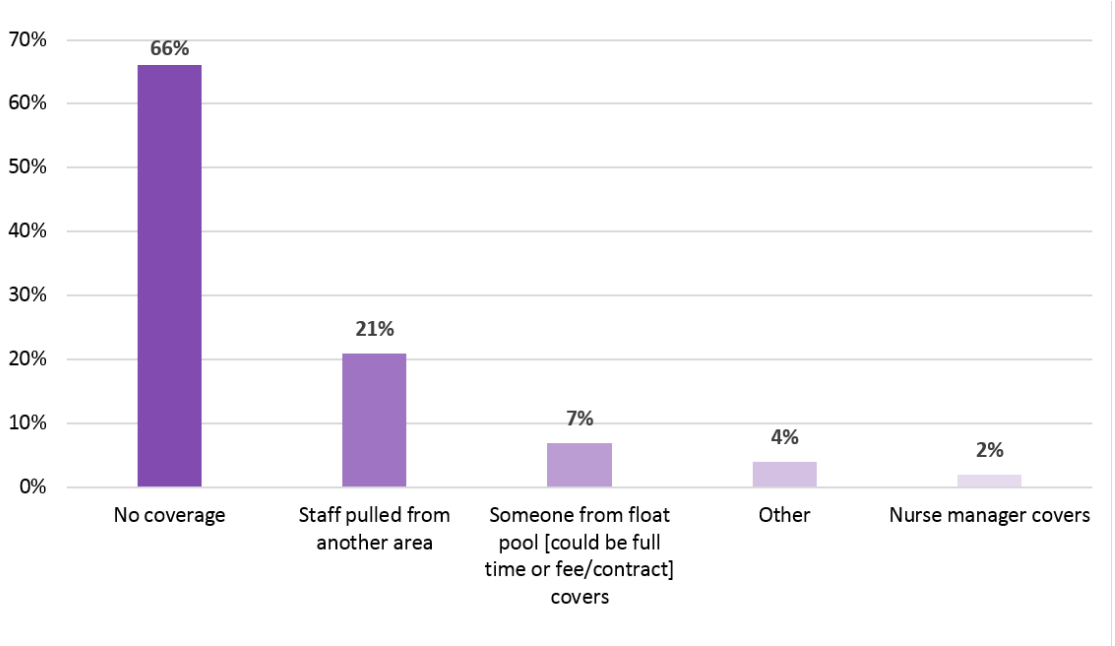
Many facilities do not have a centralized staffing office or nurse float pool to address daily staff variances or absences.

Through the course of the team's review of nurse staffing practices at VA medical centers, we identified that facilities do not have a centralized staffing office and rarely utilize a nurse float pool to address daily staffing variances. This results in shortages of clinic support staff, which can reduce the productivity of providers. Ineffective management of staff absences can disrupt patient care teams and cause stress for nursing staff who are pulled from their unit to cover short-staffed units with different team members, processes and unit layouts.

A neurologist at a VAMC stated "there are not enough clinical support staff and the number available is not reflective of the workload; there is no ability to flex up the number of nursing support staff depending on the number of patient encounters – the same number of nurses are available, regardless of demand."

A face-to-face survey of 1,791 clinical support staff conducted by Grant Thornton in early 2015 in support of VHA's Office of Specialty Care Services found that there were frequently no plans in place to manage daily staff absences. Figure 2-27 shows that 66 percent of surveyed clinical support staff in specialty care outpatient clinics reported that when they are absent, there is no one who covers for them.

Figure 2-27. Specialty clinic absence coverage for clinical support staff[175]



Daily staff variances appear to be an issue for both inpatient and outpatient clinic environments and do not appear to be addressed in current VHA staffing models. Our team observed that VHA's national nurse staffing methodology, the PACT model in primary care, nor any staffing method in specialty care clinics, had a replacement factor to address staffing variances**.**

With respect to inpatient care, the target nursing hours per patient day (NHPPD) produced by VHA's nurse staffing methodology is not tied to facility budgets. This leads to ineffective management of staff costs per day and staffing gaps. For example, at the medical surgery (Med-Surg) inpatient units we visited the nurse staffing methodology produced greater than expected target NHPPD variances among similar units. At one Med-Surg unit, the target NHPPD was as low as 6.6 hours, but a similar unit's NHPPD was 9 hours. When units were unable to meet their targeted NHPPD, they often used overtime or closed beds because they lacked a flexible workforce to fill staffing gaps.

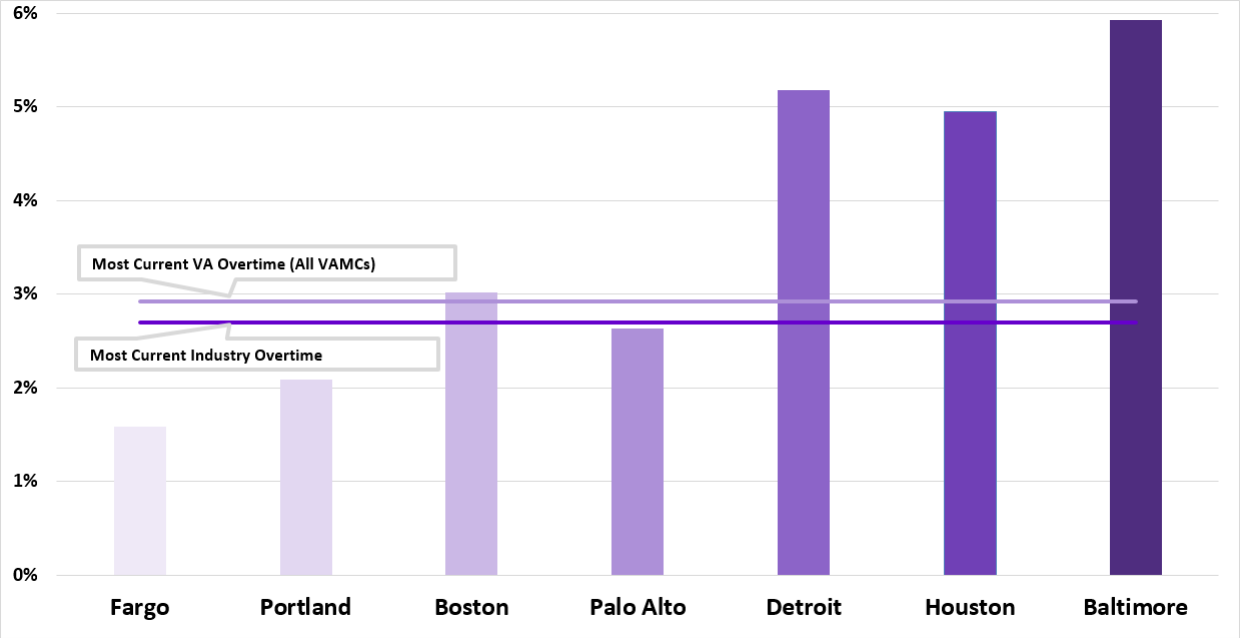
Even when units meet their target HPPD, clinical leaders do not have good data with which to assess adequate staffing because overtime is included in their total hours. Overtime usage across VAMCs can vary significantly. Current national overtime rates for VHA are marginally higher than the rest of the health care sector (2.92 versus 2.86 percent), but can vary significantly by VA facility.[176] Figure 2-28 provides an example of the level of variation in the use

[175] Grant Thornton analysis of staff coverage conducted on behalf of VHA's Office of Specialty Care Services, draft data, July 6, 2015.

[176] U.S. Department of Veterans Affairs, (2015) ProClarity Briefing Book. VANOD Administrative Indicators Briefing Book.bbk.

of overtime by VA facilities. Overtime ranged from less than 2 percent at the Fargo VAMC to almost 6 percent at the Baltimore VAMC.

Figure 2-28. Overtime rates for select VAMCs (March 2015)



2.3.8.5 Providers may not be fully documenting their clinical workload (Finding 19)

During site visits and interviews with VHA Central Office leaders, we consistently heard concerns that providers do not fully document and accurately code all of their clinical workload.

These observations are similar to the results of Assessment F (Clinical Workflow). Failure to fully document clinical workload may impact the accuracy of wRVU productivity measurement and the ability of medical facilities to properly manage providers' availability. Coding accuracy is also important to measuring whether clinical pathways are being appropriately followed and understanding care outcomes. According to Assessment F, VHA has a Clinical Documentation Initiative (CDI), however only 46 percent of VA Medical Centers participate. Methods to determine nurse/support staff mix may not fully capture workload (Labor Management Institute [LMI] ratios may not cover continuous observation [CO] needs). VHA also lacks a local infrastructure to assist providers and nurses to accurately capture workload and coding.

Inaccurate workload capture was reported by many providers across virtually all medical centers visited by the Assessment G team. Interviewees gave many reasons for inaccurate workload capture, including a lack of understanding of the policies, preference to spend time treating patients, and a distrust in the data integrity. Additionally, some staff expressed displeasure in not knowing who views productivity data and what levels it is reported to. Limited provider training and lack of systems to assist providers in documenting comprehensively and accurately limits the accuracy of workload capture.

Other factors raised by providers during site visit interviews include: data such as charge capture reports and other wRVU-related measures are not relayed from the facility Business Office to the clinical service lines and back; reporting structures are disconnected between Business Office and clinical service lines where adequate feedback is not required from the Business Office to remediate potential coding errors; there is a lack of training in coding for providers; and there is a lack of tools to enhance coding and documentation, such as CAC programs, to assist providers in accurately coding, and processes such as charge tickets which group the most used ICD-9 or ICD-10 codes for imaging, procedures, and/or clinic visits are used sparingly at VHA.

2.3.8.6 VHA's electronic health record may limit provider productivity

VA first introduced its EHR – otherwise known as CPRS – across its facilities in 1997. Since then, CPRS has functioned as VHA's core EHR to house all patient- and care-related information. Although CPRS was developed in-house with the expertise of VHA providers and nurses, the system and supporting human resource and IT structures have not been updated consistently across facilities to sufficiently support providers' efficient care delivery. Additionally, providers have in some cases, not been adequately armed with the knowledge and skills to easily navigate the system to record patient information and optimally deliver personalized, proactive, patient-centered care. This, as a result, may impact providers' productivity levels across facilities. During site visit interviews with facility leaders and providers, the following issues with the CPRS were frequently raised:

Lengthy amount of time it takes to log-in to the IT system. Providers stated that it can take up to 15 minutes to log-in to CPRS. The system automatically logs out providers if it is not being used for ten or more minutes. This especially reduces provider productivity if they need to log back into CPRS multiple times over the course of a patient visit.

Speed of system further diminished when utilizing two or more modules simultaneously. Providers stated that if they have one or more applications open in addition to CPRS, then CPRS operates more slowly. For example, some facilities use the Dragon®NaturallySpeaking software to dictate notes into CPRS. While this software is designed to assist providers in capturing notes more efficiently, it has slowed CPRS because the IT system is not designed to support simultaneous module utilization.

Antiquated nature of the system. VHA's CPRS was released and implemented across its facilities in 1997. Although the EHR was designed in-house with the expertise of VHA providers and nurses, the system has not been updated to keep up with technological advances. Specifically, based on site visit observations and feedback, the user interface is not similar to private industry counterparts (e.g. EPIC, Cerner) and the time it takes for the software to log-in and log-out is prohibitive, in many cases, to efficiently using multiple rooms to see patients.

Lack of IT training for providers to manage view alerts and clinical reminders. Some providers stated that they can spend up to an hour or more on a daily basis going through their view alerts, but others stated that they can alter their filters so that they would not necessarily need to be alerted by low-priority messages. Although providers stated that they can spend a significant amount of time going through clinical reminders during each patient visit, many

stated that they are necessarily to provide comprehensive chronic care management and preventative care. Primary care providers have comparably more clinical reminders than specialty care providers, and LPNs can also manage some reminders.

Many providers stated that they do not know how to efficiently manage and work through their view alerts and clinical reminders, and would like to have training to better be able to manage these responsibilities. However, the centralized governance structure for IT resources limits accountability for developing and providing training for providers, and triaging IT issues for efficient resolution.

Extensiveness of electronic documentation. CPRS requires providers to enter an extensive amount of patient notes. This heavy amount of documentation is often exacerbated when patient information does not transfer seamlessly between systems. Our team heard that there is no bi-directional feed between different electronic modules and that providers need to document notes in Caretracker and then copy and paste the information into CPRS. Another provider stated transferring reports between systems is too time-consuming.

2.3.8.7 Scheduling inefficiencies may limit provider productivity

Efficient scheduling processes, procedures, templates, and tools are essential for optimizing provider time by maximizing utilization and availability for patient care. Our team found that scheduling inefficiencies were a significant barrier to productivity, at many facilities, according to the providers that we interviewed. More specifically, in their opinions, the processes in place and infrastructure in support of VA's current scheduling system reduces the ability of clinics to make the best use of available provider time and thereby maximize the efficiency of clinics.

In our interviews, providers appeared to be less satisfied when scheduling functions were handled outside of the clinic or by a pool of staff who rotated through different clinics. Where call centers existed, the Assessment G Team, along with the Assessment E team, observed that these call centers supported different services and functions depending on the facility. The staff had different approaches to interacting with clinics and different degrees to which clinics had codified their business rules. Clinics reported that this could, at times, result in incorrect scheduling practices.

Another regular complaint by providers was the movement and/or reassignment of staff who provide scheduling support to clinics. Providers expressed a preference for having dedicated scheduling staff who understand their clinic scheduling needs and preferences. Alternatively, standardization in clinic profiles, templates, tools, and training of staff, might mitigate centralized scheduling woes, without the need for dedicated schedulers assigned to specific providers or a group of providers. Below we elaborate on two sub-areas that we observed; however, the Assessment G team defers to the findings and recommendations offered in more depth within the Assessment F team report.

2.3.8.8 Schedules are not developed to optimize providers' available time

This is amplified by limited visibility into the total supply of available appointments within the VistA scheduling system. The VistA scheduling system also inhibits the ability to vary

appointment length to match patient acuity, resulting in less than optimal use of available provider time within master scheduling templates. The inability to view access in aggregate may contribute to slow reactionary needs to Veteran demand, and VA's responsiveness to shifting open appointments.

VHA providers express particular frustration with the scheduling process and feel their ability to deliver care in an efficient and productive manner is reduced by VA scheduling practices relative to typical private sector scheduling processes.[177] Furthermore, according to McKinsey's Assessment E (provider availability section), only 56 percent of all providers believe schedulers are adequately trained. According to one provider, "the scheduling system restricts the ability to identify an appointment slot by patient acuity, which is specific to the Veteran population. The master scheduling template is not flexible." Less common in the private sector is the incidence of clinic cancellations, since cancelled clinics directly result in lost revenue in those settings. In VHA, the Assessment E team consistently noted that changes in provider availability and management of provider availability is a significant issue.[178] MSAs manage providers' schedules, and they may not have a strong working relationship with the clinic staff nor have a full understanding for the clinic culture because they report to the facility's business office. Providers cannot optimize their schedules to see as many patients as possible, which, as a result, negatively impacts their productivity

2.3.8.9 Patient follow up procedures are not in place to manage no-shows

When a patient fails to keep an appointment, in the private sector, it is termed a "no show." VHA refers to no shows as missed opportunities. No shows can result in underutilized provider time and poor patient access (as patients who could have had an appointment scheduled, do not). No shows present a constant challenge to providers' ability to manage their day-to-day schedules. Although no shows are a complaint across the industry, no show rates appear higher in VHA than in other systems across the nation. Even VHA's target missed opportunity rate is higher than national no show rates in the industry. In an Assessment E analysis of a sub-set of facilities and clinic environments, 35 percent of visits did not occur as scheduled, with half of those being no shows or 24 hour cancellations (for additional detail on this topic, see the assessment E Scheduling Process section for more detail).[179]

2.3.8.10 Nurse staffing shortages

Through the course of the team's root course analysis we identified a number of factors that may contribute to shortages of clinical support staff, which leads to lower productivity of providers:

- Incomplete implementation of VHA's Nurse Staffing Methodology
- Insufficient budgets to hire nursing staff

[177] Assessment G site visit interviews.

[178] McKinsey & Co. (2015). Veterans Choice Act Assessment E Final Report.

[179] Ibid.

- Lengthy hiring processes for nurses
- Absenteeism and turnover of nurses
- The lack of a quality journey designation to attract nurses
- Diminishing continuing education opportunities for nurses

Our team conducted interviews with VHA nurse leaders at the national level, as well as site visits to examine nurse staffing practices at seven VA medical facilities, in order to explore these issues. Our findings are summarized below.

2.3.8.10.1 Implementation of VHA's Nurse Staffing Methodology is incomplete

VHA Directive 2010-034[180] mandates the development of nurse staffing plans by each facility. We reviewed the implementation of the nurse staffing methodology at seven VA facilities. During site visits, we consistently heard that budget constraints and cumbersome hiring processes resulted in the disapproval of FTE requests and unfilled positions for nurses. Facilities that had fully implemented the nurse staffing methodology continue to struggle to provide adequate nurse and support staff persisted. The national nurse staffing methodology mandate did not include the funding for the methodology, processes for developing a training plan, or continuous monitoring and oversight of the implementation.

VHA's ONS is deploying the Nurse Staffing Methodology (VHA Directive 2010-034) using a phased approach, with phase one implementing across inpatient units. Phase two expands the implementation to the operating room (OR), ED, ambulatory and specialty care areas. Phase three provides guidance to implement a fully-automated system to determine adequate nurse staffing for all points of care. The ONS explained that four years after the adoption of the directive by VHA, many medical centers have not fully implemented the nurse staffing methodology.

ONS recently conducted an evaluation of the VHA Nurse Staffing Methodology, (*Evaluating the VHA's Staffing Methodology Model: A Reliable Approach, 2015*). The study noted that facility compliance in meeting target staffing levels varied widely and fluctuated over time. It also noted that high turnover among VAMC nurse executives hindered the implementation of VHA Directive 2010-034. Further, a recent study found that VHA's nurse staffing methodology increased the absolute number of Nursing Hours per Patient Day (NHPPD) by a full hour, but did not necessarily result in actual increases of RN hours per patient day across all units and nursing personnel.[181]

[180] U.S. Department of Veterans Affairs. (2010). VHA Directive 2010-034. Staffing Methodology for VHA Personnel. Retrieved from: http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2274

[181] Taylor, B., Yankey, N., Robinson, C., Annis, A., Haddock, K., Alt-White, A., Krein, S., & Sales, A., 2015. Evaluating the Veteran's Health Affairs staffing methodology model: A reliable approach. *Nursing Economics$*. January-February, 2015, Vol. 33/No.1. Retrieved from http://www.medscape.com/viewarticle/840990_5

2.3.8.10.2 Insufficient budgets may contribute to shortages of support staff

Budget limitations may constrain facilities' ability to reach adequate support staff levels. Implementation of VHA Directive 2010-034 is resource dependent; yet, the mandate remains unfunded.[182] In the inpatient setting, medical centers we visited were following the VHA Staffing Methodology Directive and utilized the FTE calculator tools to determine their target HPPD and FTE needs per unit. However, the availability of sufficient budget for inpatient nurse staffing varied by facility. If VA medical centers cannot align their budgets with target FTE needs they will likely not achieve the benefits of the standardized nursing staffing methodology. Consequently, units will have inadequate clinical support staff, which may impact provider productivity.

Nurse executives we interviewed during site visits expressed fewer concerns about budget constraints in primary care. This is because, in contrast to the VHA nurse staffing methodology, the PACT model used in primary care, was a funded model when it was implemented. The Veterans Choice Act included funding for primary care and specialty care staffing which we expect will improve VA medical centers' ability to budget for clinical and non-clinical support staff.

2.3.8.10.3 Hiring processes may contribute to shortages of support staff

Lengthy recruiting, hiring, and onboarding processes and delays were a frequently reported barrier to adequate nurse staffing by facility nurse executives. Primary recruitment challenges that VHA faces include: limited nurse candidates (particularly in rural areas); steep competition for talent in urban academic centers; and non-competitive salaries. A nurse executive at one facility mentioned that managing the number of qualified Veteran applicants who applied for clinical support staff positions further delayed the hiring process due to declination rates as high as 90 percent. In FY 2014, VHA hired 6,688 nurses. The average speed of hire was 39 days.[183] The lengthy onboarding process caused delays, which result in a loss of qualified candidates. These challenges contribute to a high number of vacancies.

At a complexity Level 1 facility, we were told that a VHA surgeon technician's average salary was 30 percent lower than the salaries offered by local hospitals.

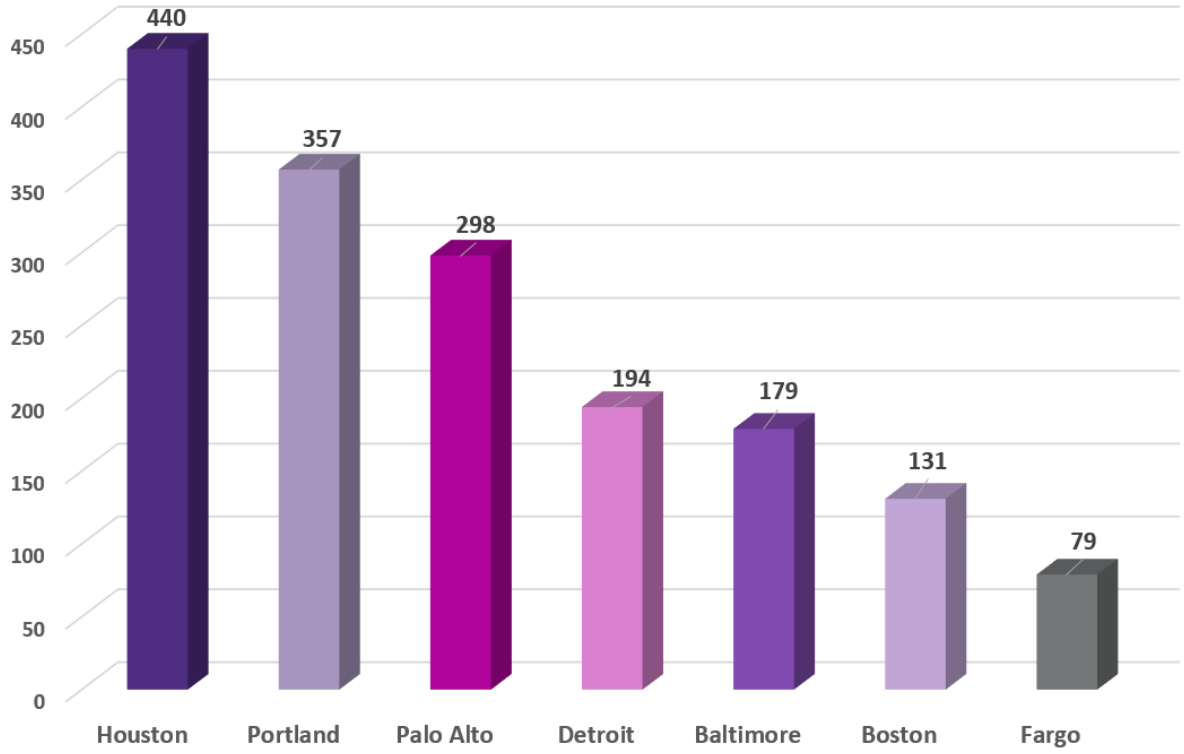
At another facility, we were told that nurses were offered $25,000 sign-on bonuses from local hospitals to recruit them because of their valuable VHA work experience. Nurse executive salaries can be $100,000 higher at local hospitals compared to VHA.

[182] Interview with Office of Nursing Services, February 12, 2015.

[183] Certain data used in this study were supplied by Truven Health Analytics. Any analysis, interpretation, or conclusion based on this data is solely that of the authors, and not Truven Health Analytics. Data was obtained from Truven Health Analytics ActionOI®(2015) Facility Indicators All Beds Report, provided by FTI Consulting. Data not available to the public.

As of March 2015, the total number of nurse, practical nurse and nursing assistant vacancies across all VA medical centers was 16,676, which represents approximately 20 percent of VHA's nursing staff workforce.[184] Figure 2-29 depicts the number of nurse, practical nurse, and nursing assistant vacancies for seven of the VA medical centers we visited to examine nurse staffing practices. These high vacancy numbers make it difficult for VAMCs to adequately staff units and clinics.

Figure 2-29. VAMC vacancies for nurses, practical nurses, and nursing assistants



2.3.8.10.4 VHA nurse turnover is marginally higher than industry, but varies across VAMCs

Nurse turnover can be an important contributor to staff shortages. Figure 2-30 shows the national average nurse turnover rate for VHA as well as the turnover rate at seven of the VAMCs where we examined nurse staffing practices. VHA's national nurse turnover rate is marginally higher than industry (17 versus 14 percent) but varies across individual VAMCs. For example, nurse turnover was just over 8 percent at VHA's Boston Health Care System, but

[184] U.S. Department of Veterans Affairs, (2015, March 17) VHA Talent Management. Onboard FTE Turnover by Facility FY14.xlsx

almost 20 percent at the Palo Alto VAMC.[185] According to nurse executives, the bulk of nursing staff losses are the result of an employee leaving VHA to take a role at another health care organization. The 2015 National Health care Retention and RN Staffing Report showed that the cost of RN turnover ranges from $36,900 to $57,300 per nurse, which results in an average $6.2M loss for hospitals. The cost of turnover can range up to two times annual salary for professional positions.[186] Turnover could represent a significant drain on a VAMC budget.

We were unable to quantify the absenteeism rate for VHA nurses. We recommend it be studied by VHA since it may also be an important contributor to shortages of clinical support staff. A higher incidence of unfilled shifts and overtime at some facilities is likely to contribute to higher workload for nursing staff. Workload is considered a source of occupational stress and has been linked to nurse burnout and absenteeism.[187] Other research has shown that nurses reported greater job dissatisfaction and emotional exhaustion when they were responsible for more patients than could safely care for.[188]

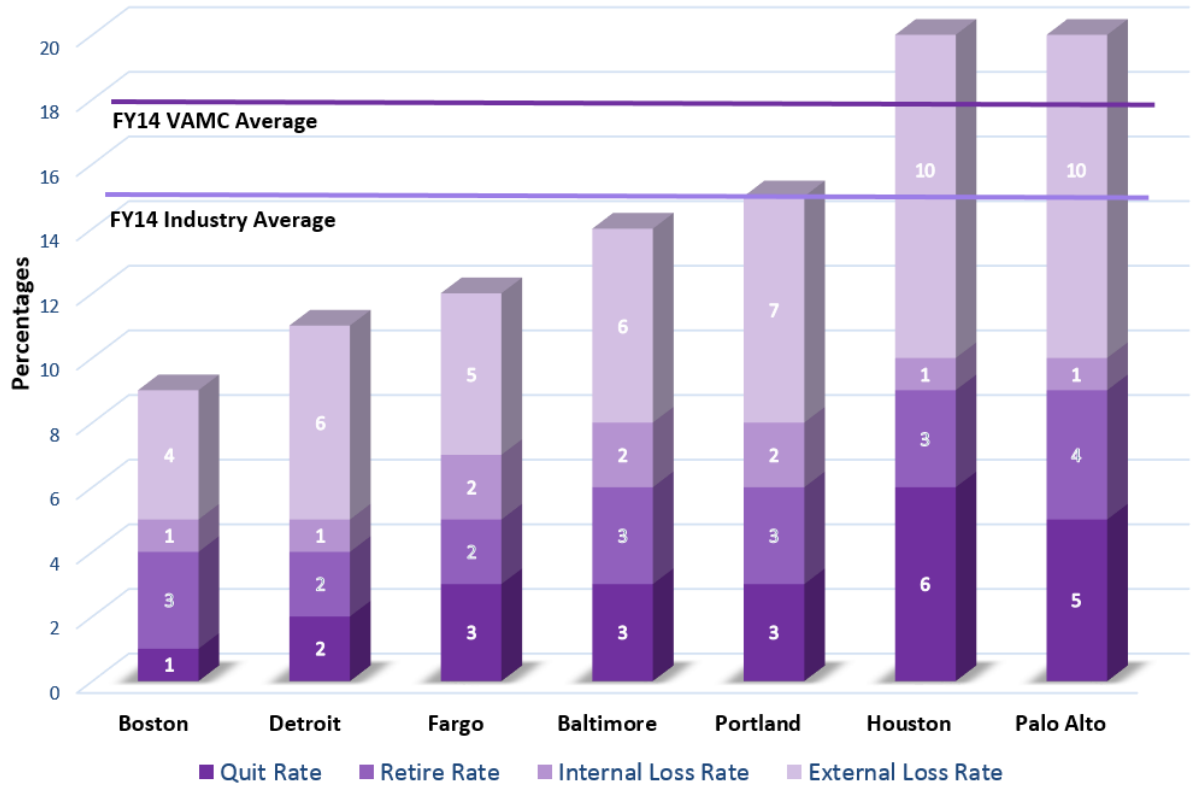
[185] Nursing Solutions Inc. (2015). 2015 National healthcare retention & RN staffing report. p8. Retrieved from: http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/NationalHealthcareRNRetentionReport2015.pdf

[186] Ibid.

[187] Iverson, R., Olekalns, M., Erwin, P. (1998). Affectivity, Organizational Stressors, and Absenteeism: A Causal Model of Burnout and its Consequences. *Journal of Vocational Behavior*. 02/1998; 52(1): 1-23.

[188] Aiken, L., Clark, S.P., Sloane, D.M. Sochalski, J. & Silber, J.H. (2002). Hospital Nurse Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction. *JAMA*. October 23/30, 2002,Vol. 288, No 16, 1987-1993. doi: 10.1001/jama.288.16.1987.

Figure 2-30. Nurse turnover rates for select VAMCs



2.3.8.10.5 Too few VHA facilities have a Magnet status®

Our team found that only a small number of VHA facilities have a quality journey designation such as ANCC (American Nurses Credentialing Center) Magnet Status®, [189] or ANCC Pathway to Excellence®.[190] ANCC reports that over 400 hospitals hold this designation in the United States. However, according to VHA there are only three VA medical centers with a Magnet designation: Houston, Portland and Atlanta. Madison VAMC is pursuing Magnet status and Fargo VAMC is pursuing the ANCC Pathway to Excellence.

The Magnet program was developed by ANCC (American Nurses Credentialing Center) to recognize hospitals and health care organizations that provide nursing excellence. ANCC considers Magnet Recognition® to be the highest and most prestigious distinction a health care organization or hospital can receive for nursing excellence and outstanding patient care. According to ANCC, the Magnet Model focuses on five areas:

- Transformational leadership

[189] American Nurses Credentialing Center. (2015, May). Magnet Recognition Program. Retrieved from http://www.nursecredentialing.org

[190] American Nurses Credentialing Center. (2015, May). Pathway to Excellence Program. Retrieved from http://www.nursecredentialing.org/pathway

- Structural empowerment
- Exemplary professional practice
- New knowledge, innovations and improvements
- Empirical outcomes.

While we recognize that the Magnet journey is a resource intensive process, and may not always be appropriate for smaller facilities, it has benefits for patient care and can be an important factor in recruiting and retaining nurses. Consequently, it could play a valuable role in helping VHA facilities to address their support staffing shortages.

2.3.8.10.6 Continuing education opportunities for nurses have become more limited

As of May 2014, only 43 percent of RNs across all VAMCs have a BSN degree.[191] Facilities no-longer provide or have reduced nursing educational benefits (along with educational support for many other job positions). Although scholarships are available, the application process may be complex, re-imbursement for certifications or conferences has been eliminated at some facilities, and there is little access to systems training. Several facility leaders admitted that while they acknowledge high achievers, they are unable to support their efforts monetarily.

> Senior leadership at one facility identified that nurses funding is not made available for nurse education, even though providers are budgeted $1,000 per year for training.

Research has found that facilities with a higher proportion of nurses holding a baccalaureate degree had lower surgical mortality and failure-to-rescue (that is, death following the development of a complication).[192] A better educated nurse workforce will be able to accept additional responsibilities to fill a range of new roles in patient care, prevention, and care coordination. If VHA is to help achieve the Institute of Medicine's (IOM) recommendation that the proportion of nurses in the U.S. who hold at least a baccalaureate degree be increased to 80 percent by 2020, greater support of nurse education and advancement must be provided and championed.[193] Greater education and advancement opportunities would potentially improve morale, and subsequently, retention of nurses.

[191] U.S. Department of Veterans Affairs, (2015) Workforce Management data. PAID data for occupation 0610. Nurse Managers with assign code of 87. BSN with education code G.

[192] Kutney-Lee, A., Aiken, L., & Sloane. (2013). An increase in the number of nurses with baccalaureate degrees is linked to lower rates of post-surgery mortality. *Health Affiliation Journal* (Millwood). 2013 March; 32(3): 579–586. doi:10.1377/hlthaff.2012.0504.

[193] The National Academies of Science. (2011). The Future of Nursing: Leading Change, Advancing Health. *The National Academies Press*. p12. Retrieved from http://www.nap.edu/catalog.php?record_id=12956

Promising Practice: Benefits of BSN Educated Nurses at Houston, Atlanta, and Boston

Houston, one of VHA's Magnet® Designated facilities, achieved re-certification twice and reached its goal of 82 percent of its RNs holding a baccalaureate (BSN) degree. Atlanta VAMC is another Magnet recognized facility that reports their NSI data to NDNQI®. Atlanta's current education level of RN's with baccalaureate degrees is 85.7 percent and exceeds the goal of 80 percent compliance by 2020.

Two BSN educated RNs at Boston identified a technological tool to improve provider-nurse communications through a lightweight, wearable, voice activated device used to communicate hands-free, which the entire facility now uses.

***Value*:** The benefits of having RNs with baccalaureate degrees is that for nurses to remaining current on cutting edge concepts, evidenced based practices, innovative technology, or new equipment in maintaining excellence in their practice. Nurses with BSNs and other degrees also prepares them for driving improvement initiatives and becoming leaders in the organization.

2.4 Provider Time Allocation (Objective 3)

This portion of our report covers our third objective to describe the relative time VHA providers spend on non-patient care activities. This responds to the Section 201(G) requirement for an assessment of provider time on non-case load activities, to include time at affiliate medical affiliates, research time, and time training and supervising others. To do so, we compared overall clinical and non-clinical time between VHA and the private sector using VHA's cost accounting (labor mapping) data and published data from the 2008 Health Tracking Physician Survey conducted by the Center for Studying Health System Change[194]. Our findings show that VHA physicians are generally meeting or are on par with the private sector on time spent and allocated to clinical or direct patient care. Additionally, our site visit research supports the finding that VAMCs affiliated with a medical school may have a competitive advantage for recruitment and retention (see case study later in this section for more detail), and that VA-funded research is a key provider retention tool.

Both our assessment and Assessment L (leadership) findings provide additional evidence that providers are often attracted to work at VHA due to work life balance opportunities not offered in the private sector. When providers are hired into VHA, they sign a contract, which includes the allocation of time they are expected to allocate to patient care, as well as research, education and administration activities. Because we heard that these non-patient care activities may be key attractors for a provider to come to VHA, we assess the time that providers spend

[194].Center for Studying Health System Change. Health Tracking Physician Survey. (2008) ICPSR27202-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2010-02-16. http://doi.org/10.3886/ICPSR27202.v1

on these types of activities (i.e. conducting research and training residents) by considering their contributions to attracting top talent. Of particular note:

- In considering the time providers spend on non-patient care activities, we describe the VHA research program in depth, and how it contributes to advancing state of the art Veteran care and serves as a recruitment and retention tool for VHA.
- We also review affiliate relationships and provider time mentoring and training students, residents and fellows in a clinical setting. In addition to the mission of serving Veterans and their families, VHA leads the nation in integrating medical affiliations with clinics to provide a well-rounded learning environment, which improves provider retention.

While the majority of a provider's time is dedicated to providing care to Veterans, provider satisfaction (and therefore retention) is often increased when there is an opportunity to conduct research and/or have a medical school affiliation. In this section, we report the time providers spend on these activities, and the potential impact of these opportunities.

VHA: Educating and Training the Nation's Future Clinicians

According to a VHA report, 70 percent of all VHA staff physicians have a dual appointment (for research, teaching, and/or clinical services) with an affiliate university. VHA's relationship with academic affiliates dates back to the post-World War II era. Today, VHA has over 8,000 agreements with affiliate institutions at more than 1,800 universities/institutions and supports the training of 120,000 trainees annually (VHA Procurement & Logistics Office, Affiliate Guide to VHA Contracting, retrieved from http://www.va.gov/oaa/sole_source_contracting.asp). These relationships serve as a recruitment tool for VHA. In fact, providers who complete a clinical traineeship with VHA are nearly 30 percent more likely to consider future employment with VHA.

2.4.1 Summary of time allocation findings and analysis

We have synthesized data and observations from our analysis into the following findings. The sub-sections that follow describe the findings for VHA provider time allocation in detail.

- **Finding 20.** VHA physicians spend a comparable proportion of total time devoted to clinical activities as private sector physicians. There is some potential difference in the definition of direct patient care used by the private sector, specifically with respect to training, teaching and research, but we believe this represents only a small proportion of a provider's time (See Section 2.4.2)
- **Finding 21.** Across all VHA providers, less than two percent of time is devoted to research. Since provider time spent devoted to clinical care activities is comparable to the private sector, it does not appear that research activities reduce providers' time spent treating patients. Despite the overall low proportion of time spent on research, the accomplishments of VHA's research program, and contributions to advancing care for Veterans, are numerous. (See Section 2.4.4)

2.4.2 VHA providers' clinical time is on par with the private sector (Finding 20)

VHA physicians spend a comparable proportion of total time devoted to clinical activities as private sector physicians. There is some potential difference in the definition of direct patient care used by the private sector, specifically with respect to training, teaching and research, but we believe this represents only a small proportion of a provider's direct patient care time.

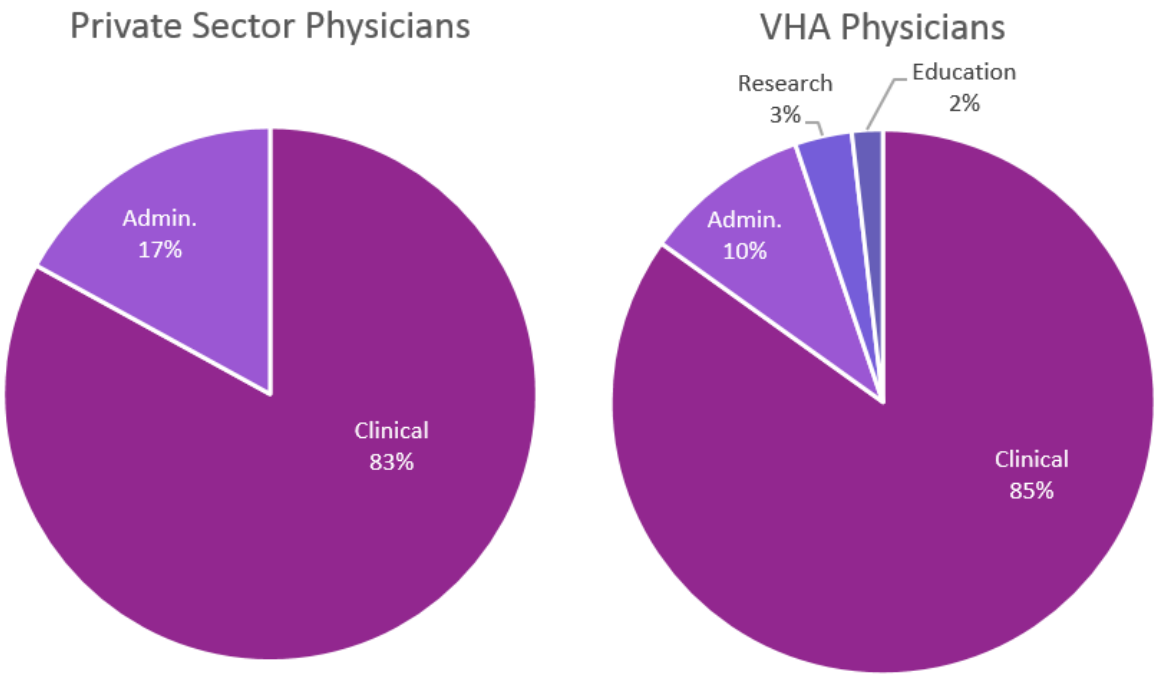
To meet the Section 201(G) requirement to assess VHA provider time spent on activities other than their case load, we analyzed VHA's cost accounting (labor mapping) data and compared it to the 2008 Health Tracking Physician Survey of 4,720 physicians (survey excludes residents and fellows). The physician survey includes time spent on patient record-keeping and patient-related office work, but excludes time spent on training, teaching and research from its definition of direct patient care activities (See Table 2-7). In comparison, VHA's definition of direct patient care includes training and research activities where they have a direct relationship to patient care. Through the course of site visits to VAMCs and interviews with over 350 providers we concluded that training, teaching and research are activities that generally occur outside of patient care hours, and usually represent a relatively small portion of a provider's direct patient care time.

We also considered the amount of VHA providers' time that is devoted to administrative activities. Frequently on site visits, VHA providers reported that the time they devoted to direct patient care is consumed by activities which are administrative in nature (e.g., charting, taking patient calls or booking a patient's follow up appointment). These administrative activities reported by VHA providers are similar in nature to the patient-related office work and record keeping that the industry survey defines as direct patient care (See Table 2-7).

Figure 2-31 highlights the percentage of time VHA physicians spend in clinical activities, in addition to administrative, education and research activities, and compared to the private sector. VHA physicians spend, on average, 85 percent of their time doing clinical work, based on labor mapping data, compared to 83.40 percent of physician time spent in clinical activities in the private sector.[195] In other words, comparing VHA physicians to the private sector highlights that VHA providers are spending a similar or slightly higher proportion of their time on clinical duties. For the reasons noted above, we do not believe that differences in the definition of activities that are included in "direct patient care" or "clinical time" are a significant factor when comparing VHA with the industry survey. Survey data on the time allocation of private sector physicians to education and research isn't available, since the survey did not break out teaching and research from what it defined as "administrative time" that is "medically-related".

[195] Woolhandler, S., & Himmelstein, D. (2014). *Int J Health Serv* October 2014 vol. 44 no. 4 635-642. doi: 10.2190/HS.44.4.a. Retrieved from http://joh.sagepub.com/content/44/4/635

Figure 2-31. Physician time allocation[196]



The proportion of VHA clinical or direct patient care time may be even higher when all VA providers are considered, as APPs tend to have a higher proportion of clinical time, and they represent 20 percent of the VHA providers. We did not include this comparison since APPs are not included in the private sector survey.

In VHA, “direct patient care” or “clinical” time (otherwise known as clinical FTE, cFTE) includes time overseeing residents, as well as completing "non-workload generating" tasks such as patient charting or making follow-up calls to patients. Administrative time includes tasks such as serving on hospital oversight committees, or completing required training. As noted above, some variance between provider clinical and administrative time in the private sector survey and VHA is due to the private sector survey not breaking out teaching and research time and differences in what VHA considers administrative time. Table 2-7 below displays the survey definition of direct patient care or clinical time and the VHA definition.

[196] Assessment G analysis of VHA labor mapping data , Provider Labor Detail FY14, provided by VHA OPES April, 9, 2015 and Woolhandler, S., & Himmelstein, D. (2014). *Int J Health Serv* October 2014 vol. 44 no. 4 635-642. doi: 10.2190/HS.44.4.a.

Table 2-7. Time allocation definitions private sector vs. VHA

	Definition from Health Tracking Physician Survey[197]	VHA Definition[198]	Key Differences
Direct Patient Care or "Clinical Care"	Direct patient care includes seeing patients, performing surgery, and time spent on patient record-keeping, patient-related office work and travel time connected with seeing patients. It does not include time spent in training, teaching, or research, any hours on-call when not actually working, and travel between home and work at the beginning and end of the work day.	Includes time to prepare, provide, and follow-up on the clinical care needs of patients, and includes: • Time spent in reviewing patient data • Consulting about patient care with colleagues (includes telephone clinics or calls consulting with consultants or staff members) • Reviewing medical records, charting patient treatments, and ordering and reviewing patient tests and consultations • Reviewing medical literature • Providing patient care, or contacting the patient or caregivers to discuss their needs • Supervising house staff residents providing care in a clinical setting, or medical students, while providing patient care • Attending educational programs designed to maintain or improve clinical skills, or participating in staff meetings focused on patient care delivery.	Provider time attending educational programs designed to maintain or improve clinical skills is included in the VHA definition but not in the survey definition. Additionally, the survey definition includes travel time connected with seeing patients; however, the VHA definition does not.

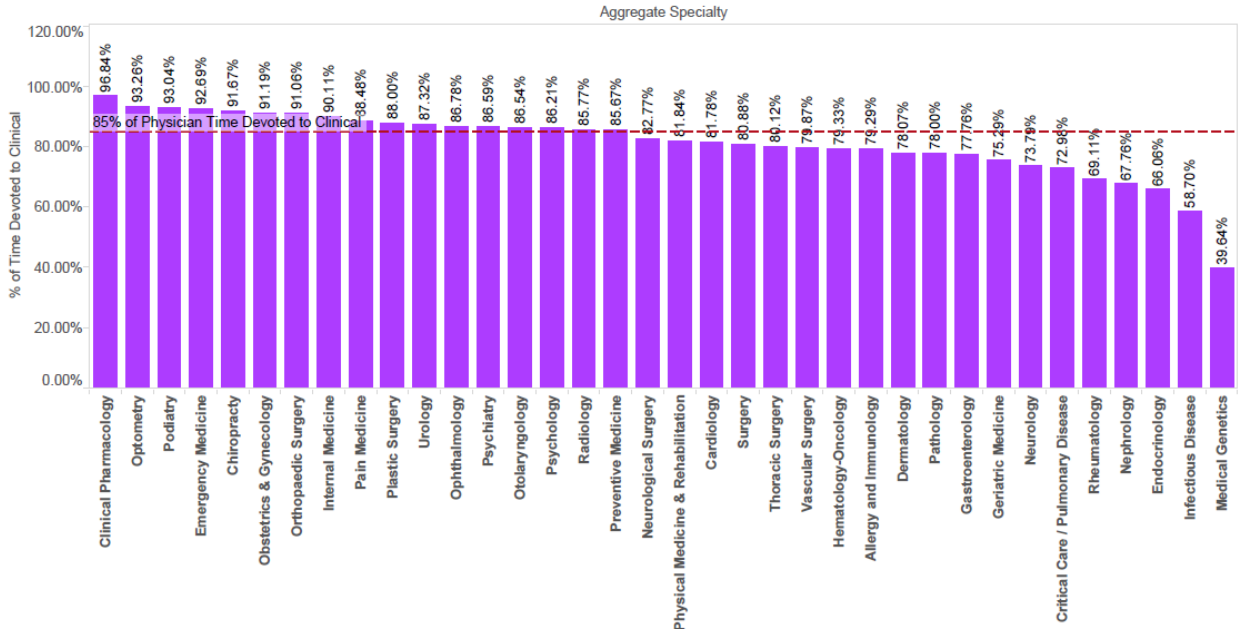
[197] Center for Studying Health System Change. Health Tracking Physician Survey. (2008) ICPSR27202-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2010-02-16.Retrieved from http://doi.org/10.3886/ICPSR27202.v1

[198] U.S. Department of Veterans Affairs. (2011). VHA Directive 2011-009 Physician and Dentist Labor Mapping. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2384

	Definition from Health Tracking Physician Survey[197]	VHA Definition[198]	Key Differences
Administrative	Time spent on administrative tasks and professional activities that are medically-related.	Time spent on managerial or administrative duties at the department, service, facility, VISN, or national level both within and outside of VA. These duties include: • Performance reviews and reporting requirements • Managing a program within a clinical department, service or hospital • Serving on state and national committees, advisory boards, or professional societies.	VHA definition is more explicit in excluding medically-related administrative tasks from the definition.
Teaching/ Education	Not defined.	Time spent providing formal didactic education, both preparation and actual classroom time. This includes conferences in the community or nationally and classroom time teaching medical school curriculum.	Not able to assess.
Research	Not defined.	Time spent performing formal, approved health care research, or in activities in direct support of approved research. This includes: • Working on research projects approved by VAMC Research and Development Committee which does not produce recorded patient care encounter workload • Working in a research laboratory or controlled setting that involves no direct patient care • Serving on a hospital or affiliate research committee • Supervising a trainee's non-clinical research • Writing for publications or grants • Attending meetings for research activities and/or presenting papers • Sitting on a national study or grant approving board.	Not able to assess.

VHA physicians have, on average, 81.2 percent of their work time devoted to clinical duties. Out of all physician labor mapped time, 85 percent is clinical. Figure 2-32 breaks out the average proportion of time allocated to clinical activities by specialty, for physicians (it does not include APPs).

Figure 2-32. Percentage of physician FTE devoted to clinical by aggregate specialty[199]



The average U.S. physician spends 8.7 hours per week doing administrative tasks in a typical 53 hour work week.[200] In comparison, the average VHA physician spends 3.42 hours of an average 40 hour work week doing administrative tasks.[201] The additional time spent on administrative tasks in the private sector would typically be spent conducting research or educational activities, such as giving didactic lecture, within VHA. Additional information about providers' time spent conducting research, engaging in educational activities, as well as time spent overseeing residents and trainees in clinic, is provided in subsequent sections, as specifically requested by the Veterans Choice Act, Section 201(G). In the immediate subsequent section, we review providers' relationships with and time commitment to affiliated academic medical centers.

[199] Assessment G analysis of Provider Labor Detail FY14, provided by VHA OPES April, 9, 2015 and Woolhandler, S., & Himmelstein, D. (2014). *Int J Health Serv* October 2014 vol. 44 no. 4 635-642. doi: 10.2190/HS.44.4.a. Retrieved from http://joh.sagepub.com/content/44/4/635

[200] The Physician's Foundation. 2014. 2014 Physician Foundation Biennial Physician Survey Report. Merritt Hawkins. Retrieved from http://www.physiciansfoundation.org/uploads/default/2014_Physicians_Foundation_Biennial_Physician_Survey_Report.pdf

[201] Assessment G team analysis of Provider Labor Detail FY14, provided by VHA OPES April, 9, 2015.

2.4.3 VHA facilities leverage affiliate relationships to serve Veterans

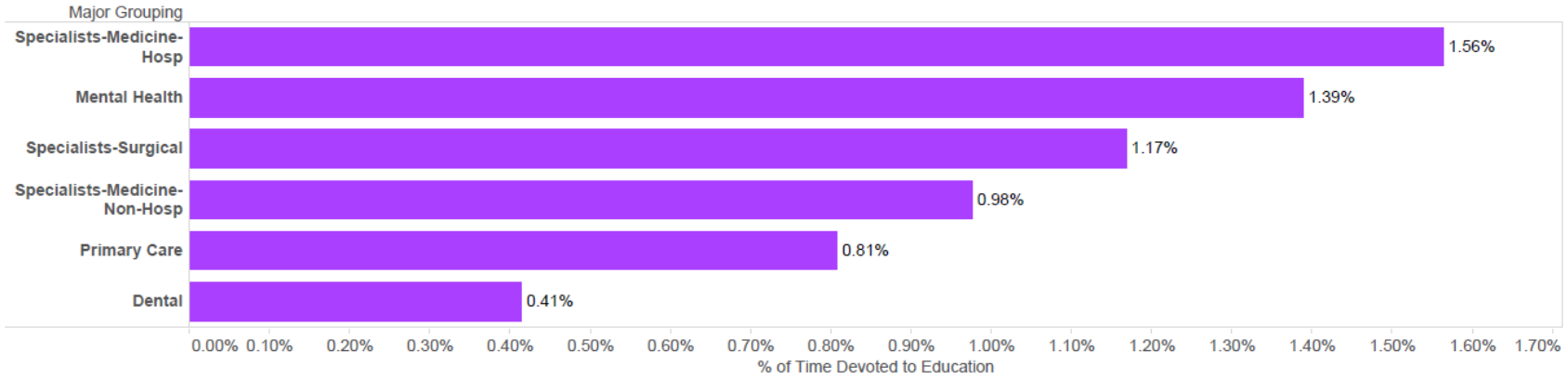
Since the end of the Second World War, the mission of VA has been tied to developing our nation's health care provider workforce. Many VA facilities across the country have close ties to academic medical centers and training programs across virtually every specialty and level of licensure. VHA's relationship with academic affiliates is a mutually beneficial relationship for all parties: "the best level of health care is provided in an environment in which the spirit of inquiry and investigation exists in combination with teaching and learning."(VHA Manual M-8, p.2)[202] The policy memorandum for affiliate relationships from the 1940s has remained largely unchanged since the 1940s, with the exception of one addition in the 1980s.[203] With this comes a provider workforce that splits their professional time between academic and VHA facilities, with various degrees of financial remuneration. VA conducts the largest education effort for health care in the United States through clinical training programs in association with the nation's leading academic institutions.

Based on labor mapping data, we found that, of all VHA providers (physicians and APPs), 1.09 percent of their VHA labor mapped (working) time was devoted to education activities, as defined by VHA. The graph below shows the allocated time to education (or training) based on specialty grouping, and was determined by taking the education FTE per specialty divided by the total labor mapped time (clinical, administrative, research, and education FTE) and grouped by Primary Care, Medical Specialty (hospital based), Medical Specialty (non-hospital based), Surgical Specialty, Mental health, and Dental. The percentage of physician time devoted to education/training (conducting educational activities with trainees in the classroom, for example, giving didactic lecture or Grand Rounds) is shown in Figure 2-33. This does not include time spent overseeing residents in the clinical setting.

[202] U.S. Department of Veterans Affairs Veterans Health Administration. (1980). *Manual M-8, Part 1, Chapter 2: Affiliations with Academic Institutions*. Retrieved from http://www.va.gov/vhapublications/publications.cfm?pub=4&order=asc&orderby=title

[203] Policy Memorandum No. 2, Policy in Association of Veteran's Hospitals with Medical Schools, January 30, 1946.

Figure 2-33. Percentage of provider time devoted to education[204]



As of 2013, 124 hospitals and 3 independent outpatient clinics have academic affiliations with 130 of 141 allopathic medical schools, and 22 of 29 osteopathic medical schools.[205] Table 2-8 shows the total resources actively participating in VHA's education program across a 7 year span.[206]

[204] Assessment G analysis of Provider Labor Detail FY14, provided by VHA OPES April, 9, 2015.

[205] U.S. Department of Veterans Affairs, Office of Academic Affiliations 2013 Statistics: Health Professions Trainees.

[206] Ibid.

Table 2-8. Total trainees actively participating in VHA education program – 7 year span[207]

	2007	2008	2009	2010	2011	2012	2013
Advanced Fellows	160	161	175	239	288	297	253
Associated Health	27,072	30,341	31,684	31,682	32,437	32,033	31,380
Dental Residents & Students	962	1,049	1,280	1,267	1,231	1,195	1,397
Physician Residents	33,843	34,075	36,410	36,745	36,816	37,809	40,420
Medical Students	18,135	20,755	20,245	20,516	21,502	20,218	21,451
Nursing Trainees	21,232	23,501	24,891	24,851	24,520	25,948	23,808
Grand Total	**101,404**	**109,882**	**114,685**	**115,300**	**116,794**	**117,500**	**118,709**

Although we requested data specifically identifying which providers held dual appointments with affiliated academic medical centers, and the proportion of time spent at each from each VAMC we visited, the data we received was sporadic and incomplete. We received data from our site visits from eight facilities; however, the most detailed information came from the Durham VAMC. We have compiled a case study detailing the Durham VAMCs affiliation relationships, which was selected primarily due to its historical relationships and breadth of affiliations with surrounding institutions.

Case Study: Leveraging Dual Affiliations at Durham VA Medical Center

Building on established relationships with Duke University Hospital and University of North Carolina at Chapel Hill and affiliations with multiple departments, the Durham VAMC leverages these relationships for recruitment and retention purposes. These affiliations are cited as a successful recruitment tool by producing positive care delivery, quality of care, and increases to provider productivity.

The Durham VAMC is a strongly affiliated VA facility serving Veterans in the Durham, North Carolina area. Located across the street from Duke University Hospital, numerous providers hold dual-appointments between the two facilities. The dental program is affiliated with the University of North Carolina at Chapel Hill (UNC). The Durham VAMC has academic affiliations for multiple departments, outside of medical residencies, including audiology and speech pathology, imaging, psychology, nursing (anesthesia and auxiliaries), optometry, pharmacy, and

[207] Assessment G Data collected through pre-site visit data call to Durham VAMC, March 2015.

rehabilitation. In total, there are 2,027 trainees currently practicing and/or rotating at the Durham VAMC. This includes 748 medical residents, 429 medical students, 300 nursing students, 115 pharmacy trainees, and 79 physician assistants in training.[208]

The following specialties shown in Table 2-9 provided data to inform this case study:

Table 2-9. Durham case study specialty and data elements used[209]

Specialty	Data Element
Anesthesia	– 12 out of 17 physicians hold dual appointments with Duke – Range from .125 FTE to .875 FTE employment at Duke
ED	– 7 out of 15 physicians hold dual appointments with Duke
Geriatric Research and Clinical Centers (GRECC)	– 8 out of 8 physicians hold dual appointments with Duke – Range from .25 FTE to 1.0 FTE at VA
Greenville CBOC	– 9 physicians on-site (specialties unclear) hold dual appointments with Duke
Mental Health Service Line (MHSL)	– 28 physicians hold dual appointments with Duke
Pathology	– 3 physicians hold dual appointments with Duke
Primary Care	– 24 out of 36 physicians in the department hold dual appointments, though only 1 was paid by Duke
Radiology	– 30 out of 34 providers in the department hold dual appointments – Range from .125 FTE to 1.0 FTE at VA
Surgical Services	– 29 out of 34 surgeons in the department hold dual appointments – Range from .125 FTE to 1.0 FTE at VA – 2 out of 34 in the department were 1.0 FTE

Through interviews with over 55 providers, the site visit team was able to gain valuable insight into the role that dual-affiliation (dual affiliation allows a provider to teach and/or practice at the affiliate institution) plays at the Durham VAMC. A majority of physicians who are employed at the Durham VAMC have dual-appointments, and indicated that the prestige and opportunities that arise from time practicing at both locations was essential to their job function. Our interviews with providers and facility leadership surfaced several themes regarding the impact of an academic affiliation on provider productivity, which included topical areas of recruitment and retention, teaching and education, research, and quality of care – all

[208] Department of Veteran Affairs Office of Academic Affiliations, Health Service Training Major Code Summary for 2014 (Durham VAMC).

[209] Assessment G Data collected through pre-site visit data call to Durham VAMC, March 2015.

of which were expressed with a positive perspective. Similar responses were echoed at many other facilities with dual affiliations as well.

A number of respondents indicated that the close affiliation with Duke University in particular was essential for recruitment and retention. In comparison with other facilities, the Durham VAMC does not experience difficulties in attracting qualified talent. The ability to have an active role in research opportunities and an affiliation with a nationally recognized medical institution, both for providers and nursing staff, were discussed as chief reasons for having a high volume of applicants. These themes were consistent across our site visits where there were academic affiliations.

Many respondents also viewed the affiliation with Duke to be tied into the unique mission of the VA, which calls not only to care for Veterans but to train the next generation of health care providers. While some respondents did cite that the heavy integration with residency programs can diminish productivity due to the length of time trainees can take to see patients, the majority felt it was a major positive in all aspects of care delivery. In particular, interviewees felt that having a robust residency program and ties to prominent medical training centers such as Duke and UNC led to boosts in recruiting, quality of care, productivity, and care delivery practices. Some response examples from facility leaders and providers include:[210]

Recruitment:

- "The proximity to Duke University has a very positive effect on the facility overall. The facility is able to recruit top-notch residents and there is enhanced collaboration between the two institutions."
- "The Duke affiliation is a huge boost to our recruiting – other VHA locations have a much more difficult time finding providers to hire. This is not just on the MD level, many NP/PAs and Nurses want to get Duke on their resume for experience. As a result, the Durham VAMC does very little recruitment for providers."
- "It is very easy for this VAMC to recruit physicians as there is an academic affiliation with Duke; the only issues that come with recruitment are due to natural attrition and turnover. By comparison, [VAMC without an affiliation] struggle due to the lack of an academic affiliation."

Care Delivery Model:

- "I am able to run a Telehealth clinic here at the VA which is not available at Duke."

Quality of Care:

- "The academic affiliation with Duke has been a major positive for quality of care. There are even volunteers from Duke who are world-renown for their work and research, which boosts the care delivered at the VHA as well as its profile nationally."
- "The affiliation with Duke is a major positive for quality of care and for attracting/recruiting providers."

[210] Quotes from providers interviewed on site visit to Durham VAMC, March 2015.

Productivity:

- "The attending/resident relationship allows for great productivity in certain specialties."
- "The close relationship with the Academic program can take additional time, and supervision can detract from productivity."

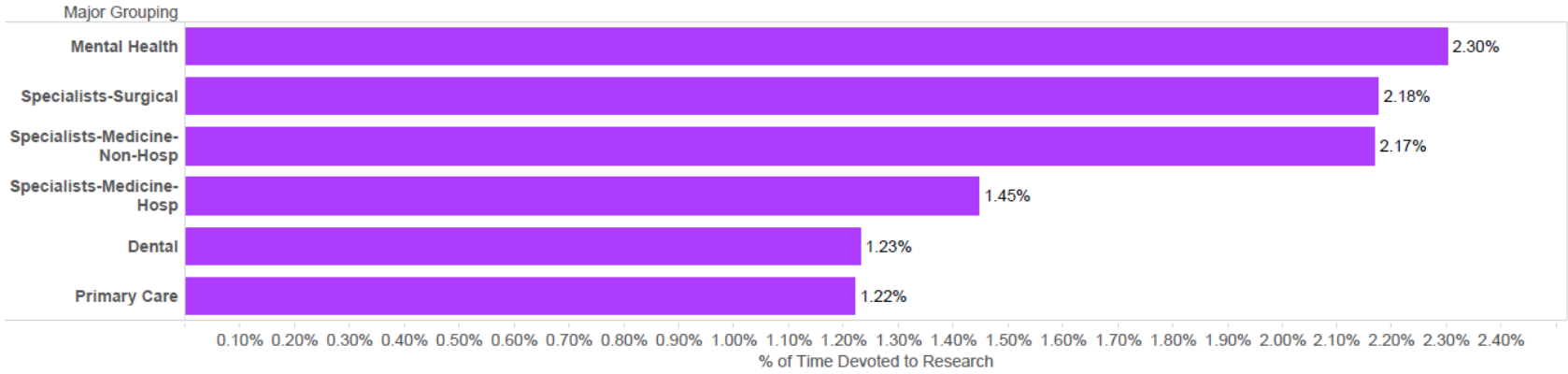
2.4.4 VHA providers advance Veteran care through research (Finding 21)

Across all VHA providers, less than two percent of time is devoted to research. Since provider time spent devoted to clinical care activities is comparable to the private sector, it does not appear that research activities reduce providers' time spent treating patients. Despite the overall low proportion of time spent on research, the accomplishments of VHA's research program, and contributions to advancing care for Veterans, are numerous.

To meet the requirements of Section 201(G) with respect to providers' time spent on research activities, we analyzed VHA's cost accounting (labor mapping) data. VHA's labor mapping data identifies individual provider research Account Level Budgeter Cost Centers (ALBCCs); as such, individual provider time conducting research was calculated by the summation of individual provider research ALBCCs.

We found that across all VHA providers, 1.97 percent of their time was devoted to research, per VHA's definition of research time. Figure 2-34 shows a breakout of provider work time allocated to research by specialty grouping, which was determined by taking the research FTE per specialty divided by the total clinical, administrative, research and education FTE, and grouping that by primary care, medical specialty (hospital based), medical specialty (non-hospital based) surgical specialty, mental health, and dental.

Figure 2-34. Provider percentage of time devoted to research[211]



Despite an overall low proportion of labor mapped time spent to research, VHA providers support a myriad of research projects in support of Veterans' unique health care needs.[212] Mental health providers have the highest proportion of time devoted to research out of all major specialty groups.

There are over 19,000 ongoing funded research studies at VA Medical Centers across the country.

[211] Assessment G analysis of Provider Labor Detail FY14, provided by VHA OPES April, 9, 2015.

[212] Clinically mapped time can include time spent conducting research, when research involves provision of care to patients (i.e. clinical trials).

In fiscal year 2015, VA will fund $600 million in research, with an additional $500 million provided through medical care support for research, and $700 million from other organizations ($500 million of which is from government entities, such as the National Institutes of Health [NIH]).[213] VHA and the Office of Research and Development (ORD)-funded research has grown from $581 million in fiscal year 2010, to an estimated $600 million in fiscal year 2016, an increase of 3.4 percent.[214, 215] There are currently 1,248 VA funded investigator clinicians, and an additional 972 VHA funded non-clinicians, for a total of 2,220 VHA funded investigators. This is an increase of approximately 11 percent from FY 2010.[216] An additional 1,091 funded investigators receive funding from NIH.[217] ORD estimated in 2010 that there were an additional 5,000 researchers not funded by ORD, but who use VA facilities, equipment, and the Veteran patient population to conduct their research.[218] Today, there are currently 19,406 ongoing funded research projects ongoing across VHA.[219] This research is ongoing at 104 VAMCs.

An evaluation of VHA's research portfolio conducted by Abt Associates in 2012 describes the impact of VHA's medical research and development (R&D) program. Specifically, Abt found that "in 2010 there were nearly 7,000 publications listing a VA address, which were cited almost 17,000 times. ORD-funded Principal Investigators (PIs) published, on average, 1.5 papers per year, a rate similar to NIH-funded investigators. The papers appeared in journals with high impact factors. Also in 2010, ORD received 10 patents and 169 licenses and filed 31 patent applications. The federal clinical trials database reported 28 Phase IV clinical trials conducted by VHA, of which 11 were marked as completed. It should be noted that this is not a definitive list of all clinical research funded by ORD." [220,] Figure 2-35 shows the research and development awards and advancements of VHA.

[213] Telephone interview with Office of Health Services Research and Development, David Atkins, Director and Timothy O'Leary, Acting Director of Biomedical Laboratory Research & Development, February 25, 2015.

[214] Evaluation of the VA medical research program, Abt Associates, September 30, 2012, provided by VHA HSR&D.

[215] Telephone interview with Office of Health Services Research and Development, David Atkins, Director and Timothy O'Leary, Acting Director of Biomedical Laboratory Research & Development, February 25, 2015.

[216] Ibid.

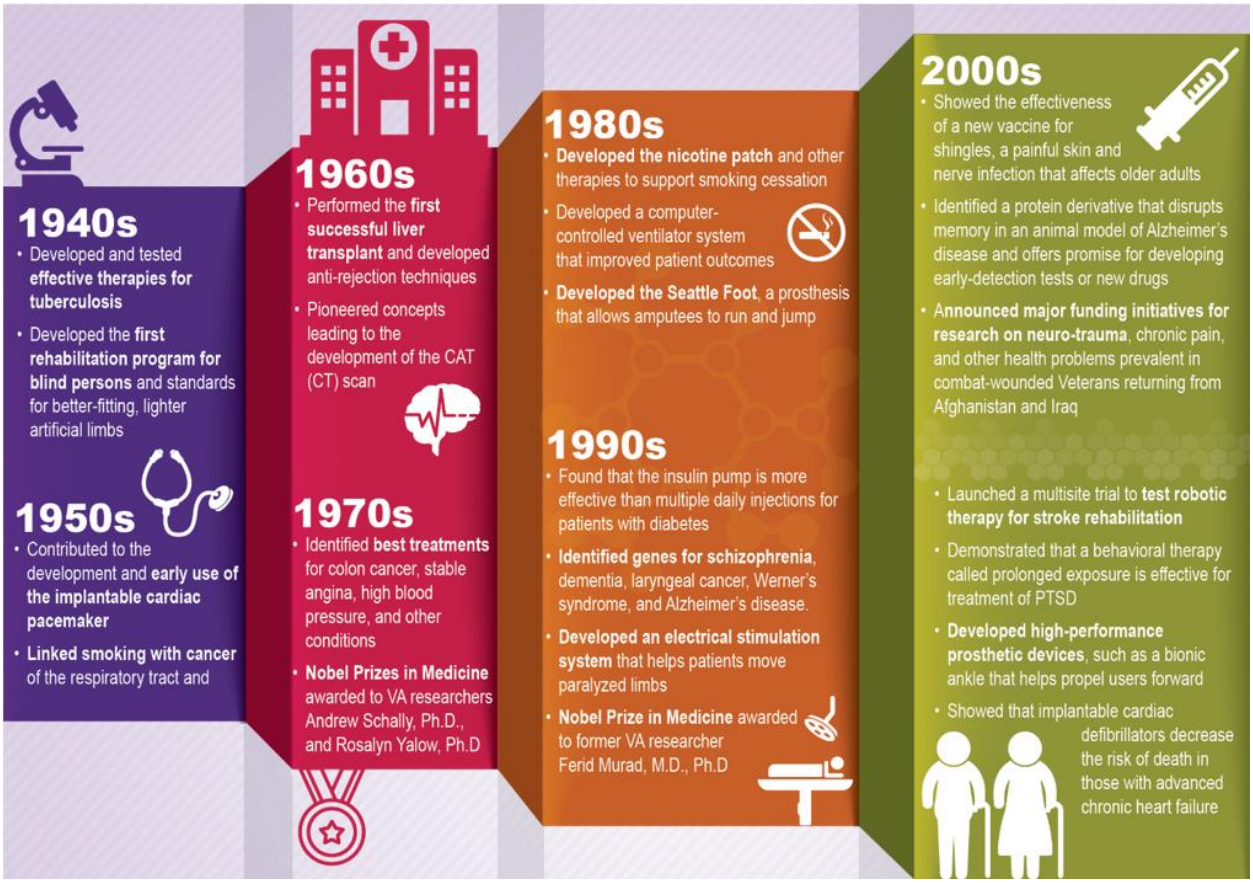
[217] MD vs. PhD Data, FY14, provided by VHA HSR&D, February 25, 2015.

[218] Ibid.

[219] Research Projects Ongoing at VA, February 25, 2015, provided by VHA HSR&D, February 25, 2015.

[220] Evaluation of the VA medical research program, Abt Associates, September 30, 2012, provided by VHA HSR&D.

Figure 2-35. VHA research and development[221]



Research as a recruitment and retention tool:

- **78 percent** of VHA providers state that research was a factor in their decision to come to VA
- **92 percent** state that it is an important factor in their decision to remain at VA

Of particular importance to any evaluation of staffing within VHA health care delivery system is the impact of a strong research program on recruitment and retention. VHA's research program was established in the 1920s to attract academic clinicians to the VHA system. The Abt study found that the research program is indeed a powerful recruitment and retention tool. Specifically, "87 percent of respondents [to the Abt survey] believed that the program was important or very important to the recruitment and retention of talented clinicians to VHA. In

[221] U.S. Department of Veterans Affairs, VHA Research Development. History of VA Research Accomplishments. Retrieved from http://www.research.va.gov/researchweek/press_packet/Accomplishments.pdf

addition, the vast majority of researchers said that research was a factor in their decision to come to (78 percent) and to remain at (92 percent) VHA."[222]

2.4.5 VHA has a statutory mission to educate the nation's health professionals

VA has a statutory mission to "educate [health professionals] for VA and for the nation." This mission is codified in Title 38 U.S.C. Through its partnerships with affiliated academic institutions, VA conducts the largest education and training effort for health professionals in the nation.[223] Section 2.4.3 above details many benefits of this training program, particularly as tools for provider recruitment and retention. Because section 201(G) of the Veteran's Choice Act requests that we report on the time providers spend training health care professionals (i.e. residents), we report that 19 percent of providers spent some of their clinical time overseeing residents and trainees. For those providers, they spent 5 percent of their overall time training these health professionals.

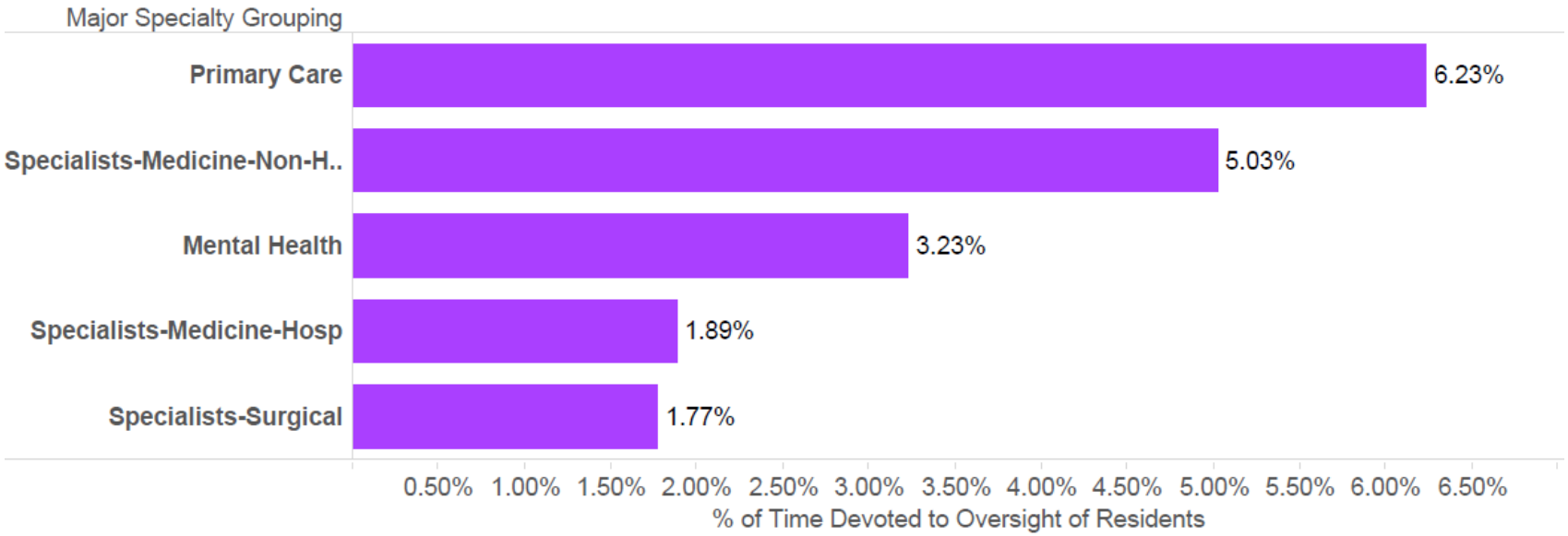
It is difficult for providers and clinic business managers to quantify the amount of time that providers oversee residents, fellows, trainees, and clinical support staff as it is ingrained with other clinical duties. However, providers can be mapped within their clinical time to time spent training residents and trainees, using an ALBCC suffix which denotes clinical education (ED). We used this time as an estimation of time spent training and supervising other health care professionals of the department.

According to FY 2014 Worked Data (labor mapping), 19 percent of providers (physicians and APPs) spent clinical time dedicated to educating/training residents and other trainees. The time spent in a clinical training capacity totaled 5 percent of their allotted yearly time. We present in Figure 2-36 the total time spent overseeing residents and trainees in clinic, by provider, by specialty grouping (primary care, medical specialty (hospital based), medical specialty (non-hospital based), surgical specialty, mental health, and dental).

[222] Evaluation of the VA medical research program, Abt Associates, September 30, 2012, provided by VHA HSR&D.

[223] U.S. Department of Veterans Affairs. Office of Academic Affiliations. Retrieved from http://www.va.gov/oaa/

Figure 2-36. Provider oversight of residents and trainees in clinic by specialty grouping[224]



[224] Assessment G analysis of Provider Labor Detail FY14, provided by VHA OPES.

3 Recommendations

VHA's staffing and productivity practices have multiple stakeholders: congress and the executive branch, VA Central Office (VACO), VISN leadership, and VAMC leaders and staff. Reducing the barriers to provider staffing and productivity, encouraging innovation and addressing challenges, will require collaboration between all of these groups, and a commitment to making difficult, long-term change. The Assessment G recommendations should be considered in concert with the findings and recommendations of the other Veterans Choice Act Assessments (Assessments E-Scheduling, F-Clinical Workflow, and H-Technology).

By implementing these recommendations, along with the recommendations of the other Veterans Choice Act Assessments, VHA can evolve into a consistently high performing health system, enabling access to the high quality care in an efficient and cost effective manner.

3.1 Summary of Recommendations

We make five key recommendations for ways to reduce the barriers and address the challenges to provider staffing and productivity:

1. VHA should improve staffing models and performance measurement. (See Section 3.2)
2. VAMCs should create the role of clinic manager and drive more coordination and integration among providers and support staff. (See Section 3.3)
3. VAMCs should implement strategies for improving management of daily staff variances, and include a replacement factor for all specialties and PACT. (See Section 3.4)
4. VAMCs should implement local best practices to mitigate space shortages within specialty clinics. (See Section 3.5)
5. VHA should improve the accuracy of workload capture. (See Section 3.6)

In formulating these recommendations, our team considered the findings and recommendations of the other Veterans Choice Act Assessments, prior reports by VA's OIG, GAO and other government bodies, together with promising VHA practices identified in the course of our site visits and best practices from external health care organizations identified through the course of our literature review. For each recommendation, we identify the supporting evidence, relevant promising or best practices, and potential near-term actions or next steps.

To help VHA implement our recommendations, we have also included a discussion of cross-cutting implementation considerations that may be used to develop, enhance, or speed implementation.

3.2 VHA Should Improve Staffing Models and Performance Measurement

Insufficient use of staffing models and performance measurement tools (for example, SPARQ reports) limits VAMCs understanding of staffing and productivity gaps and the ability of medical centers to forecast staffing needs. To address this gap, VHA should evaluate its current staffing models and develop and implement outpatient specialty care staffing models, where few currently exist. Following this, VHA should improve performance measurement systems for productivity and staffing, incorporate fee-based providers in productivity measurement, refine and fully implement the nurse staffing methodology, and consider a work measurement study to confirm existing workload data. For future reporting, OPES should complete the development of the APP productivity cube, to include completion of business rules that would allow APPs to be mapped to a specialty designation and included in OPES specialty group practice and facility productivity reports to accurately reflect care teams' overall effort and present a combined provider (doctor of medicine [MD] and APP) productivity view.

3.2.1 Summary of supporting evidence

- **Finding 3.** VHA physician staffing levels per population are, in most specialties, lower than industry ratios. These ratios are not sufficient to establish whether VHA is staffed to meet demand. One factor to consider is that even industry physician supply is not sufficient to meet demand in many specialties. Another factor to consider is that VHA uses APPs extensively, but APPs are not included in industry ratios. (See Section 2.2.6)
- **Finding 6.** The actual panel size of VHA primary care providers is lower than internal and external benchmarks (See Section 2.3.5.5). Nationally, VHA's average modeled panel size for general practice physicians is similar to the calculated ideal panel size, which is the external benchmark derived from the American Academy of Family Physicians. The maximum panel size established by VHA facilities is usually lower than VHA's modeled panel size for general practice physicians at the same facility (the internal benchmark) as well as the ideal panel size for VHA providers (the external benchmark). The actual panel size for VHA general practice physicians is 13 percent below the VHA modeled panel size, 12 percent below the external benchmark, and 5 percent below the facility maximum.
- **Finding 16.** While there has been widespread implementation of the PACT model in primary care clinics and the National Nurse Staffing Methodology in many areas of inpatient care, there are no current VHA standards for staffing levels and/or mix in specialty clinics, with the exception of eye clinics. Furthermore, VHA OPES has developed state of the art tools for managing staffing and productivity, but these tools will require improvements for leaders to more effectively leverage them in resource decisions. Without staffing models or guidance (for most specialties), and tools that facilities will use, service chiefs do not have sufficient data to justify the number of resources needed to meet patient access standards.
- **Finding 14.** Clinical and administrative support staff ratios are insufficient and may limit provider productivity. (See Section 2.3.8.4). The ratio of support staff to VHA specialty

care providers is significantly lower than in the private sector (1.22:1 versus 2.5:1 in nonsurgical specialties and 3.68:1 in multispecialty practices) and the ratio is worse (1.16:1) in the larger and more complex level 1A VHA facilities. Further, the Assessment G team found that 43 percent of the 355 providers interviewed perceived insufficient clinical support staff (for example, nurses) to be a barrier to their productivity. This issue has persisted even with the implementation of the nurse staffing methodology.

- **Finding 15.** Insufficient clinical and administrative support staff results in providers and clinical support staff not working to the top of their licensure. (See Section 2.3.8.4.1). When VAMCs do not have adequate support staff, providers and nurses are unable to work at the top of their licensure, subsequently creating a cascade effect of staff not working to the top of their skill-level and ability and limiting productivity.
- **Finding 18.** Many facilities do not have a centralized staffing office or nurse float pool to address daily staff variances or absences. (See Section 2.3.8.4.4). Most VAMCs do not have effective strategies for addressing daily staff variances, resulting in breaks in the continuity of care, as staff are redeployed to cover absences, as well as higher use of mandated overtime, under or over staffing clinics, and over reliance on shared support staff across clinics. Sixty six percent of clinical staff surveyed in VHA specialty care outpatient clinics report that when they are absent, there is typically no one who covers for them.
- **Promising VA Practices** that were identified by the Assessment G team and are relevant to these recommendations are: the PACT II specialty care clinic model at the Southern Arizona VA Health Care System in Tucson, Arizona; the staffing model for specialty care clinics developed by the Portland VA Health Care System in Oregon; and the Magnet® recognized VA facility in Atlanta, Georgia, that tracks and reports Nursing Sensitive Indicators (NSI) data to VHA's National Database of Nursing Quality Indicators (NDNQI®). These practices are described in more detail in Appendix D.
- **External Leading Practices** that were identified by the Assessment G team and are relevant to these recommendations are: the PCMH model implemented by the Military Health System (MHS) and the measurement of the Primary Care Manager's (PCM's) continuity; the approaches to staffing models at Kaiser Permanente Medical Group Northern California and Mayo Clinic; and the quality journey designations used by health care organizations to drive organizational, staffing and quality improvements. These practices are described in more detail in Appendix D.

3.2.2 Potential near term actions

- Within 12 months, VACO should conduct an evaluation of the design and implementation of current VHA staffing models, such as PACT, BHIP, and PCMH, and the National Nurse Staffing Methodology, to determine the extent to which they are sufficient to meet the goals of VHA's population health focused model and access to care. Through this evaluation, identify whether gaps exist between policy directives and the implementation of these models. For example, identify whether the models have been implemented with:
    - Adequate local data on patient demand, including special populations.

  - Appropriate level and mix of clinical and non-clinical support staff.
  - Proper delineation of roles and responsibilities so that each team member performs to their highest functional level.
  - Sufficient clinic space and exam rooms.
  - Effective practices to ensure the continuity of staff and manage daily staffing variances.
  - Adequate training in the implementation of the staffing model.
  - Appropriate metrics to measure and monitor implementation and outcomes.
- Within 12 months, VACO should conduct a program review of the PACT program and the implementation of the PACT staffing model across facilities to identify the causes of the gaps between actual, facility maximum, modeled and external benchmarks, the impacts of these performance gaps on access to quality care, the appropriateness of current guidelines and performance standards, and determine areas for improvement.
- Within 12 months, VACO should develop and implement staffing models for outpatient specialty care services across VHA that can be used by medical centers to staff clinics efficiently to meet access standards. These models should be customized to meet the patient demand and care practices of different specialty clinic types. These models should by flexible, accurate, data driven, and scalable, as emphasized in VA's Section 301 report to Congress on March 9, 2015.
- Within 24 months, VISNs and VAMCs should improve existing performance measurement systems in order to realize the benefits of specialty care staffing models. For instance, increase the utilization of VHA's SPARQ reports by medical center leadership in staffing decisions by developing a performance management infrastructure around these tools. The performance management system should include: standard operating procedures, business rules, roles and accountabilities, data quality assurance and training.
- Within 24 months, VACO should assess the productivity of fee-based providers within VA clinics to properly reflect the staffing, productivity and capacity of VA clinics. Understanding the contribution of fee-based providers to the productivity of clinics will be important to determining the capacity of VA specialty clinics to meet VA's access standards. VACO should develop a tracking mechanism to regularly monitor the productivity and FTE level of these providers so that facilities can make appropriate make vs. buy decisions.
- Within 24 months, VACO should continue to refine and implement the National Nurse Staffing Methodology (VHA Directive 2010-034) across the Operating Room and Emergency Departments. We also recommend that the Office of Nursing Services continue to evaluate the implementation of the nurse staffing methodology throughout each implementation phase to: 1) assess the adoption rate of the methodology across VAMCs, 2) identify training/implementation support needs, and 3) identify lessons learned to further improve and enhance the staffing methodology deployment.
  - To improve VHA's quality and performance measurement systems to realize the benefits of the Nurse Staffing Methodology, our team recommends VHA implement

the following actions: establish a target NHPPD range by level of care and service area; tie the NHPPD to facility budgeting and staff/workforce planning; mandate all VAMCs adopt, set targets and report NSIs to a national database such as NDNQI® in order to compare VHA's nurse quality and performance internally and externally; and pursue a quality journey designation, such as Magnet® or Baldridge, on order to drive improvements using National Nurse Staffing Methodology and nursing quality data.

- To improve the performance management systems to realize the benefits of the National Nurse Staffing Methodology, we recommend VHA continuously monitor actual FTE/HPPD to target FTE/HPPD variances, determine the VA national target HPPD range by reviewing external benchmarks (NDNQI®, LMI, Truven ActionOI®, etc.) by level of care and service area, and update the VHA Directive 2010-034 to align with the VHA national target HPPD range. In outpatient care, since there are currently no well-established nursing quality metrics reported or benchmarked in the industry, VHA should continue to conduct research and investigate how to develop appropriate nursing quality measures for outpatient care.

- Within 24 months, VACO should conduct a work measurement study (or confirm existing workload data) to determine the volume and distribution of workload annually to better match staffing requirements to demand. This will provide visibility in areas where core and surge resources may be needed and can inform the development of alternative staffing models. Understanding the workload distribution will also provide insights in how scheduling practices may be revised to maximize coverage.

3.3 VAMCs Should Create the Role of Clinic Manager and Drive More Coordination and Integration among Providers and Support Staff

Organizational siloes and separate reporting lines exist for physicians, nurses and medical service administrators at a majority of VAMCs. Additionally, there is frequently no dedicated manager responsible for the operations of VHA outpatient clinics. This makes it difficult for service chiefs and administrators to properly understand current clinic staffing and performance, coordinate daily staffing, and predict the future staffing needs of clinics. To address this gap, within 12 months VHA should create the role of clinic manager for specialty care clinics within each medical center. Under the general supervision of the physician leader, the clinic manager will be responsible for the supervision, direction, and coordination of the day-to-day operations of the clinic, including staffing and productivity.

To create more coordination and integration among providers, nursing staff, and medical service administrators, VAMCs could create multidisciplinary management teams for specialty clinics that include a physician leader, nurse leader, and business administrator. Alternatively, VAMCs could establish a single or dual reporting line and a service-line operating model (emphasizes groupings of specialties based on a care continuum, such as cardiac care) for providers and clinical and non-clinical staff, so that all members of the specialty clinic team have greater accountability to each other and to the service of the patient. The service chief could direct all staff in their daily patient care activities. The nurse executive position could be retained in the organizational structure to guide nursing staff in the scope of their practice. The

operating model should define: 1) span of control across the care continuum 2) the alignment of performance incentives 3) standardized roles and titles 4) standardized usage of data tools and metrics for clinics.

3.3.1 Summary of supporting evidence

- **Finding 17.** Organizational siloes and separate reporting lines exist for physicians, nurses and medical service administrators at a majority of VAMCs. As a result, service chiefs do not have control over the resourcing and performance of their clinical support staff (nurses) or clerical and administrative support staff. (See Section 2.3.8.4.3). This makes it difficult for service chiefs and administrators to properly understand current clinic staffing, coordinate daily staffing, and predict future staffing needs. Local clinical leaders reported that separate reporting lines make it more difficult to create a shared sense of accountability among clinical and non-clinical staff for the performance of clinics. Additionally, we observed that few clinics had a formal clinic manager who worked in partnership with the physician leader to manage the day-to-day operations of the clinic
- **Promising VA Practices** that were identified by the Assessment G team and are relevant to these recommendations are: the Fargo VA Health Care System in North Dakota realigned MSAs under the responsibility of a physician leader, the Service Line Chief; at the Huntington VA Medical Center in West Virginia, specialties were organized along service lines (groups of related specialty services provided by an interdisciplinary team of providers). These practices are described in more detail in Appendix D.
- **External Leading Practices** that were identified by the Assessment G team and are relevant to these recommendations are: the Walter Reed National Military Medical Center in Bethesda, Maryland, organizes clinical support staff and administrative staff for each specialty service under a physician service chief, or administrative officer that reports to the service chief, if the clinic is larger; at the Kaiser Permanente Medical Group Northern California Region, outpatient nursing and administrative staff are employed by the physician-owned Kaiser Permanent Medical Group, not the hospital, and report to the physician leader of each specialty clinic. These practices are described in more detail in Appendix D.

3.3.2 Potential near term actions

- Within 12 months, VACO should conduct a review of organization reporting structures within VAMCs and following the results of this exercise convene a meeting of clinical and administrative leaders from across the VISNs to develop agreed-upon options for implementing the clinic manager role and achieving greater coordination and integration between physicians, nursing and administrative staff at the clinic level.
- Within 12 months, VACO should develop and publish a directive which details the agreed-upon options for meeting the goals of coordination and integration.
- Within 12 months, VACO should develop a job description and staff classification for the role of clinic manager.

- Within 24 months, VAMCs should incorporate the role of clinic manager into budgets and develop a plan to recruit and staff this role.

3.4 VAMCs Should Implement Strategies for Improving Management of Staff Variances and Absences

Ineffective management of daily staff variances exacerbates staff shortages. We did not find facilities had a centralized staffing or nurse float pool to address daily staff variances or absences. Lack of such a strategy can result in breaks in the continuity of care, as staff are redeployed to cover absences, as well as higher use of mandated overtime, under or over staffing clinics, and over reliance on shared support staff across clinics. To address this gap, within 24 months, VHA should improve the management of daily staffing variances by implementing strategies that: assess the appropriate mix of staff for inpatient care based on census variation; implement a float pool; include a replacement factor in staffing models; and developing a consistent staffing approach for continued observation (CO).

3.4.1 Summary of supporting evidence

- **Finding 18.** Many facilities do not have a centralized staffing office or nurse float pool to address daily staff variances or absences. (See Section 2.3.8.4.4). Most VAMCs do not have effective strategies for addressing daily staff variances, resulting in breaks in the continuity of care, as staff are redeployed to cover absences, as well as higher use of mandated overtime, under or over staffing clinics, and over reliance on shared support staff across clinics. Sixty six percent of clinical staff surveyed in VHA specialty care outpatient clinics report that when they are absent, there is typically no one who covers for them.
- **Promising VA Practices** that were identified by the Assessment G team and are relevant to these recommendations are: the Fargo VA Health Care System in North Dakota, used several techniques, for example, float pools, to flex nursing staff to address daily staffing variances across inpatient units and outpatient clinics; the VA Medical Center in Houston, Texas, used CareWare®, a commercially available nurse staffing software to monitor and address daily staffing variances.
- **External Leading Practices** that were identified by the Assessment G team and are relevant to these recommendations are: Aultman Hospital, an 800+ bed Magnet® facility, implemented a central staffing office and a specialized float pool where financial incentives were provided for part-time nurses to pick up additional shifts; using a float pool has become a major strategy for health care organizations to help staff the facilities replacement factor for leaves for example, sick call-ins, vacations, or to cover high-volume needs.

3.4.2 Potential near term actions

- Within 12 months, VACO should assess the appropriate mix of full-time, part time, and intermittent staff for inpatient care based on census variation. Our team observed that

VHA is already following some best practices to address daily variances such as conducting daily bed management meetings and cross-training staff to work in multiple units/clinics.

- Within 12 months, VAMCs should establish a central staffing office and float pool in the medical center that includes full-time, part-time, and intermittent staff to achieve the targeted HPPD.
- Within 12 months, VACO should include a replacement factor across all staffing methodologies/models. In the inpatient setting, consider funding the float pool with the replacement factor as identified in the National Nurse Staffing Methodology. In the outpatient setting, develop a replacement factor methodology (the PACT model does not include a replacement factor).
- Within 24 months, VACO should evaluate CO (continual observation) utilization based on historical usage, estimating potential reduction in those hours based on protocol development and develop a flexible staffing methodology to address CO needs (include CO workload into the float pool).

3.5 VAMCs Should Implement Best Practices to Mitigate Space Shortages in Specialty Clinics

A shortage of exam rooms and poor configuration of space may limit provider productivity. Insufficient exam rooms and poor configuration of space limits provider productivity and their ability to maximize patient throughput while reducing patient access. To address this gap, within 24 months, VAMCs should develop and implement strategies to mitigate the impact of space shortages within specialty clinics. VAMCs should consider strategies such as: 1) Expanded clinic hours of operation; 2) Standardized schedule templates to optimize the use of exam rooms; 3) System redesign initiatives to improve patient flow within the clinic; 4) Increased use of non-face-to-face encounters in specialty care for follow-up consults; 5) Evaluating the changing of return visit interval when appropriate and/or change mode of return visit, for example, alternatives to face-to-face visit, such as telephone or secure messaging; 6) Developing exam room ratios to meet the needs of staffing models.

3.5.1 Summary of supporting evidence

- **Finding 13.** Insufficient exam rooms and poor configuration of space limits providers' productivity, ability to maximize patient throughput and reduces patient access. (See Section 2.3.8.3).
- **Promising VA Practices** that were identified by the Assessment G team and are relevant to these recommendations are: the Boston VA Health care System in Massachusetts, in order to work around space shortages, expanded clinic hours to provide care in the evening and weekends
- **External Leading Practices** that were identified by the Assessment G team and are relevant to these recommendations are: at the Kaiser Permanente Northern California Region, outpatient specialty clinics have implemented care models that use multiple

modes to deliver patient care for example, group visit, individual office visit, telephonic and video consultations, and secure email. These multiple modes are important to make the most efficient use of clinic space and to maximize access to face-to-face appointments for first-time patients. The Mayo Clinic in Rochester, Minnesota has addressed space utilization by moving away from standard room ratios to a utilization standard (percentage of the day that a clinic uses a room). Based upon the utilization metric, rooms can be given to a clinic and taken away based on this standard.

3.5.2 Potential near term actions

- Within 12 months, VACO should conduct a review of clinic space configuration, with particular emphasis on specialty care. Following the results of this assessment, VACO should convene a meeting of VISN clinical, administrative, and facilities engineering and space planning leaders to review the findings and develop national standards for clinic space configuration.
- Within 12 months, VACO should assess alternate strategies to optimize existing space and alleviate the demand on clinic space. This study should examine internal and external best practices for strategies such as: 1) Expanded clinic hours of operation; 2) Standardized schedule templates to optimize the use of exam rooms; 3) System redesign initiatives to improve patient flow within the clinic; 4) Increased use of non-face-to-face encounters in specialty care for follow-up consults; 5) Evaluating the changing of return visit interval when appropriate and/or change mode of return visit, for example, alternatives to face-to-face visit, such as telephone or secure messaging; 6) Developing exam room ratios to meet the needs of staffing models.
- Within 24 months, VACO should develop a directive with national guidance for optimizing existing clinic space and alleviating demand on clinic space.
- Within 24 months, VAMCs should review the directive and customize and implement the recommended strategies for optimizing their existing space and alleviating the demand on clinic space.

3.6 VHA Should Improve the Accuracy of Workload Capture

Providers may not be fully documenting their clinical workload. This may impact the accuracy of wRVU productivity measurement and the ability of medical facilities to properly manage providers' availability. It is also important to measuring whether clinical pathways are being appropriately followed and understanding care outcomes. To address this gap, VHA should conduct an audit of medical record documentation and CPT® coding and diagnosis accuracy/reliability to validate physician productivity measurement. Further, VHA should evaluate the ability of commercially available CAC applications to assist providers, or professional coders, with coding.

3.6.1 Summary of supporting evidence

- **Finding 19.** During site visits and interviews with VHA Central Office leaders, we consistently heard concerns that providers do not fully document and accurately code all of their clinical workload. (See Section 2.3.8.5).
- **Promising VA Practices** that were identified by the Assessment G team and are relevant to these recommendations are: at the VAMC in Detroit, Michigan, facility leaders found productivity (wRVUs) within the Nephrology clinic was 12 percent off the national median. They investigated and found that workload within the Nephrology clinic was not being captured accurately. The Section Chief worked with the providers to address the coding issue and productivity increased from 12 to 94 percent. The facility highlighted this success and other clinics, as a result, became more aware of the importance of accurate coding.
- **External Leading Practices** that were identified by the Assessment G team and are relevant to these recommendations are: Coding Assistance Applications (otherwise known as computer assisted coding, or CAC) are increasingly being used by the private sector to improve coding consistency and reduce errors; at the Kaiser Permanente Northern California Region, coding is not used for the purposes of billing. The principle purpose of coding is to create a database of discrete, specific, and identifiable clinical activities. For clinicians, the goal of coding is to measure and understand clinical demand, the specific care activities provided and to track clinical outcomes for specific groups of patients. Additional uses are for the appropriate regulatory, business and financial needs of Kaiser Permanente.

3.6.2 Potential near term actions

- Within 12 months, VACO should conduct an audit of medical record documentation and CPT® coding and diagnosis accuracy/reliability. It should use the results of this assessment to further validate physician productivity measurement.
- Within 12 months, VACO should evaluate national and facility-level coding policies and procedures. VHA should use the results of these studies to improve provider training in coding and develop improved and standardized procedures for workload capture and validation across the VHA system.
- Within 12 months, VACO should evaluate the ability of commercially available CAC applications to assist providers, or professional coders, with coding.
- Within 24 months, VACO should work with VAMCs to procure and implement CAC applications in medical facilities.

3.7 Implementation Considerations

As previously noted and in alignment with Section 201 of the Choice Act, the assessments, findings and recommendations were developed independently. We therefore expect the recommendations for Assessment G will need to be refined and integrated by VHA leadership into ongoing change efforts (for example, MyVA). There are a number of cross-cutting

implementation considerations for the successful adoption of the recommendations described in Section 3.6. These implementation considerations may be used to develop, enhance, or speed implementation. They are described here:

3.7.1 Understand the systemic nature of the issues and the solutions needed to address them

Current approaches to dealing with staffing and productivity challenges typically prompt leaders to initiate a series of discrete change initiatives with specific technical and tactical interventions. These discrete initiatives may result in new roles and responsibilities, training, or a national policy or mandate for medical facilities to follow. Experience shows that these initiatives will have varying degrees of success because they frequently do not address the underlying problems of "whole systems". To enhance the chances of success for the recommendations outlined in this assessment, we recommend that VHA leaders adopt a "whole systems" perspective and engage those involved in the problems or issues (facility leaders, physician leaders, providers, clinical support staff, administrative support staff,) in co-creating the solutions to these issues. The solutions to these issues are best when they emerge from the interactions of divergent points of view in service of an overarching goal.

3.7.2 Seize the opportunity to bring stakeholders together to co-create solutions

Co-creation has been increasingly embraced by government as an opportunity to solve complex challenges and transform government. For example, the White House Open Government Initiative has involved more than 42,000 citizens in more than 300 challenge competitions to help solve some of the most challenging and important problems facing the nation. The NASA Center of Excellence for Collaborative Innovation uses public participation through competitions to help NASA extend and accelerate innovation, increase its problem solving capacity, generate ideas, and solve vexing problems. VA's Center for Innovation (VACI) has since 2010 worked to identify, test and evaluate new approaches to the agency's most pressing challenges. VACI holds employee competitions each year which target innovations for health care and VA business processes and practices.

Many leaders assume, incorrectly, that solutions to problems proposed by a limited set of players can be propagated throughout the agency. They label people with dissenting points of view, who may hold insights into how the changes can be improved, as obstacles to change. The co-creation approach on the other hand recognizes that everyone who is involved in the problem must be involved in the solution.

3.7.3 Understand the resource implications of new and existing mandates

It is critical that leaders understand the resource implications for medical facilities of new directives and initiatives from central office. Unfunded mandates were seen as a significant challenge by leaders and staff at the VAMCs we visited. For example, the Assessment F team found that mandated clinical staff positions for primary care PACT were reported by providers to have been filled by pulling clinical staff from other programs and from the inpatient setting.

Similarly, the implementation of the national nurse staffing methodology was undermined by the failure to fund this mandate. While these are only two examples from interviews on site visits, it is clear that facilities are feeling challenged in their ability to execute against multiple mandates. In any instance where targeted new initiatives and mandates, such as those recommendations above, are being contemplated, congress and VACO should strongly consider whether additional resources are required and provide them as needed.

Appendix A Supplemental Provider Productivity Data

This appendix contains additional content, tables, and figures used to inform findings.

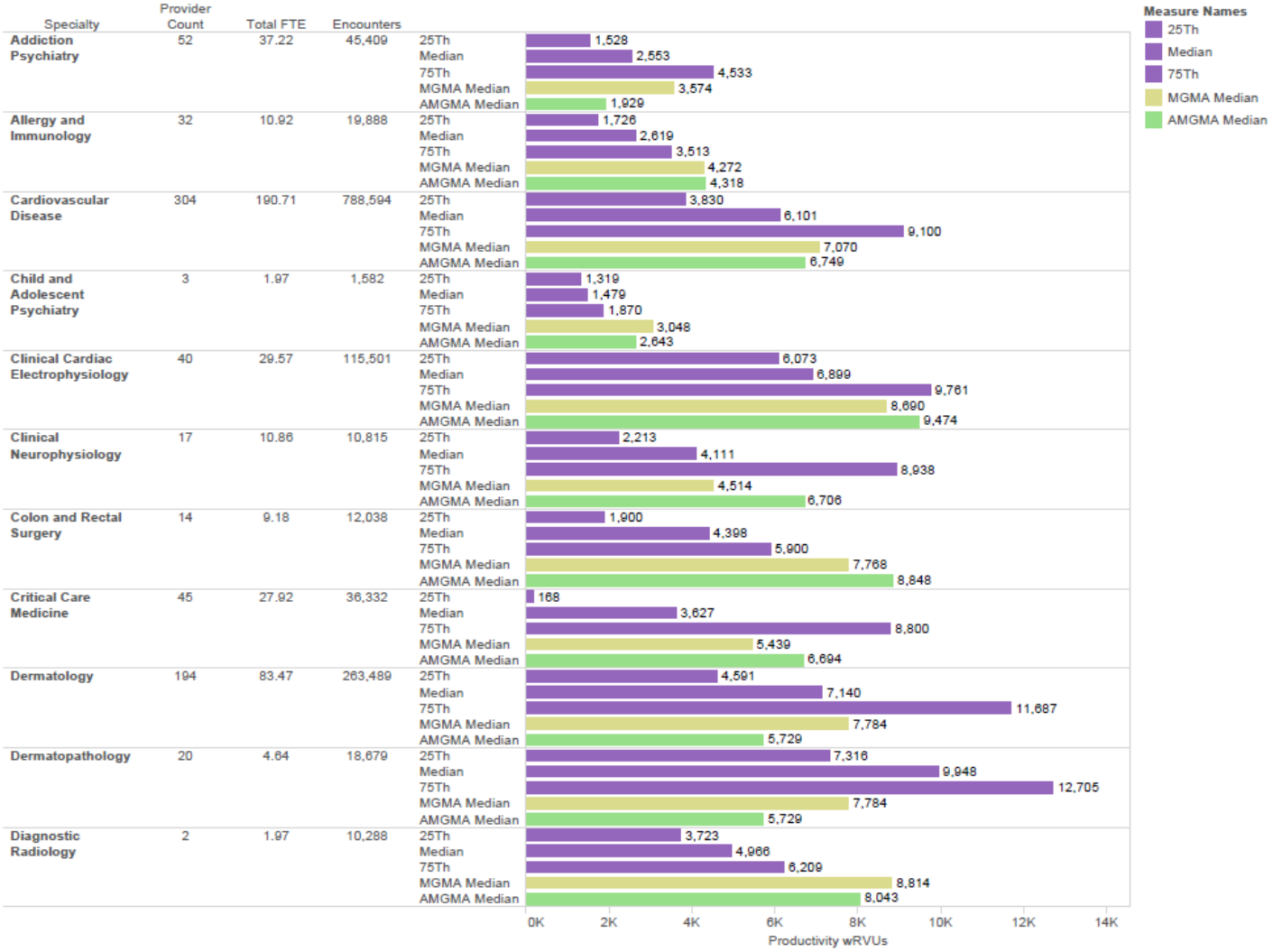
A.1 Productivity (wRVU) by Specialty

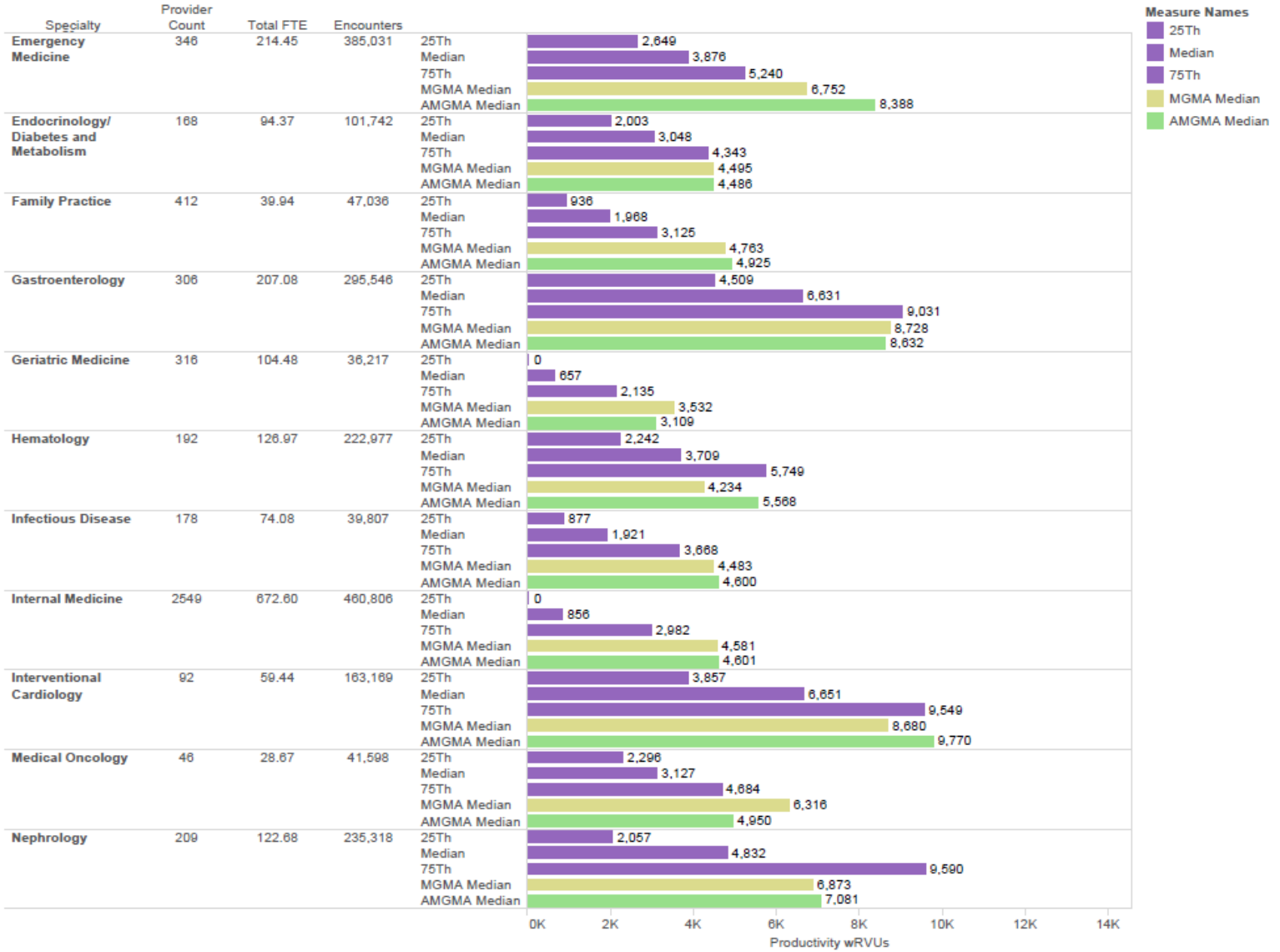
Figure A-1 provides additional detail in support of Section 2.3.6, Specialty Care. The graphs illustrate wRVU productivity internal and external benchmarks for all providers, by specialty, at complexity level 1A facilities. It also includes, for each specialty: total headcount of providers, total paid FTE (includes non-working compensated time), and total encounters generated during FY 2014. It depicts the internal percentiles of wRVU productivity, alongside the median performance in MGMA and AMGMA survey benchmark data sets. These graphs highlight instances in which a particular specialty may have lower median productivity than benchmark data sets, yet have higher productivity at the 75th percentile relative to the benchmark medians. Of note, since APPs cannot be mapped to an individual specialty, they are excluded from this analysis, both in the VHA data and in the benchmarks. Primary care providers have been removed from this data set; as such, the internal medicine category would include primarily hospitalists or other internal medicine providers not working in a primary care setting.

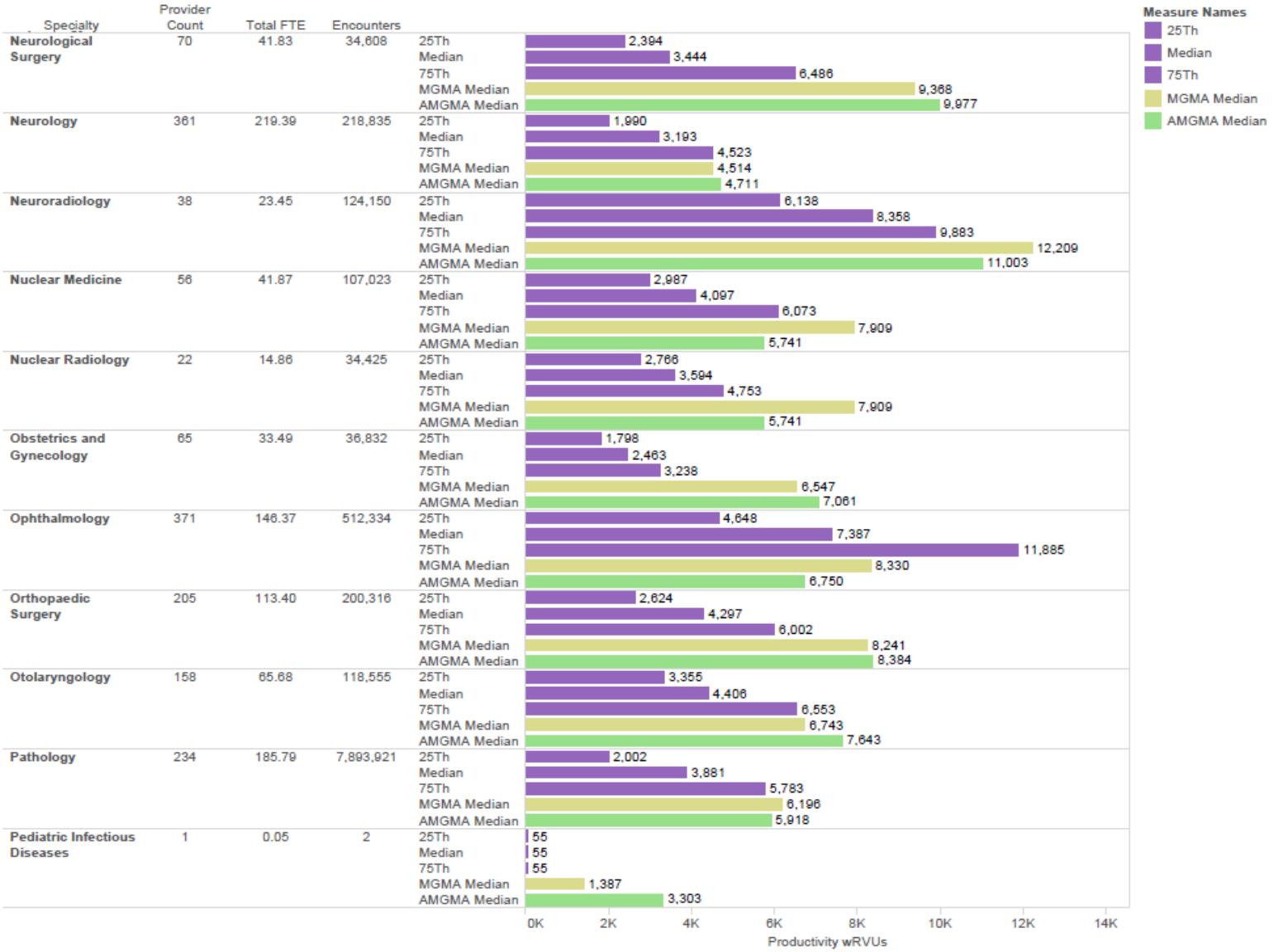
Following, Figure A-2 shows the same data for complexity level 3 facilities.

Figure A-1 and Figure A-2 show the results of an Assessment G analysis which used Provider Detail FY14 provided by VHA OPES, February 26, 2015, and Provider Labor Detail FY14 provided by VHA OPES, April, 9, 2015, as well as the 2014 AMGMA and MGMA surveys for benchmarking.

Figure A-1. Internal and external productivity benchmarks by wRVUs, complexity level 1A facilities






Specialty
Provider Count
Total FTE
Encounters
Neurological Surgery 70 41.83 34,608
Neurology 361 219.39 218,835
Neuroradiology 38 23.45 124,150
Nuclear Medicine 56 41.87 107,023
Nuclear Radiology 22 14.86 34,425
Obstetrics and Gynecology 65 33.49 36,832
Ophthalmology 371 146.37 512,334
Orthopaedic Surgery 205 113.40 200,316
Otolaryngology 158 65.68 118,555
Pathology 234 185.79 7,893,921
Pediatric Infectious Diseases 1 0.05 2
25Th
Median
75Th
MGMA Median
AMGMA Median
2,394
3,444
6,486
9,368
9,977
1,990
3,193
4,523
4,514
4,711
6,138
8,358
9,883
12,209
11,003
2,987
4,097
6,073
7,909
5,741
2,766
3,594
4,753
7,909
5,741
1,798
2,463
3,238
6,547
7,061
4,648
7,387
11,885
8,330
6,750
2,624
4,297
6,002
8,241
8,384
3,355
4,406
6,553
6,743
7,643
2,002
3,881
5,783
6,196
5,918
55
55
55
1,387
3,303
0K
2K
4K
6K
8K
10K
12K
14K
Productivity wRVUs
Measure Names
25Th
Median
75Th
MGMA Median
AMGMA Median


Specialty
Provider Count
Total FTE
Encounters
Physical Medicine and Rehabilitation 247 183.53 202,220
25Th 2,006
Median 2,965
75Th 4,590
MGMA Median 4,472
AMGMA Median 5,348
Plastic Surgery 83 40.51 48,058
25Th 2,146
Median 3,778
75Th 5,663
MGMA Median 6,463
AMGMA Median 8,775
Psychiatry 1356 998.30 1,420,249
25Th 1,904
Median 3,059
75Th 4,506
MGMA Median 3,574
AMGMA Median 1,929
Psychology 1978 1,516.95 1,740,034
25Th 1,053
Median 1,915
75Th 2,785
MGMA Median 2,467
AMGMA Median 1,775
Public Health and General Preventive Medicine 57 36.75 21,514
25Th 471
Median 861
75Th 1,192
MGMA Median 4,581
AMGMA Median 4,601
Pulmonary Disease 242 165.04 274,722
25Th 2,441
Median 4,271
75Th 8,218
MGMA Median 6,232
AMGMA Median 4,907
Radiation Oncology 40 33.33 72,987
25Th 2,188
Median 4,155
75Th 6,462
MGMA Median 7,746
AMGMA Median 9,581
Radiology 439 318.15 1,896,938
25Th 4,448
Median 5,896
75Th 7,557
MGMA Median 8,814
AMGMA Median 8,043
Radium Therapy 3 2.70 2,568
25Th 925
Median 2,310
75Th 2,783
MGMA Median 7,746
AMGMA Median 9,581
Rheumatology 126 70.21 94,239
25Th 2,538
Median 3,619
75Th 5,019
MGMA Median 4,652
AMGMA Median 4,299
Spinal Cord Injury Medicine 98 31.67 19,515
25Th 518
Median 2,579
75Th 8,688
MGMA Median 4,472
AMGMA Median 5,348
0K
2K
4K
6K
8K
10K
12K
14K
Productivity wRVUs
Measure Names
25Th
Median
75Th
MGMA Median
AMGMA Median

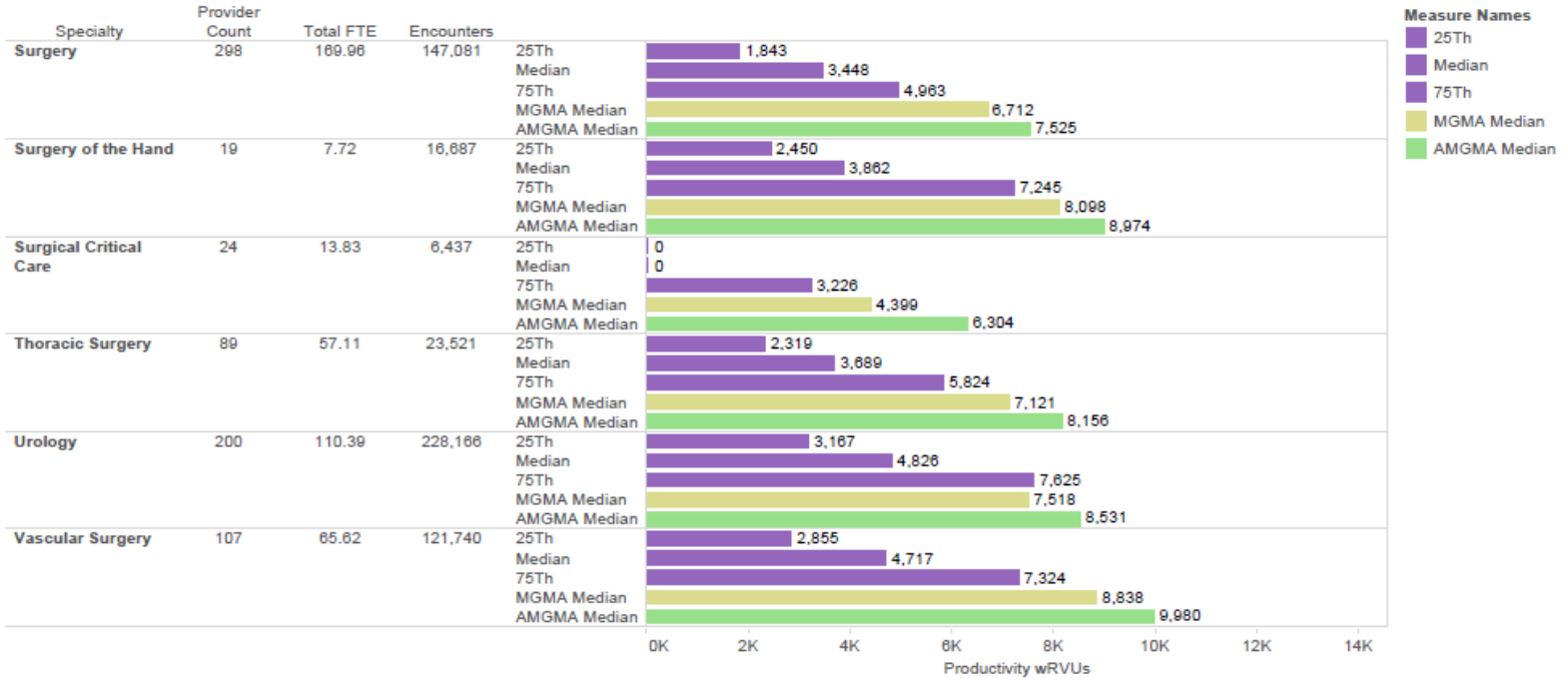
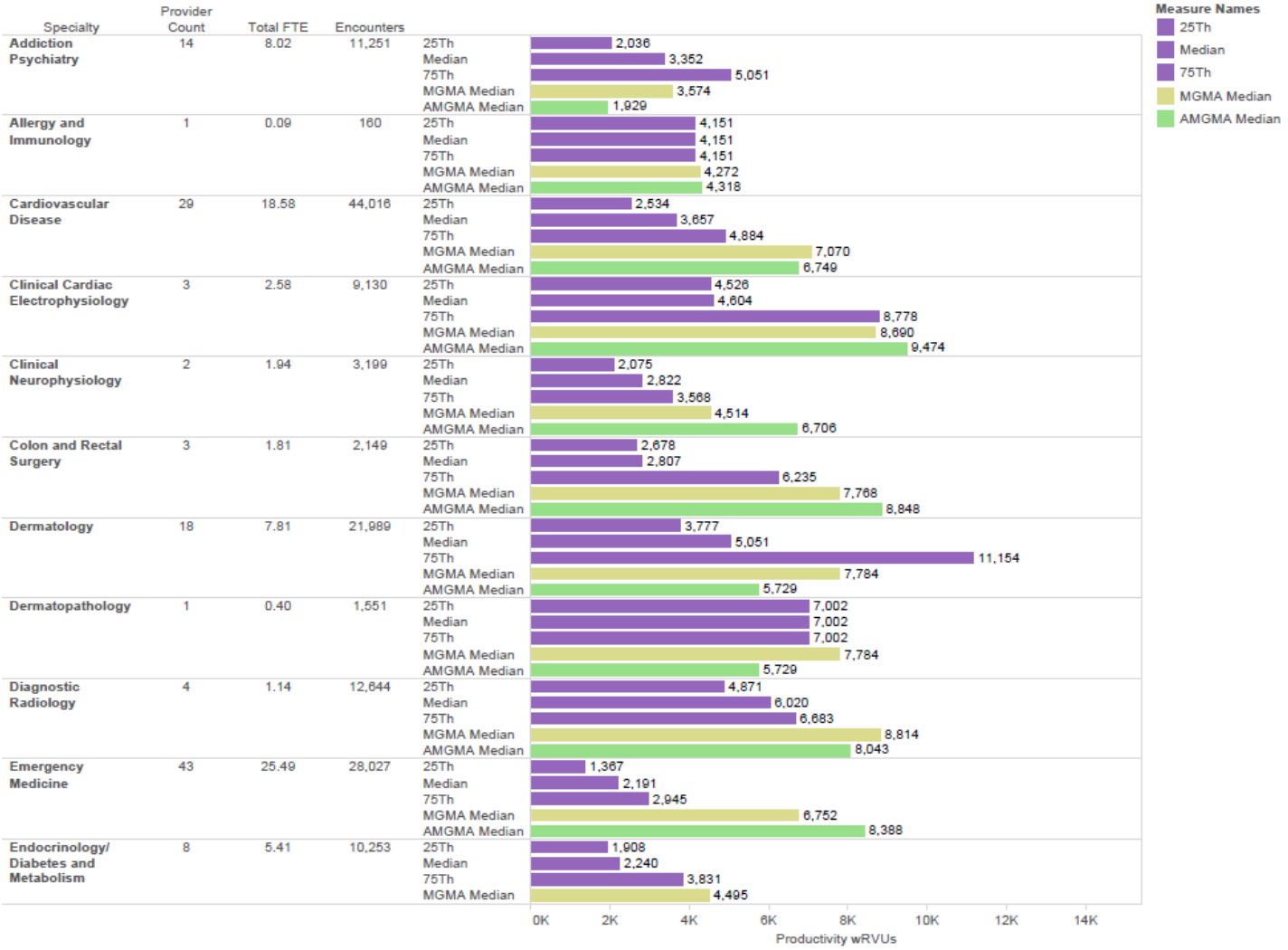
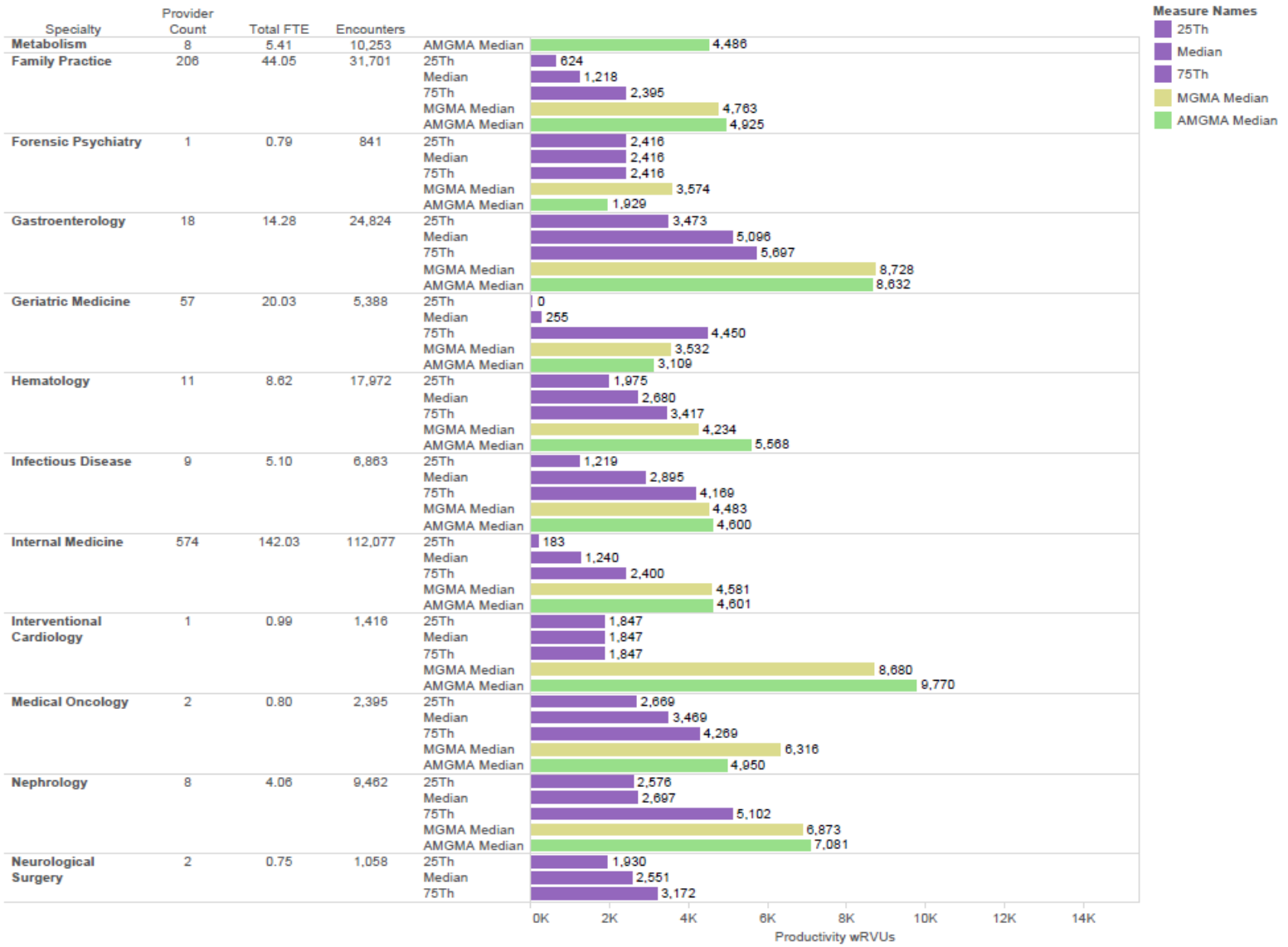
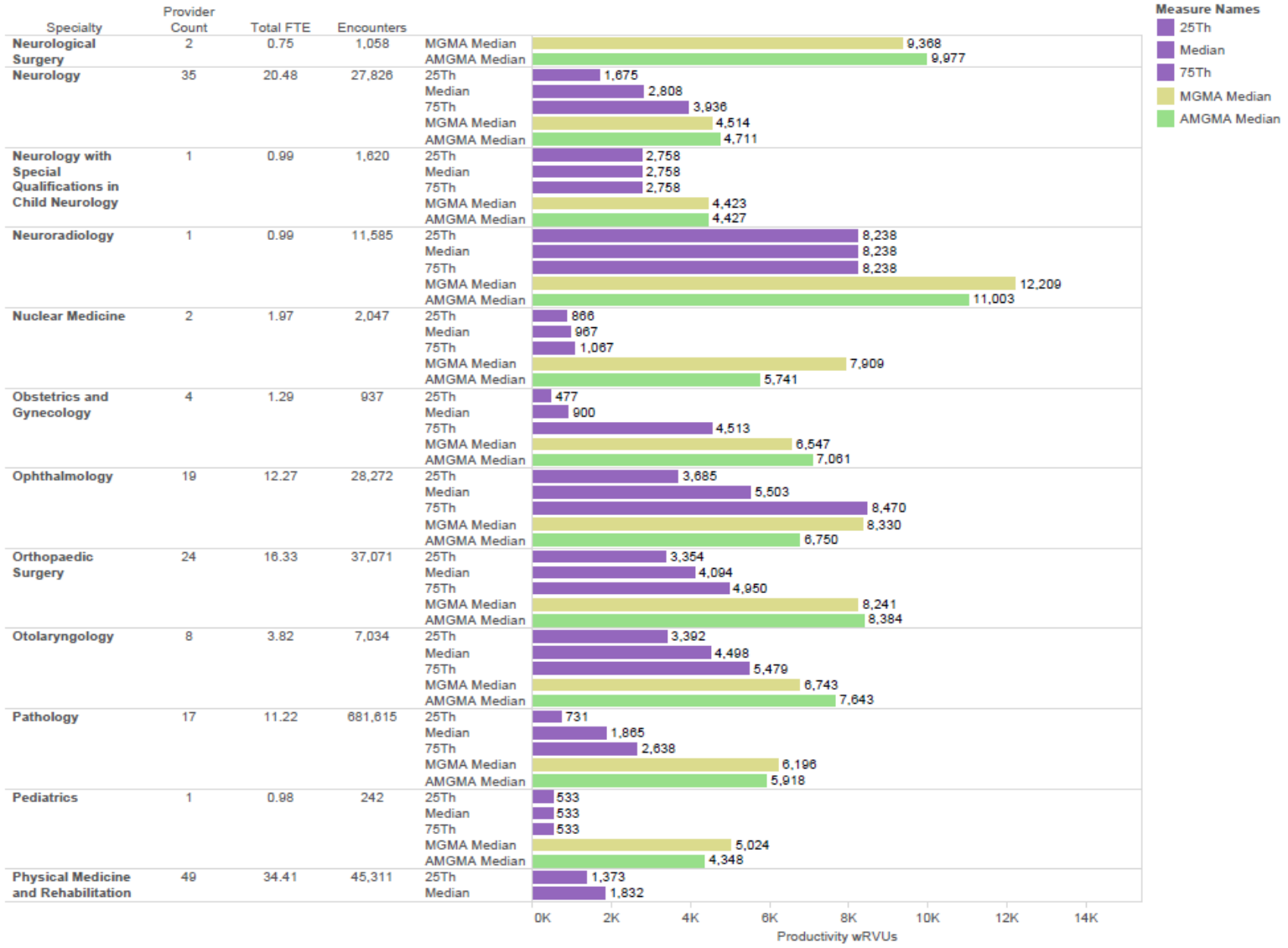
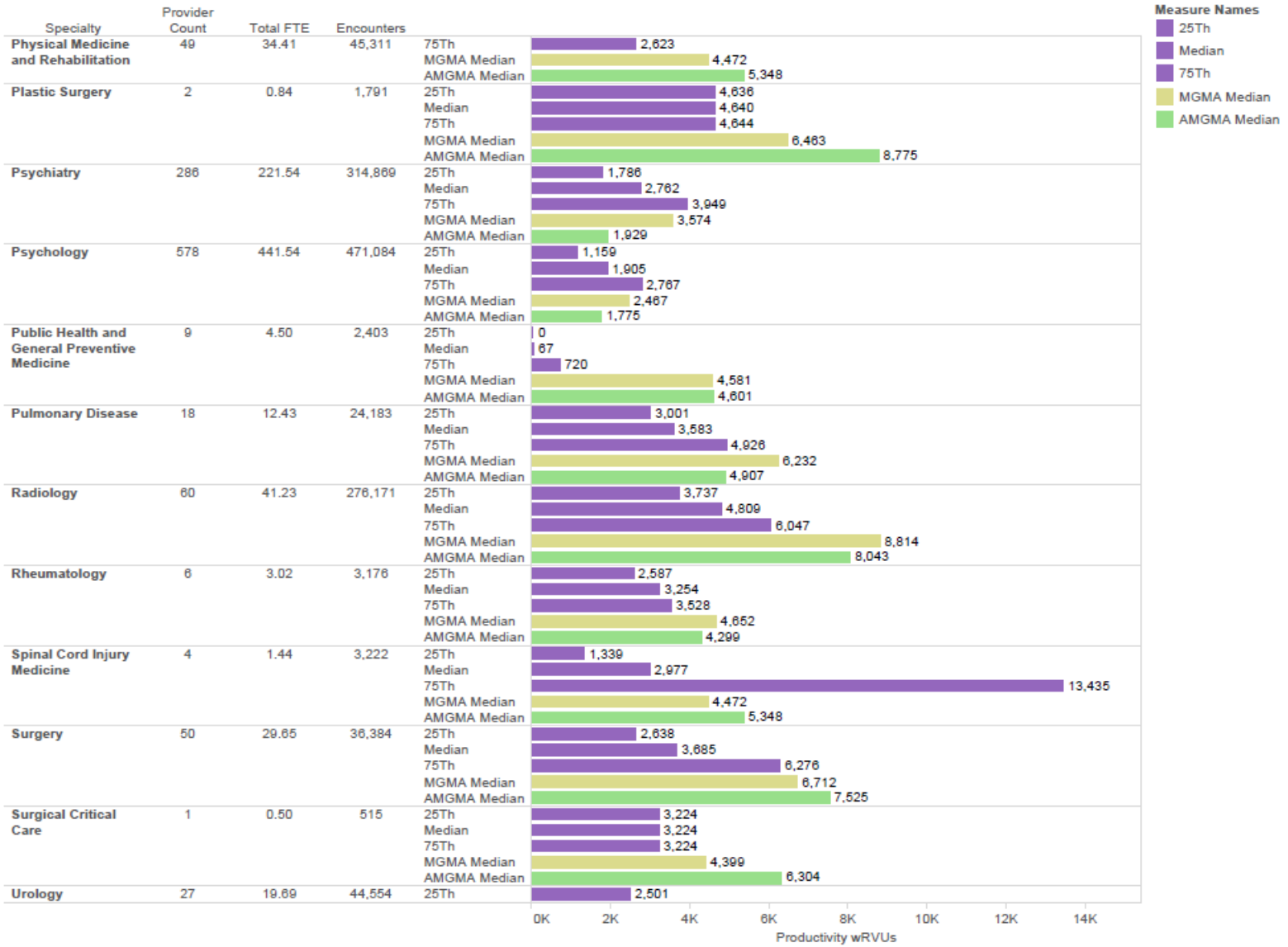

Specialty
Provider Count
Total FTE
Encounters
Surgery 298 169.96 147,081
Surgery of the Hand 19 7.72 16,687
Surgical Critical Care 24 13.83 6,437
Thoracic Surgery 89 57.11 23,521
Urology 200 110.39 228,166
Vascular Surgery 107 65.62 121,740
25Th
Median
75Th
MGMA Median
AMGMA Median
1,843
3,448
4,963
6,712
7,525
2,450
3,862
7,245
8,098
8,974
0
0
3,226
4,399
6,304
2,319
3,689
5,824
7,121
8,156
3,167
4,826
7,625
7,518
8,531
2,855
4,717
7,324
8,838
9,980
0K
2K
4K
6K
8K
10K
12K
14K
Productivity wRVUs
Measure Names
25Th
Median
75Th
MGMA Median
AMGMA Median

Figure A-2.Internal and external productivity benchmarks by wRVUs, complexity level 3 facilities






Specialty
Provider Count
Total FTE
Encounters
Neurological Surgery 2 0.75 1,058 MGMA Median 9,368; AMGMA Median 9,977
Neurology 35 20.48 27,826 25Th 1,675; Median 2,808; 75Th 3,936; MGMA Median 4,514; AMGMA Median 4,711
Neurology with Special Qualifications in Child Neurology 1 0.99 1,620 25Th 2,758; Median 2,758; 75Th 2,758; MGMA Median 4,423; AMGMA Median 4,427
Neuroradiology 1 0.99 11,585 25Th 8,238; Median 8,238; 75Th 8,238; MGMA Median 12,209; AMGMA Median 11,003
Nuclear Medicine 2 1.97 2,047 25Th 866; Median 967; 75Th 1,067; MGMA Median 7,909; AMGMA Median 5,741
Obstetrics and Gynecology 4 1.29 937 25Th 477; Median 900; 75Th 4,513; MGMA Median 6,547; AMGMA Median 7,061
Ophthalmology 19 12.27 28,272 25Th 3,685; Median 5,503; 75Th 8,470; MGMA Median 8,330; AMGMA Median 6,750
Orthopaedic Surgery 24 16.33 37,071 25Th 3,354; Median 4,094; 75Th 4,950; MGMA Median 8,241; AMGMA Median 8,384
Otolaryngology 8 3.82 7,034 25Th 3,392; Median 4,498; 75Th 5,479; MGMA Median 6,743; AMGMA Median 7,643
Pathology 17 11.22 681,615 25Th 731; Median 1,865; 75Th 2,638; MGMA Median 6,196; AMGMA Median 5,918
Pediatrics 1 0.98 242 25Th 533; Median 533; 75Th 533; MGMA Median 5,024; AMGMA Median 4,348
Physical Medicine and Rehabilitation 49 34.41 45,311 25Th 1,373; Median 1,832
0K 2K 4K 6K 8K 10K 12K 14K
Productivity wRVUs
Measure Names
25Th
Median
75Th
MGMA Median
AMGMA Median


Specialty
Provider Count
Total FTE
Encounters
Physical Medicine and Rehabilitation 49 34.41 45,311
75Th 2,623
MGMA Median 4,472
AMGMA Median 5,348
Plastic Surgery 2 0.84 1,791
25Th 4,636
Median 4,640
75Th 4,644
MGMA Median 6,463
AMGMA Median 8,775
Psychiatry 286 221.54 314,869
25Th 1,786
Median 2,762
75Th 3,949
MGMA Median 3,574
AMGMA Median 1,929
Psychology 578 441.54 471,084
25Th 1,159
Median 1,905
75Th 2,767
MGMA Median 2,467
AMGMA Median 1,775
Public Health and General Preventive Medicine 9 4.50 2,403
25Th 0
Median 67
75Th 720
MGMA Median 4,581
AMGMA Median 4,601
Pulmonary Disease 18 12.43 24,183
25Th 3,001
Median 3,583
75Th 4,926
MGMA Median 6,232
AMGMA Median 4,907
Radiology 60 41.23 276,171
25Th 3,737
Median 4,809
75Th 6,047
MGMA Median 8,814
AMGMA Median 8,043
Rheumatology 6 3.02 3,176
25Th 2,587
Median 3,254
75Th 3,528
MGMA Median 4,652
AMGMA Median 4,299
Spinal Cord Injury Medicine 4 1.44 3,222
25Th 1,339
Median 2,977
75Th 13,435
MGMA Median 4,472
AMGMA Median 5,348
Surgery 50 29.65 36,384
25Th 2,638
Median 3,685
75Th 6,276
MGMA Median 6,712
AMGMA Median 7,525
Surgical Critical Care 1 0.50 515
25Th 3,224
Median 3,224
75Th 3,224
MGMA Median 4,399
AMGMA Median 6,304
Urology 27 19.69 44,554
25Th 2,501
0K 2K 4K 6K 8K 10K 12K 14K
Productivity wRVUs
Measure Names
25Th
Median
75Th
MGMA Median
AMGMA Median

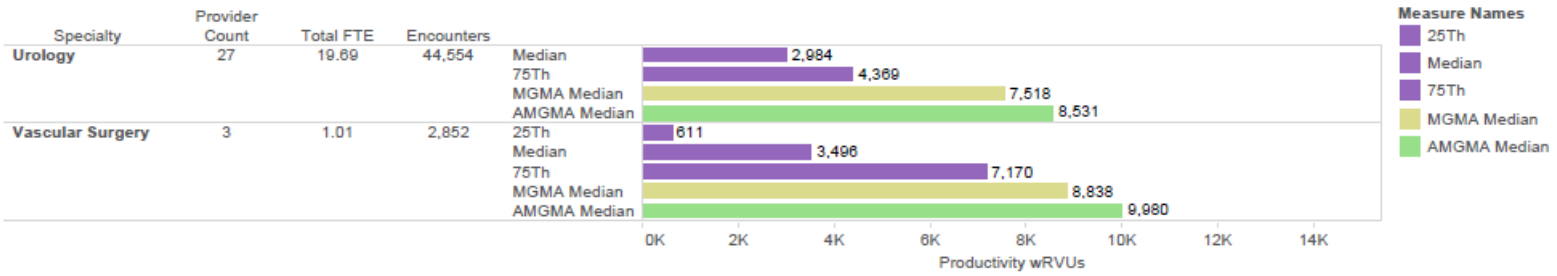


Figure A-2 provides additional detail in support of Section 2.3.6, Specialty Care. The graphs illustrate wRVU productivity internal and external benchmarks for all providers, by specialty, at complexity level 3 facilities. It also includes, for each specialty: total headcount of providers, total paid FTE (includes non-working compensated time), and total encounters generated during FY 2014. It depicts the internal percentiles of wRVU productivity, alongside the median performance in MGMA and AMGMA survey benchmark data sets. These graphs highlight instances in which a particular specialty may have lower median productivity than benchmark data sets, yet have much higher productivity at the 75th percentile relative to the benchmark medians.

A.2 Productivity (wRVU and encounters) by facility

The productivity graphs below depict the total productivity generated at each facility sorted by facility complexity level (this includes physicians and APPs, as well as all specialties, and primary care). Productivity was calculated both using encounter and wRVU totals. Productivity by Encounters is calculated using the total encounters per facility divided by the total adjusted clinical FTE. Similarly, the Productivity by wRVU is calculated using the total adjusted worked RVUs divided by the adjusted clinical FTE. The productivity levels increase according to the complexity level of the facility however productivity does not rise as dramatically as overall FTE levels per facility.

Figure A-3. Productivity by wRVU for level 1a facilities

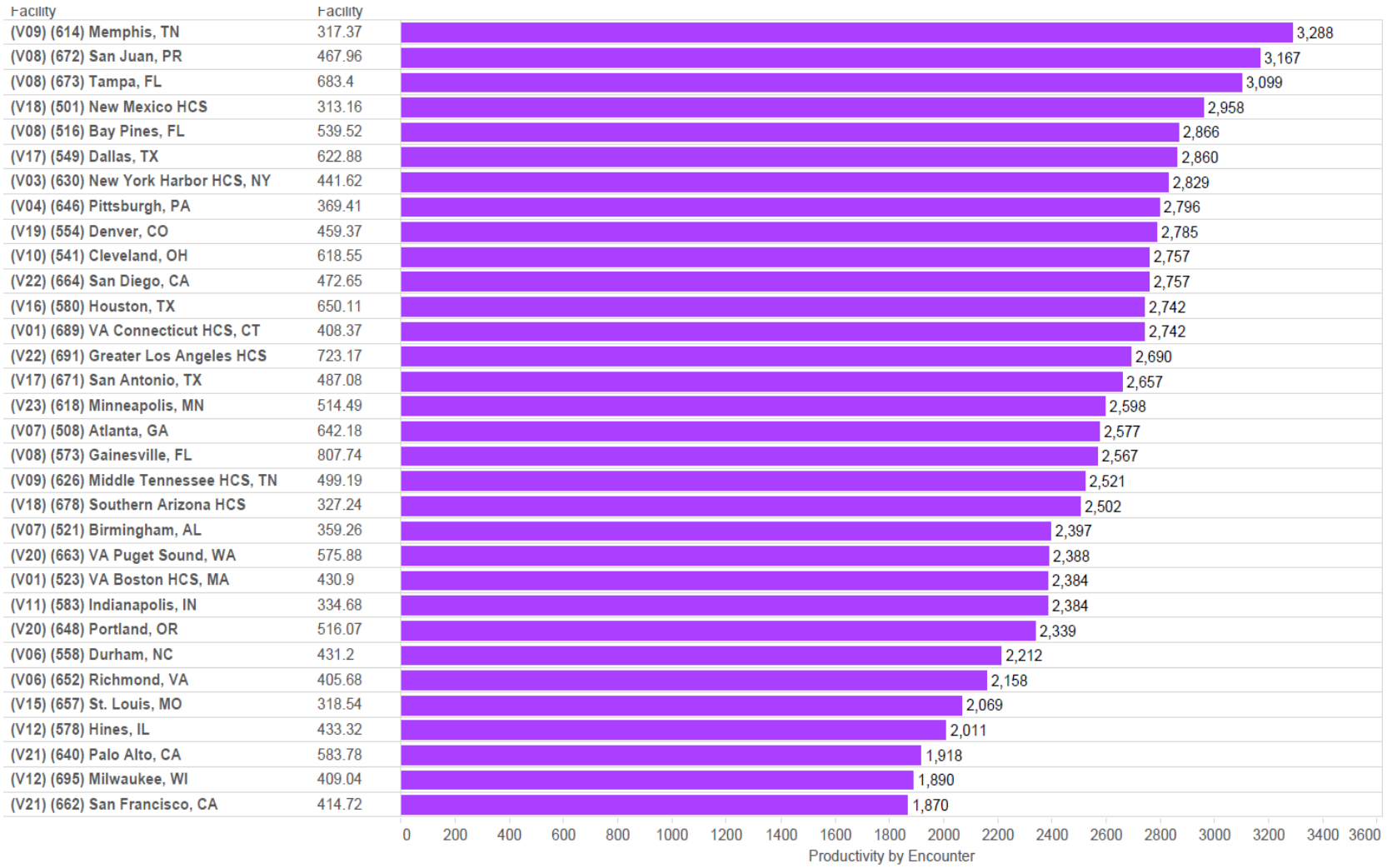
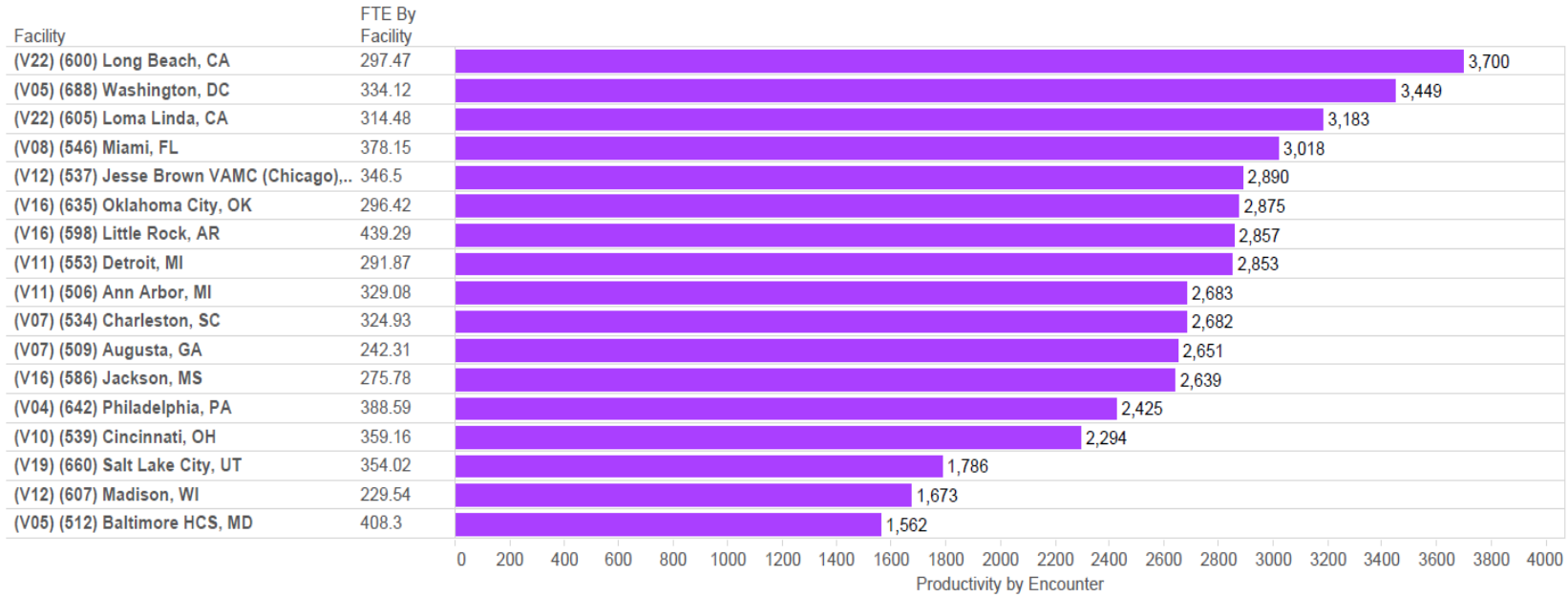


Figure A-4. Productivity by wRVU for level 1b facilities



Figures A-3 through Figure A-12 present Assessment G team analysis which used Provider Detail FY14 provided by VHA OPES, February 26, 2015, and Provider Labor Detail FY14 provided by VHA OPES, April, 9, 2015, as well as the 2014 AMGMA and MGMA surveys for benchmarking.

Figure A-5. Productivity by wRVU for level 1c facilities

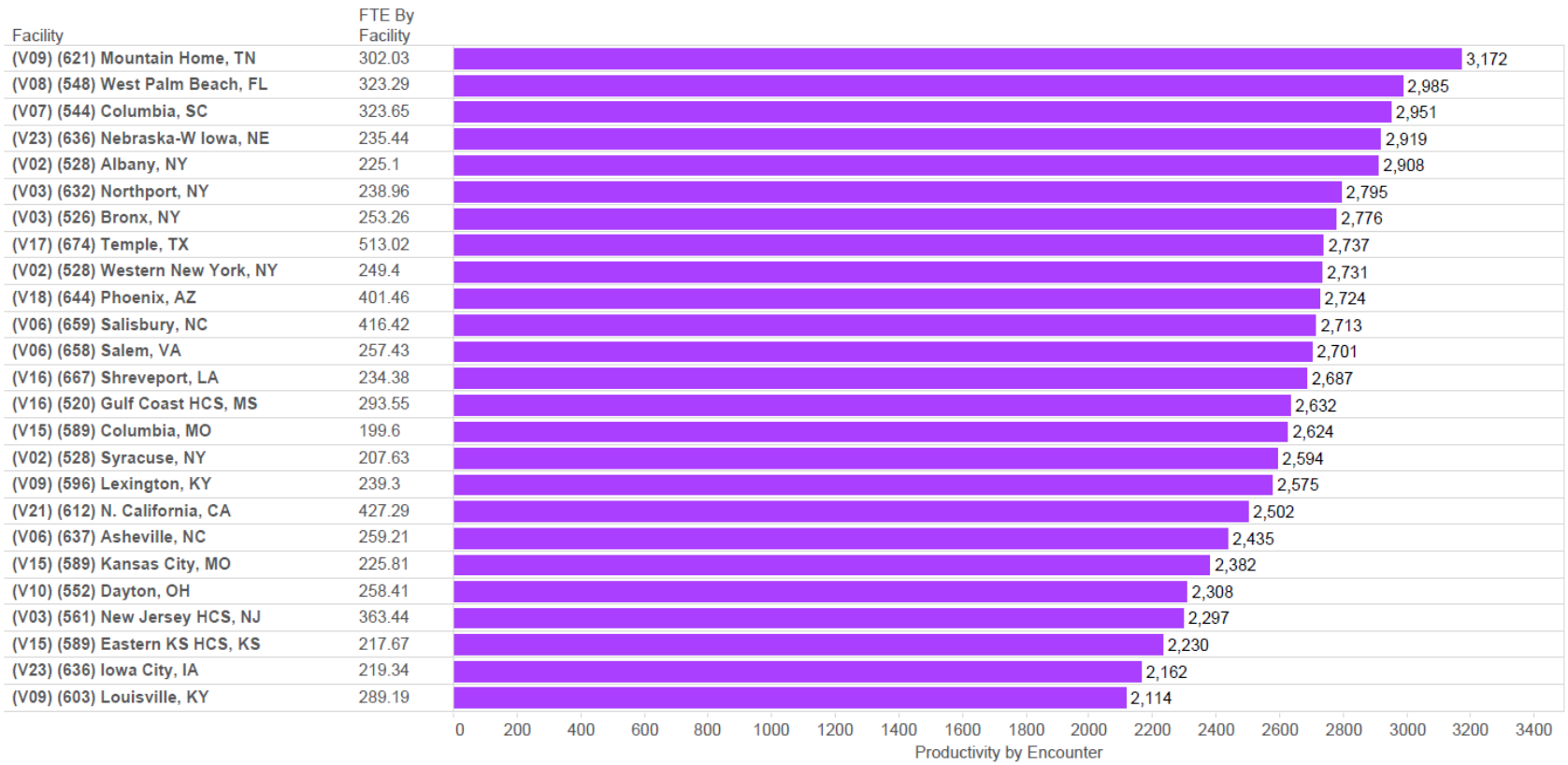


Figure A-6. Productivity by wRVU for level 2 facilities

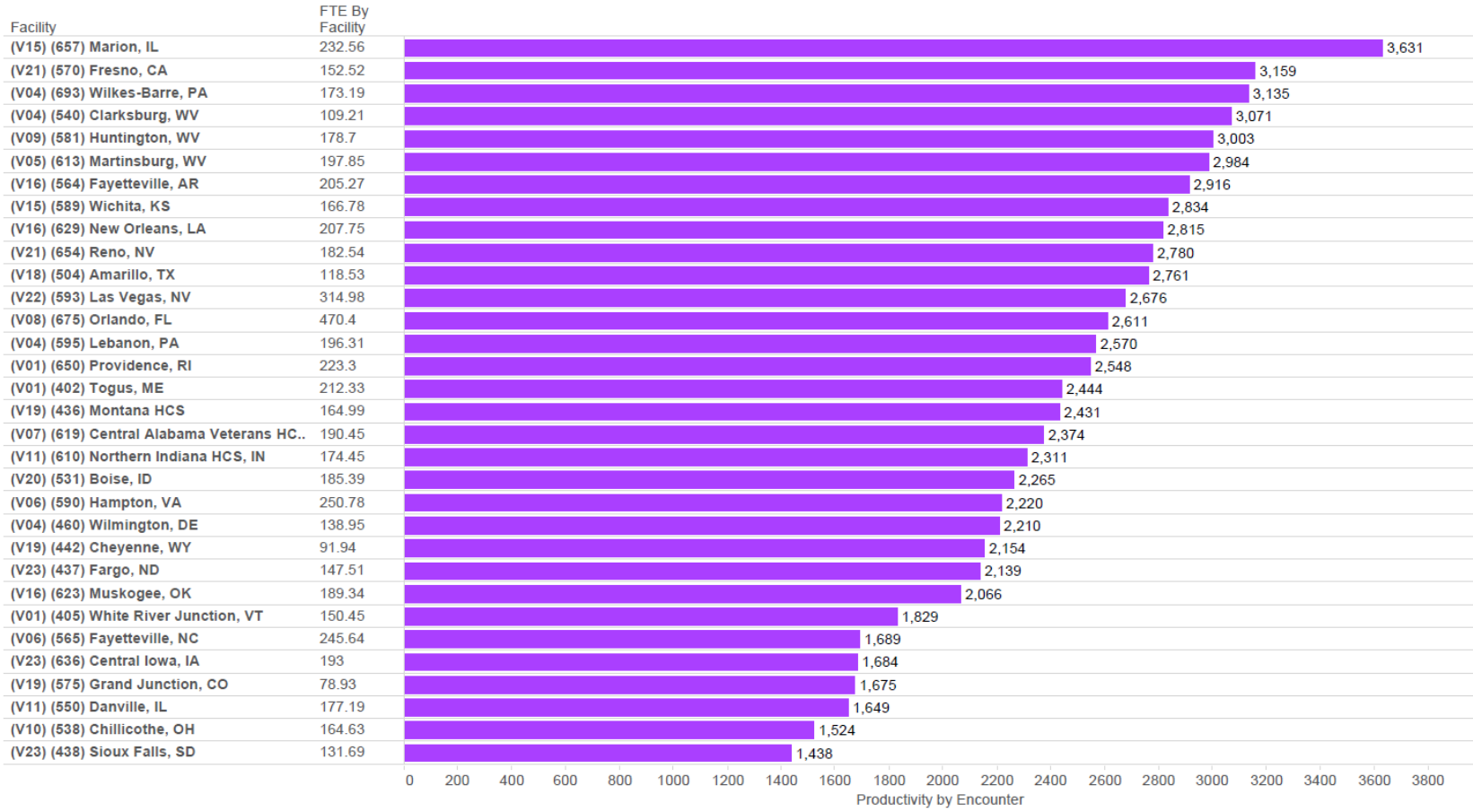


Figure A-7. Productivity by wRVU for level 3 facilities

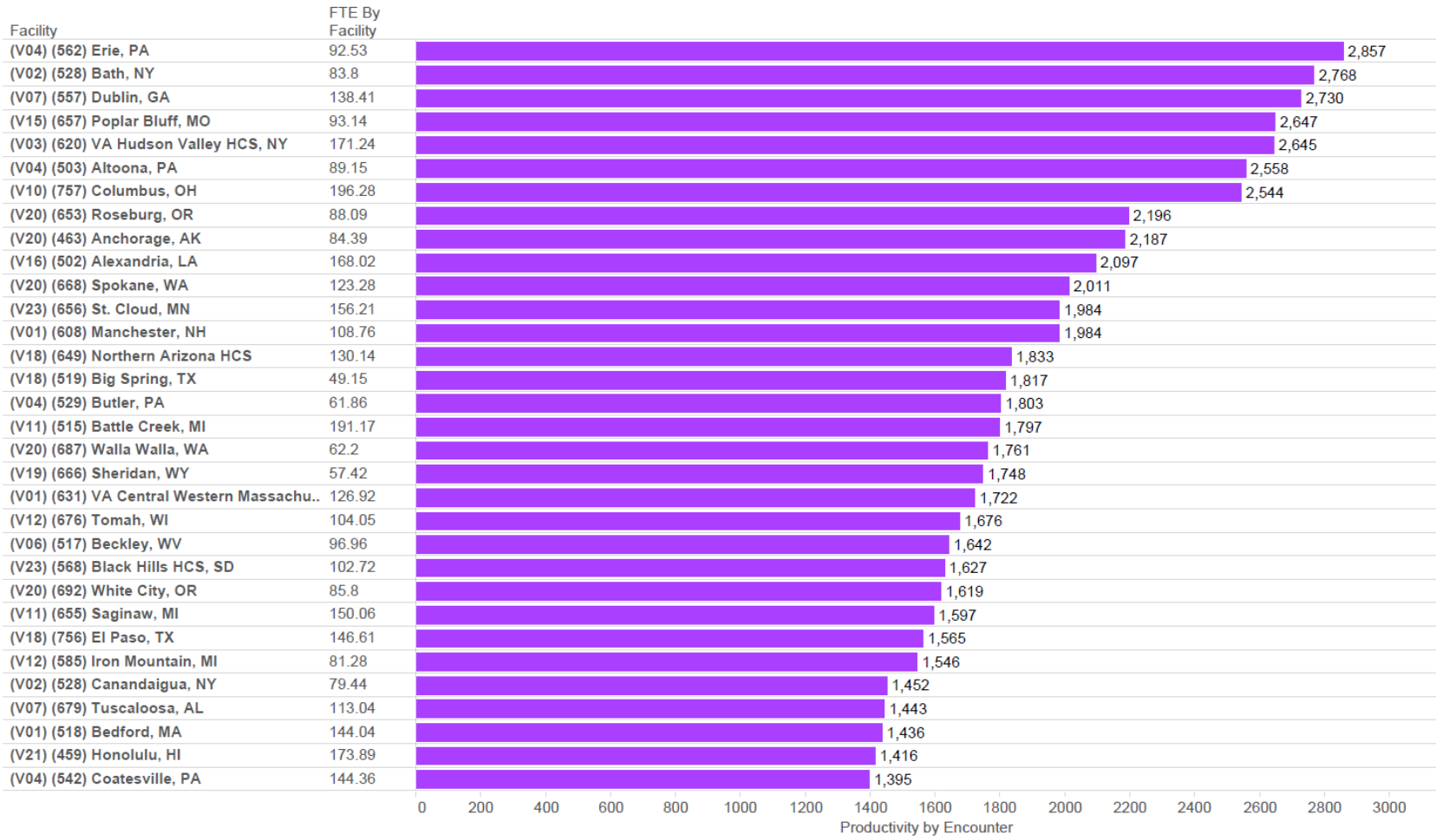


Figure A-8. Productivity by encounter for level 1a facilities

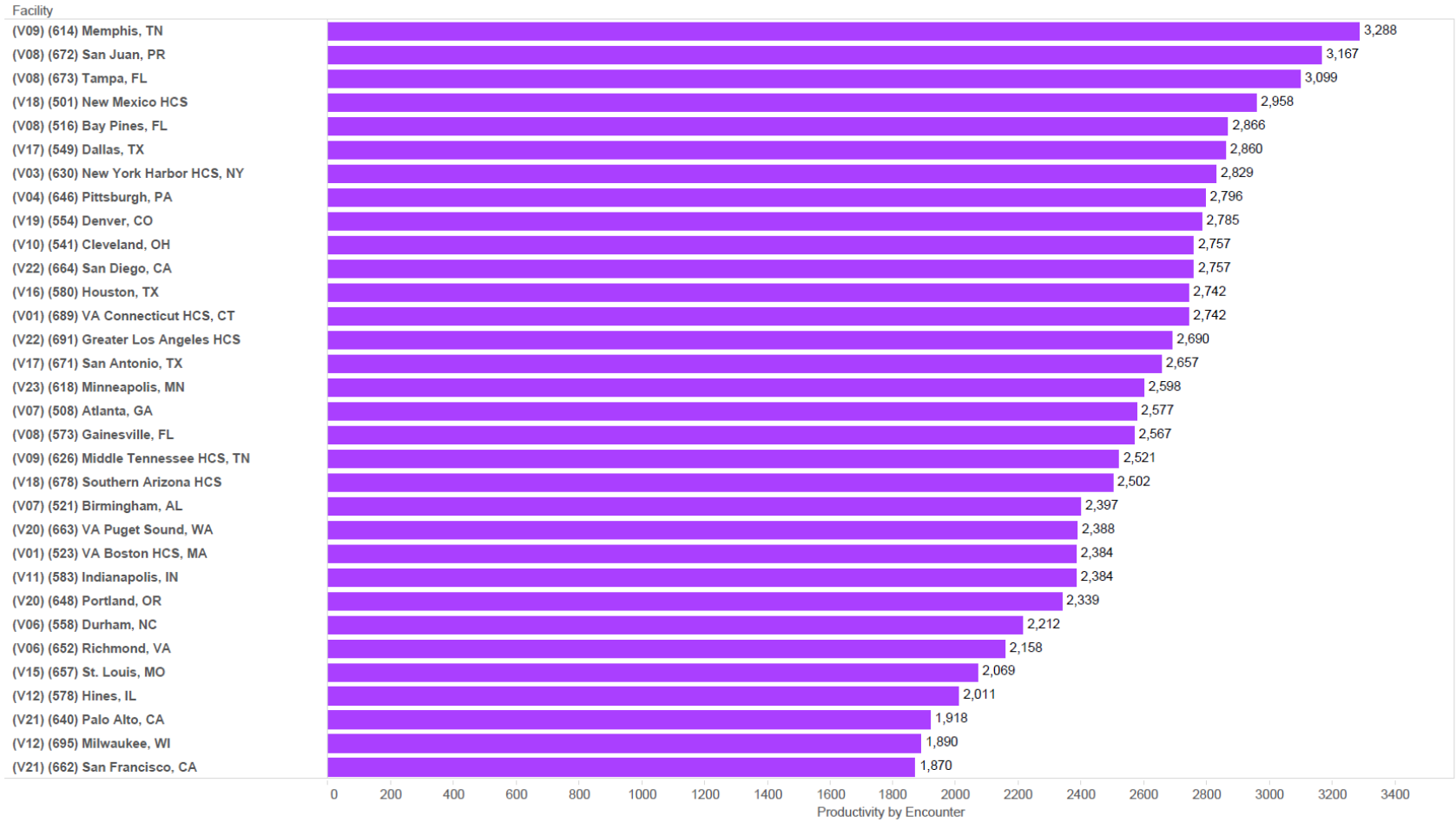


Figure A-9. Productivity by encounter for level 1b facilities

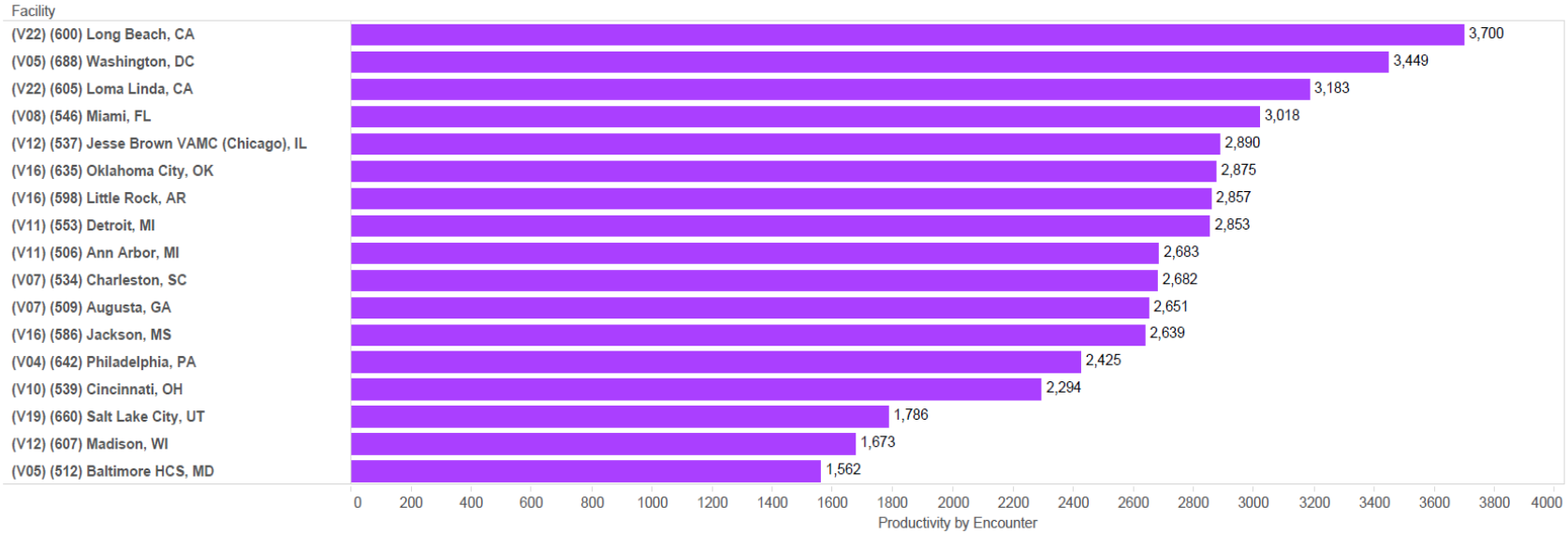


Figure A-10. Productivity by encounter for level 1c facilities

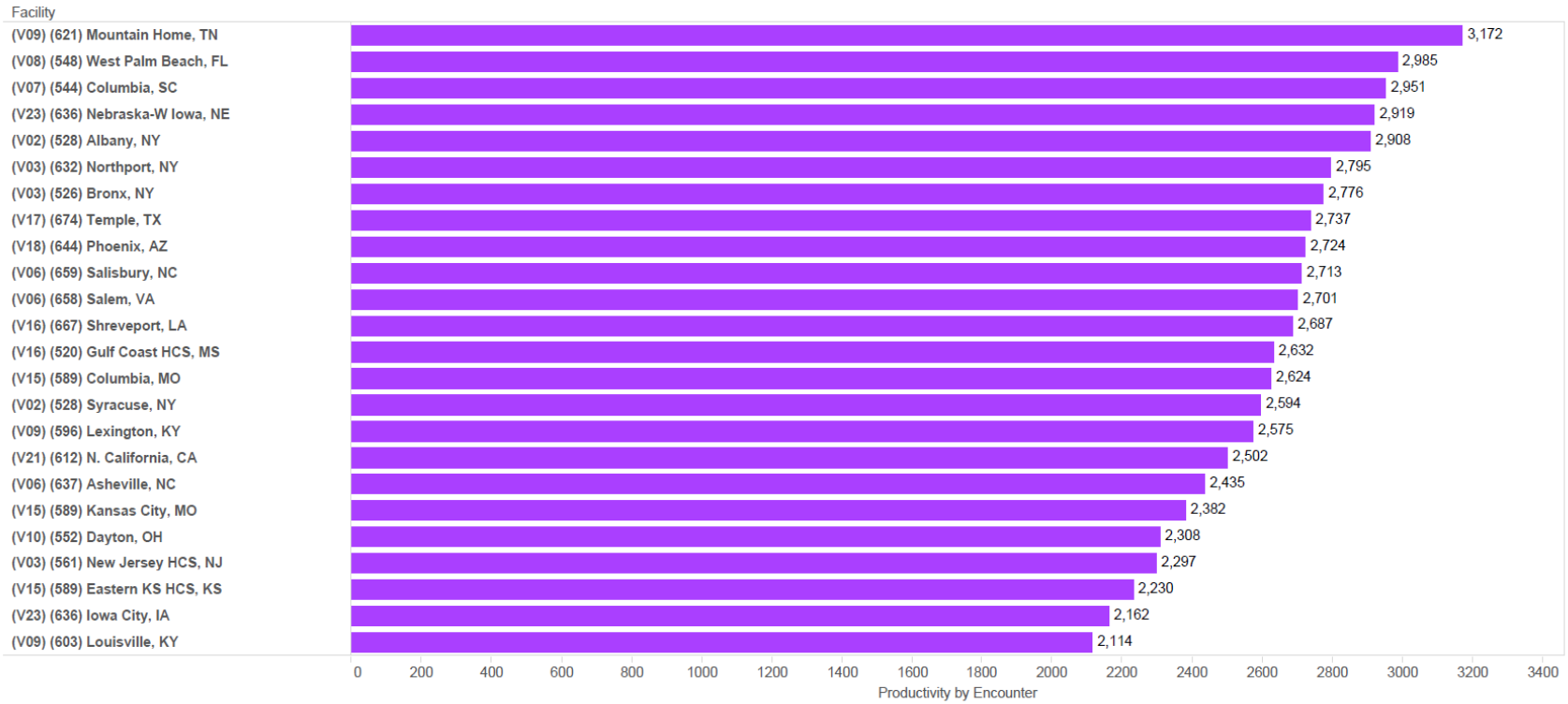


Figure A-11. Productivity by encounter for level 2 facilities

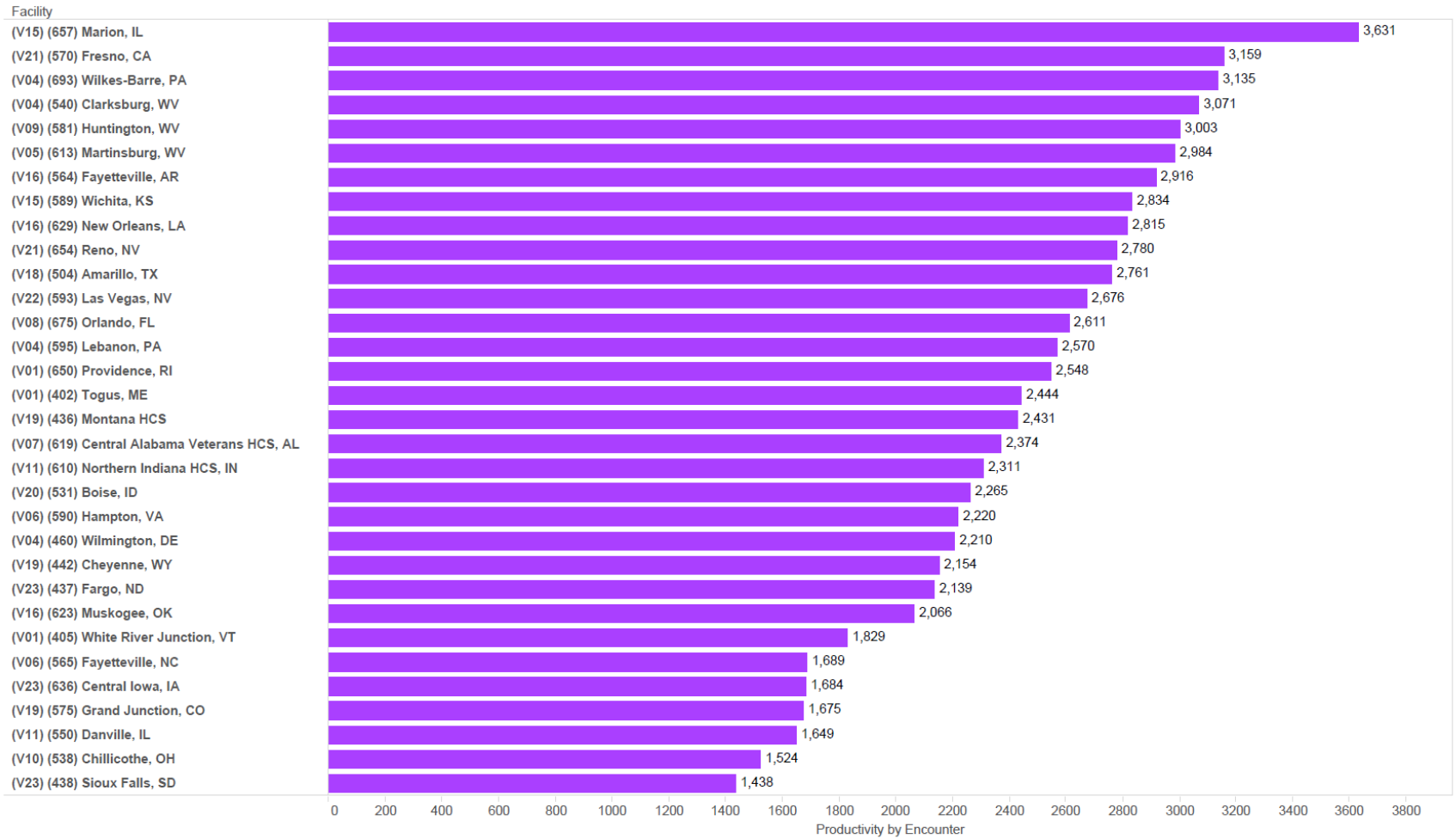
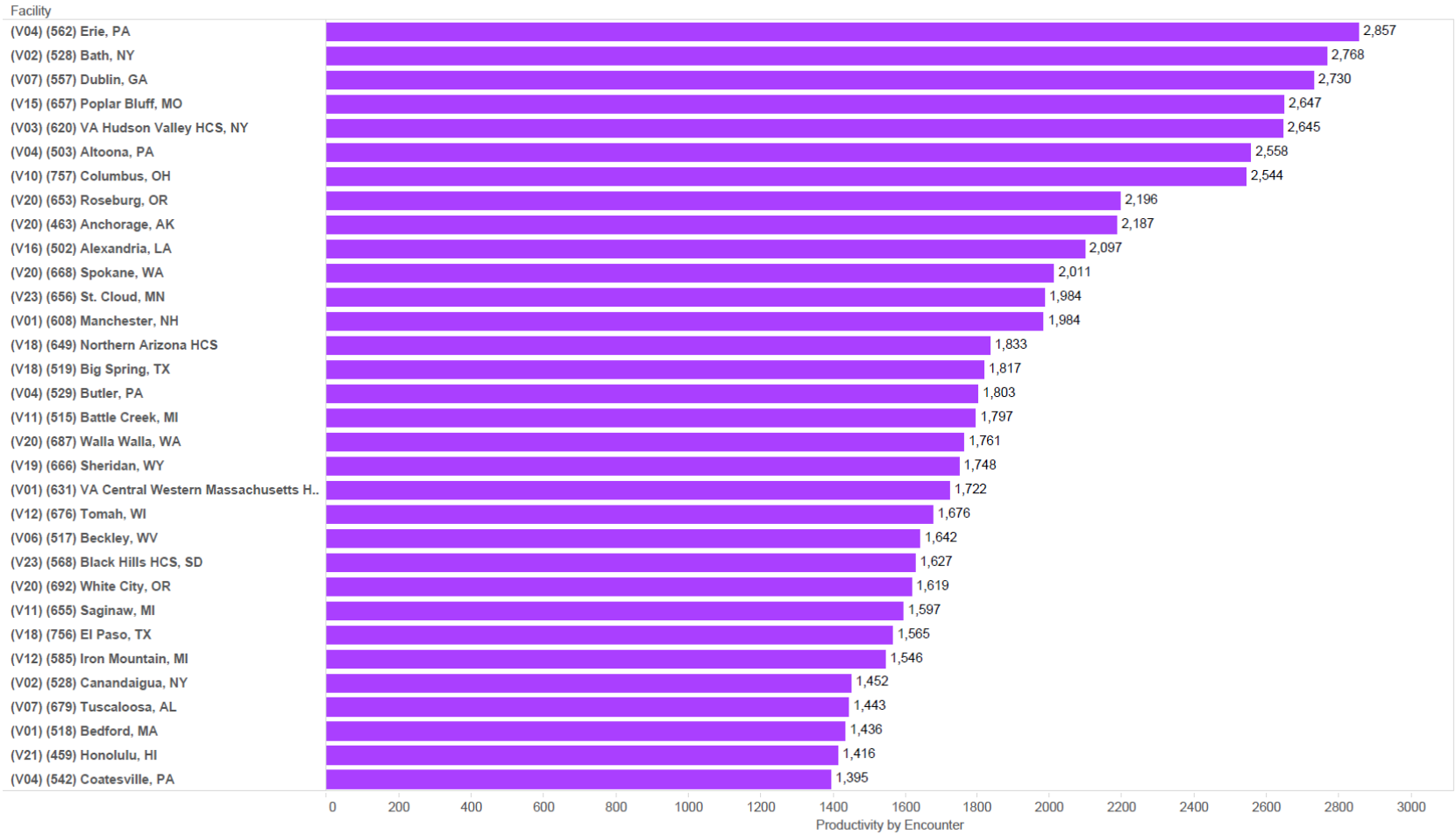


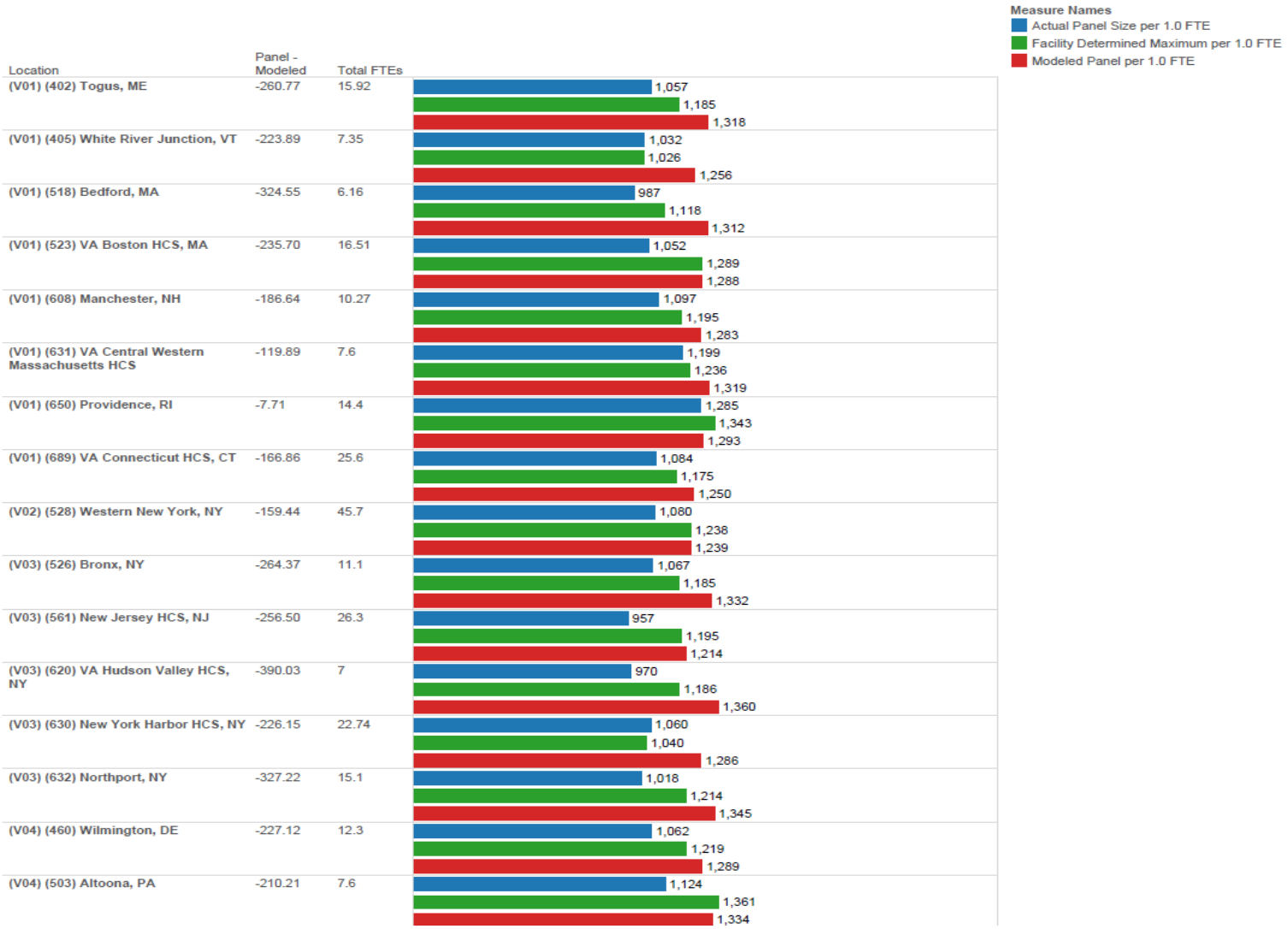
Figure A-12. Productivity by encounter for level 3 facilities



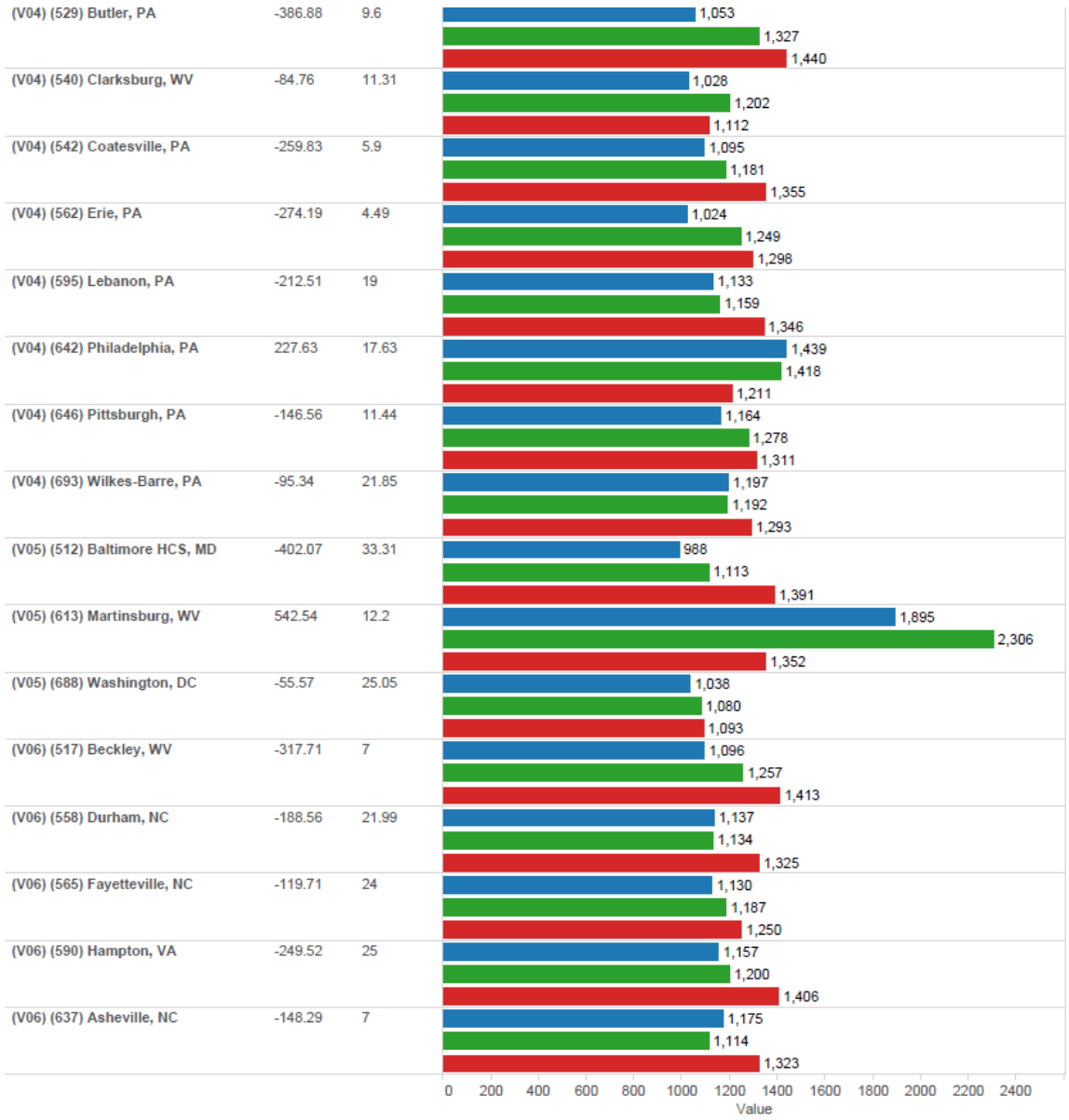
A.3 Primary care panel size by facility

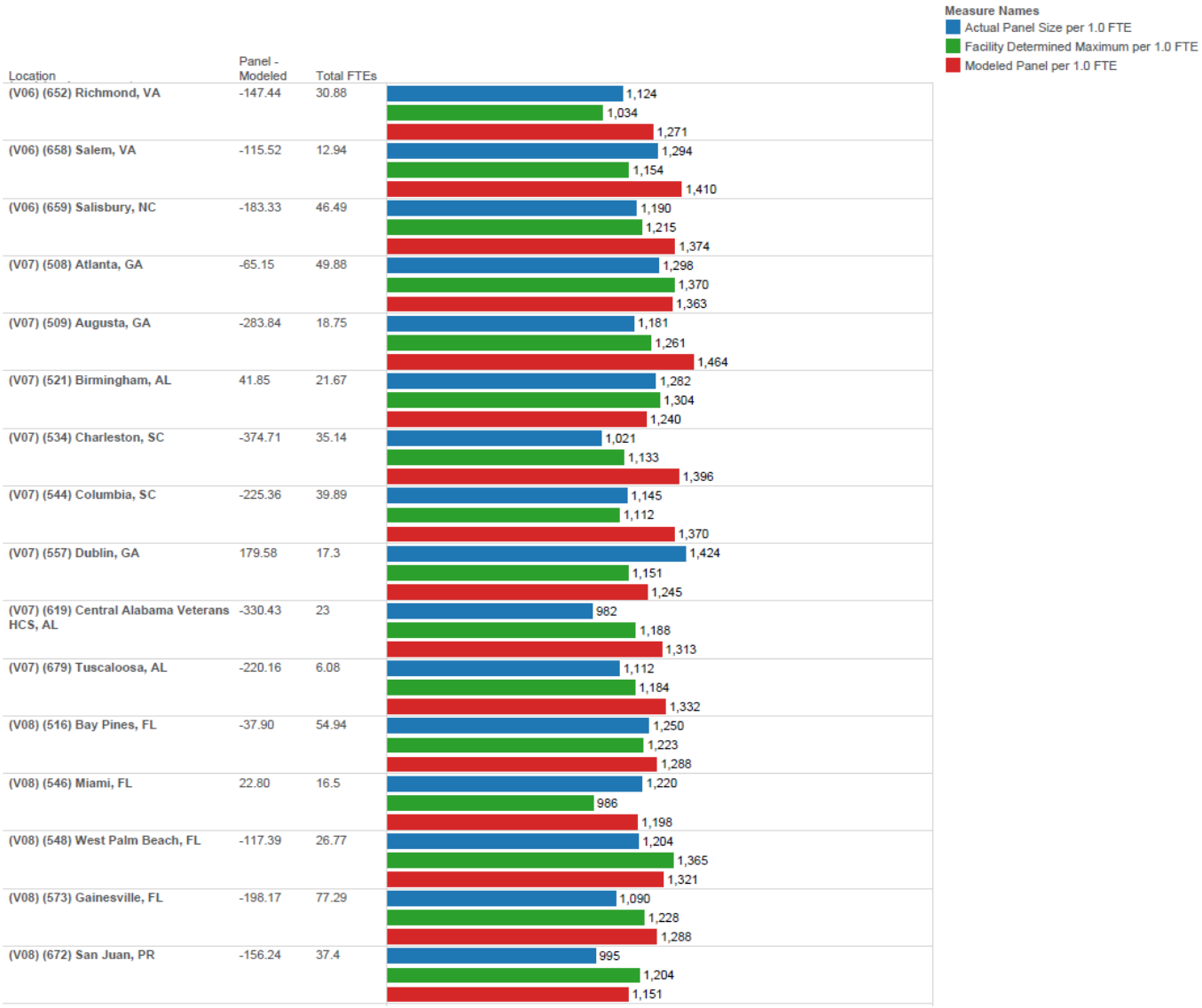
The following figures show the panel size comparison by facility, grouped in VISN. Figures present the actual panel size, the facility determined maximum panel size, and the modeled panel size (recommended by VHA's PCMM tool) per 1.0 FTE, as of September 30, 2014.

Figure A-13. Facility average panel size and modeled panel size per FTE

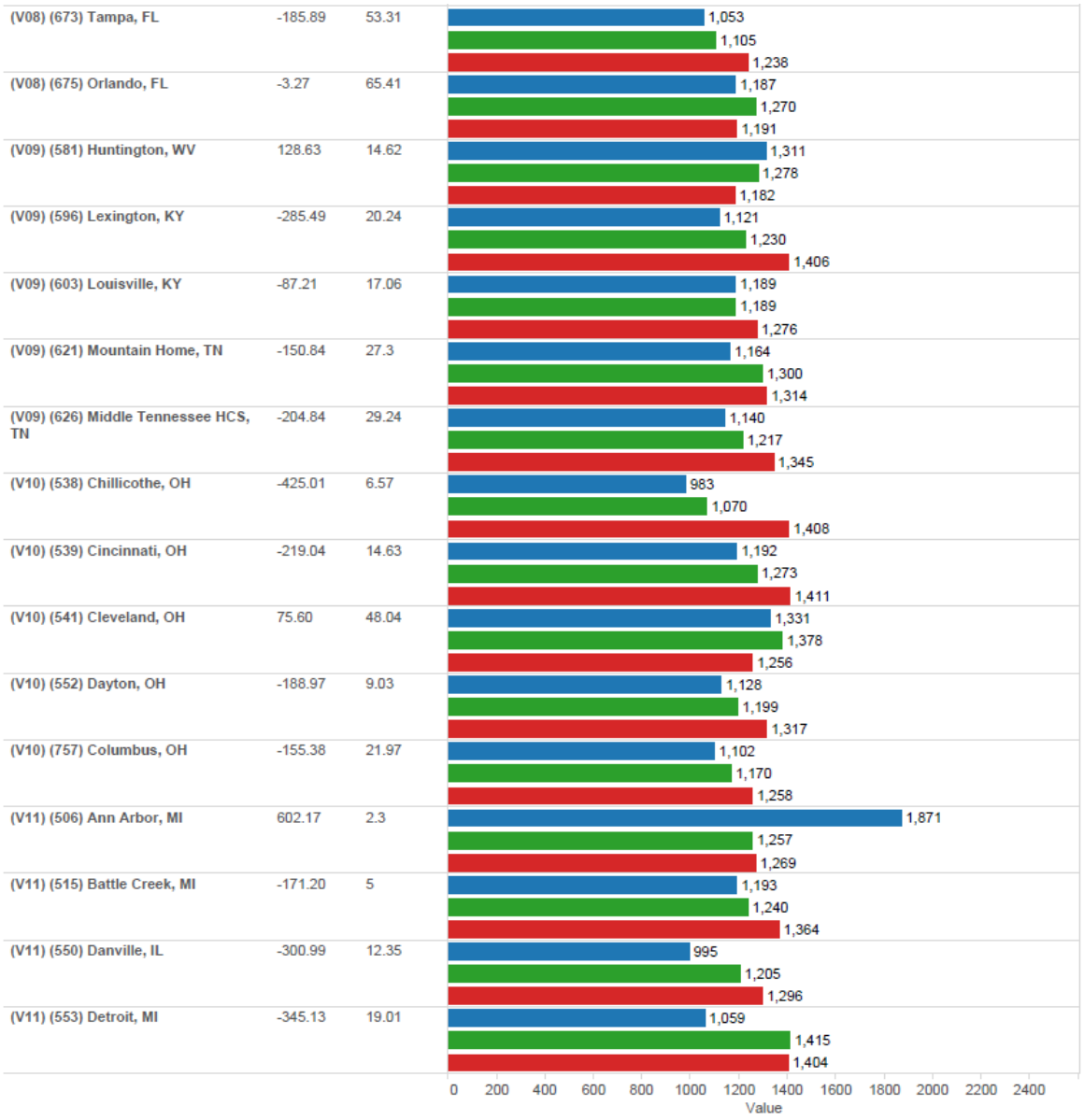


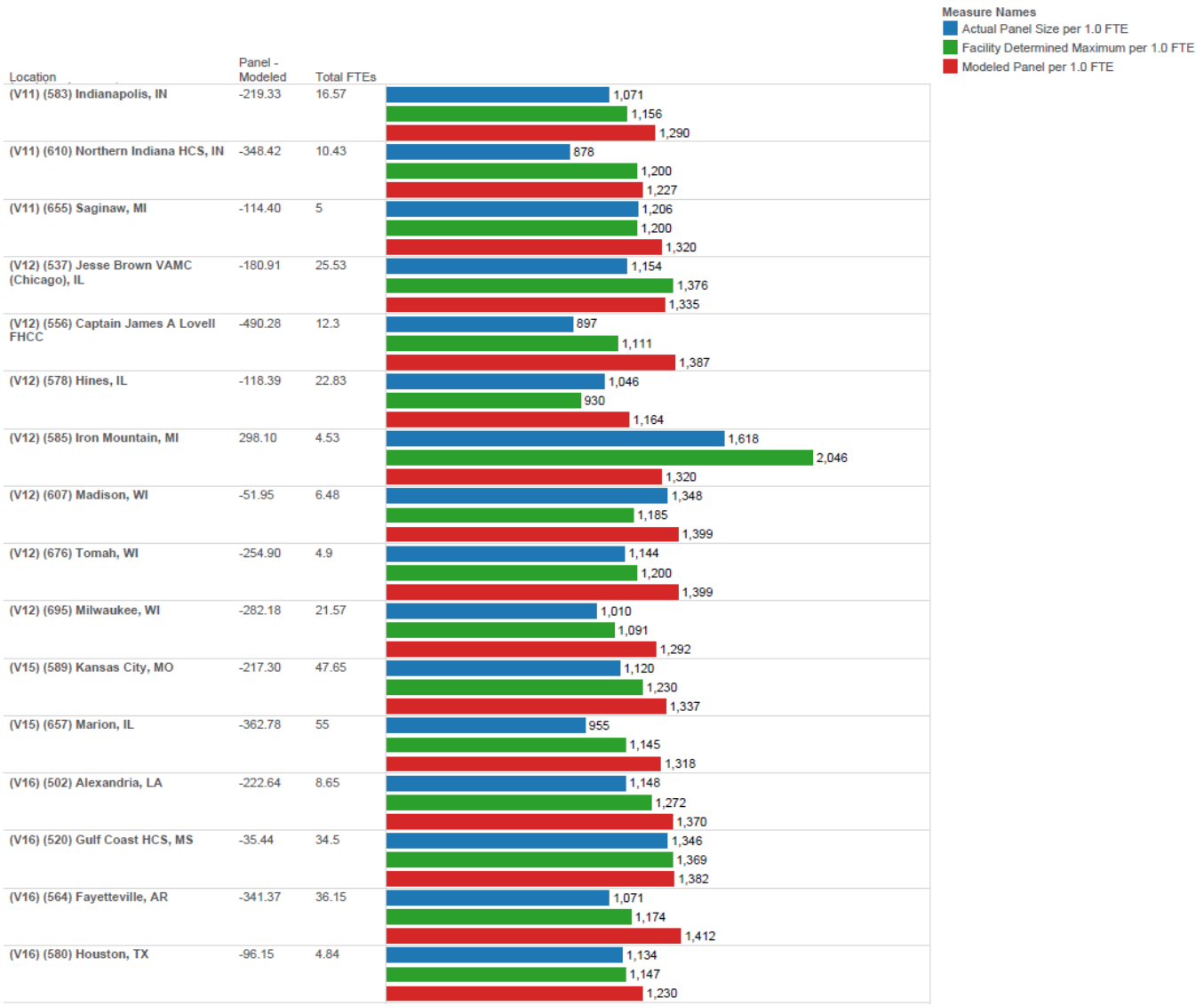
Location	Panel - Modeled	Total FTEs	Actual Panel Size per 1.0 FTE	Facility Determined Maximum per 1.0 FTE	Modeled Panel per 1.0 FTE
(V01) (402) Togus, ME	-260.77	15.92	1,057	1,185	1,318
(V01) (405) White River Junction, VT	-223.89	7.35	1,032	1,026	1,256
(V01) (518) Bedford, MA	-324.55	6.16	987	1,118	1,312
(V01) (523) VA Boston HCS, MA	-235.70	16.51	1,052	1,289	1,288
(V01) (608) Manchester, NH	-186.64	10.27	1,097	1,195	1,283
(V01) (631) VA Central Western Massachusetts HCS	-119.89	7.6	1,199	1,236	1,319
(V01) (650) Providence, RI	-7.71	14.4	1,285	1,343	1,293
(V01) (689) VA Connecticut HCS, CT	-166.86	25.6	1,084	1,175	1,250
(V02) (528) Western New York, NY	-159.44	45.7	1,080	1,238	1,239
(V03) (526) Bronx, NY	-264.37	11.1	1,067	1,185	1,332
(V03) (561) New Jersey HCS, NJ	-256.50	26.3	957	1,195	1,214
(V03) (620) VA Hudson Valley HCS, NY	-390.03	7	970	1,186	1,360
(V03) (630) New York Harbor HCS, NY	-226.15	22.74	1,060	1,040	1,286
(V03) (632) Northport, NY	-327.22	15.1	1,018	1,214	1,345
(V04) (460) Wilmington, DE	-227.12	12.3	1,062	1,219	1,289
(V04) (503) Altoona, PA	-210.21	7.6	1,124	1,361	1,334



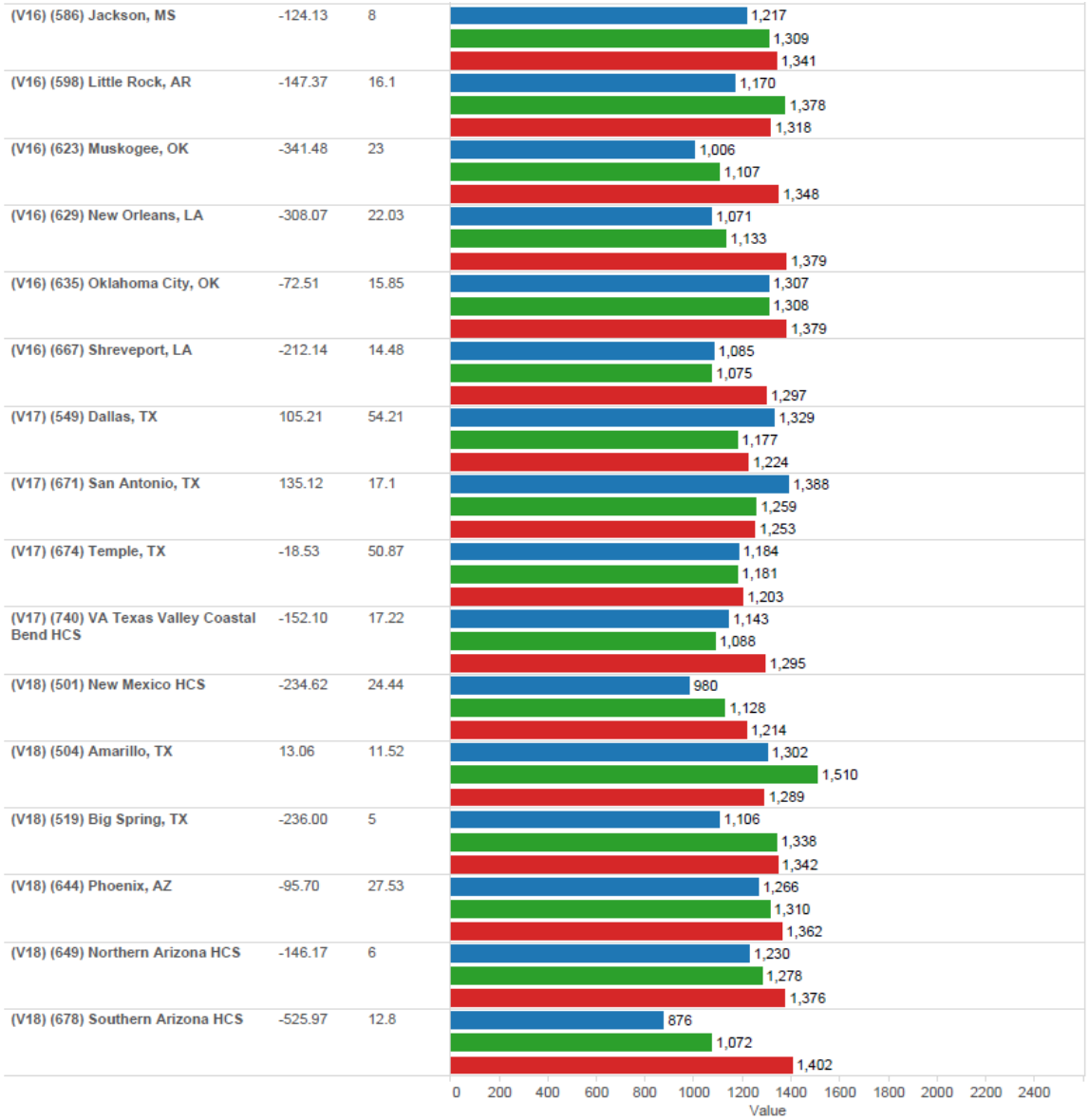


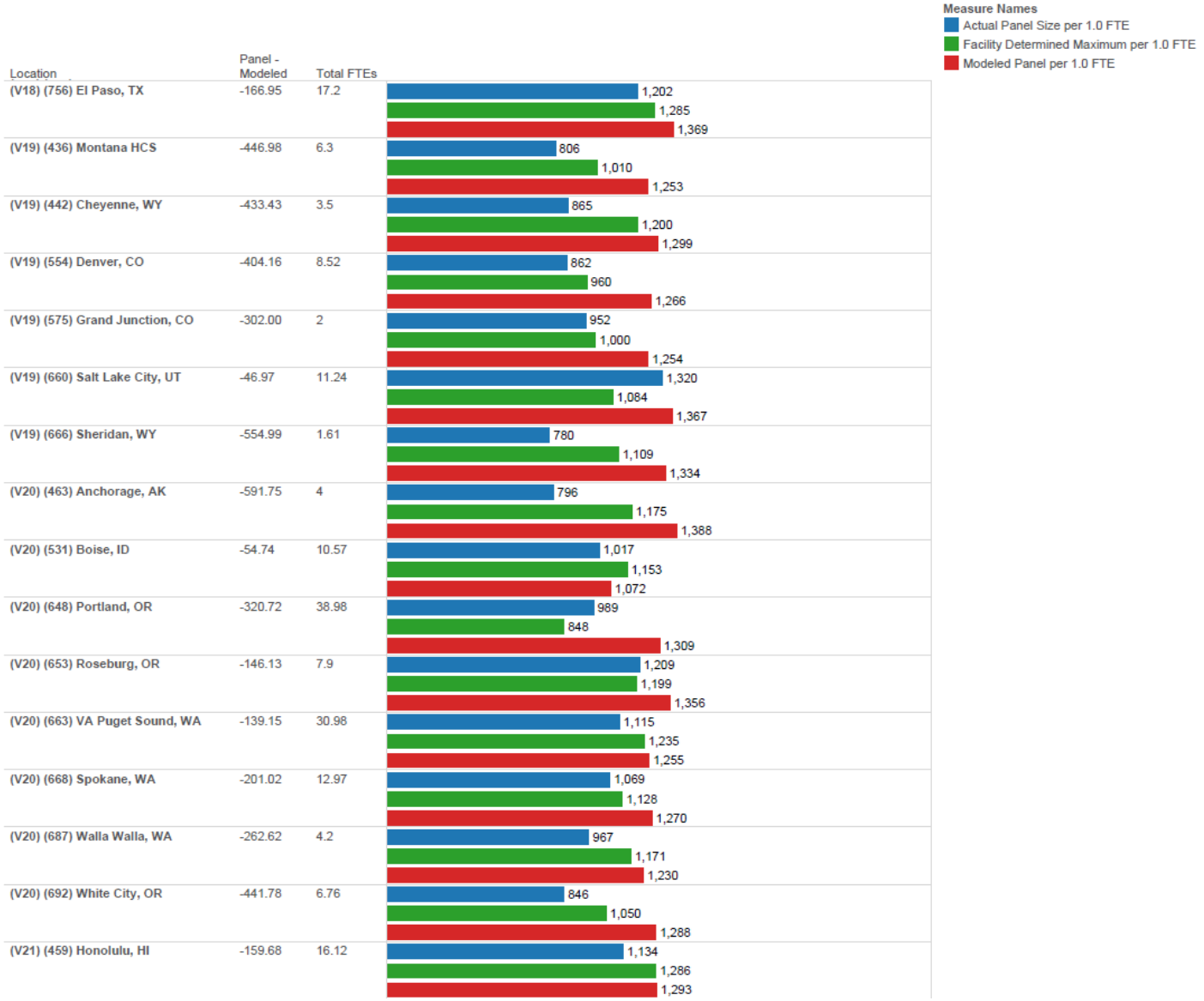
Location	Panel - Modeled	Total FTEs	Actual Panel Size per 1.0 FTE	Facility Determined Maximum per 1.0 FTE	Modeled Panel per 1.0 FTE
(V06) (652) Richmond, VA	-147.44	30.88	1,124	1,034	1,271
(V06) (658) Salem, VA	-115.52	12.94	1,294	1,154	1,410
(V06) (659) Salisbury, NC	-183.33	46.49	1,190	1,215	1,374
(V07) (508) Atlanta, GA	-65.15	49.88	1,298	1,370	1,363
(V07) (509) Augusta, GA	-283.84	18.75	1,181	1,261	1,464
(V07) (521) Birmingham, AL	41.85	21.67	1,282	1,304	1,240
(V07) (534) Charleston, SC	-374.71	35.14	1,021	1,133	1,396
(V07) (544) Columbia, SC	-225.36	39.89	1,145	1,112	1,370
(V07) (557) Dublin, GA	179.58	17.3	1,424	1,151	1,245
(V07) (619) Central Alabama Veterans HCS, AL	-330.43	23	982	1,188	1,313
(V07) (679) Tuscaloosa, AL	-220.16	6.08	1,112	1,184	1,332
(V08) (516) Bay Pines, FL	-37.90	54.94	1,250	1,223	1,288
(V08) (546) Miami, FL	22.80	16.5	1,220	986	1,198
(V08) (548) West Palm Beach, FL	-117.39	26.77	1,204	1,365	1,321
(V08) (573) Gainesville, FL	-198.17	77.29	1,090	1,228	1,288
(V08) (672) San Juan, PR	-156.24	37.4	995	1,204	1,151



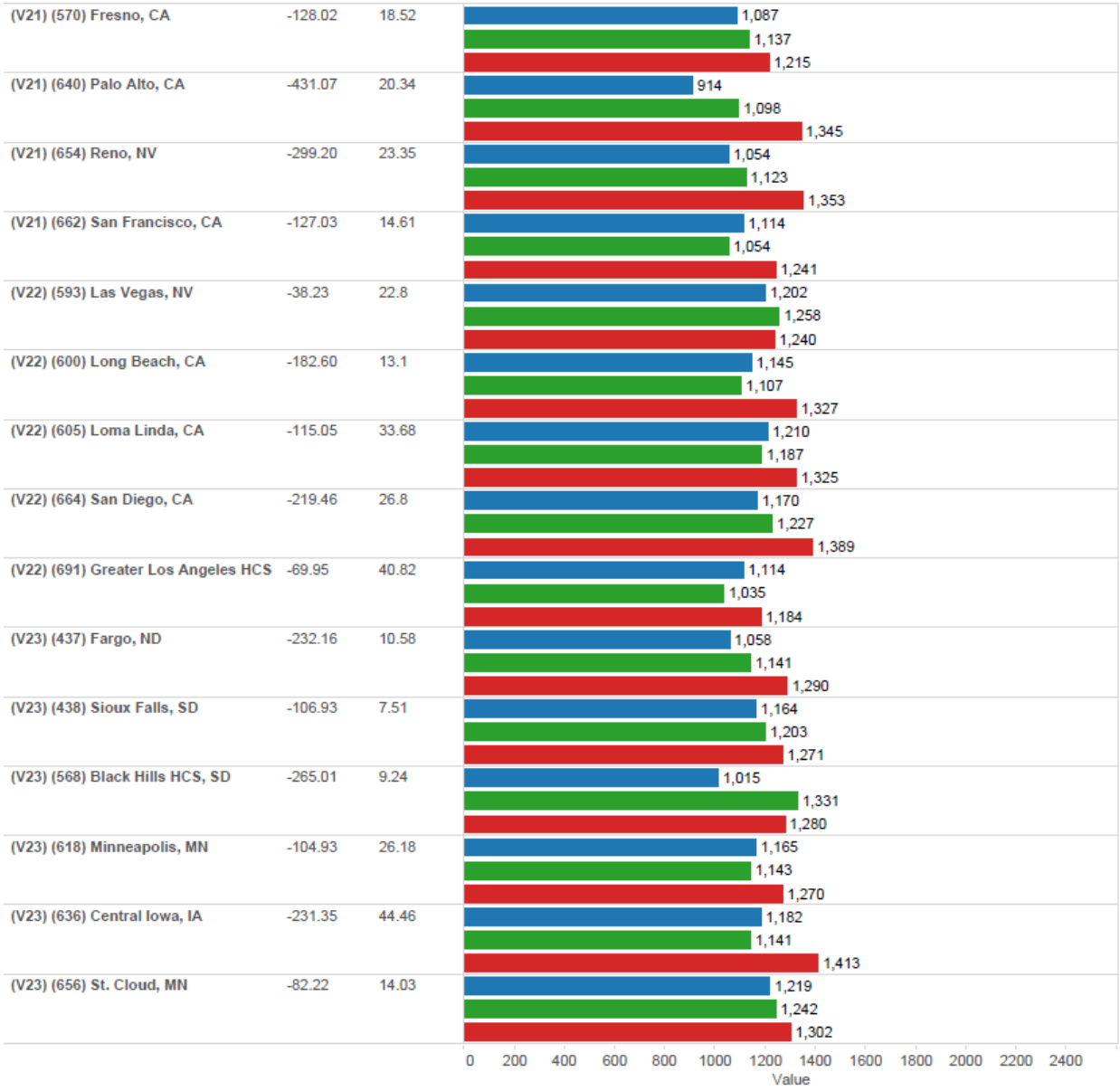


Location	Panel - Modeled	Total FTEs	Actual Panel Size per 1.0 FTE	Facility Determined Maximum per 1.0 FTE	Modeled Panel per 1.0 FTE
(V11) (583) Indianapolis, IN	-219.33	16.57	1,071	1,156	1,290
(V11) (610) Northern Indiana HCS, IN	-348.42	10.43	878	1,200	1,227
(V11) (655) Saginaw, MI	-114.40	5	1,206	1,200	1,320
(V12) (537) Jesse Brown VAMC (Chicago), IL	-180.91	25.53	1,154	1,376	1,335
(V12) (556) Captain James A Lovell FHCC	-490.28	12.3	897	1,111	1,387
(V12) (578) Hines, IL	-118.39	22.83	1,046	930	1,164
(V12) (585) Iron Mountain, MI	298.10	4.53	1,618	2,046	1,320
(V12) (607) Madison, WI	-51.95	6.48	1,348	1,185	1,399
(V12) (676) Tomah, WI	-254.90	4.9	1,144	1,200	1,399
(V12) (695) Milwaukee, WI	-282.18	21.57	1,010	1,091	1,292
(V15) (589) Kansas City, MO	-217.30	47.65	1,120	1,230	1,337
(V15) (657) Marion, IL	-362.78	55	955	1,145	1,318
(V16) (502) Alexandria, LA	-222.64	8.65	1,148	1,272	1,370
(V16) (520) Gulf Coast HCS, MS	-35.44	34.5	1,346	1,369	1,382
(V16) (564) Fayetteville, AR	-341.37	36.15	1,071	1,174	1,412
(V16) (580) Houston, TX	-96.15	4.84	1,134	1,147	1,230





Location	Panel - Modeled	Total FTEs			
(V18) (756) El Paso, TX	-166.95	17.2	1,202	1,285	1,369
(V19) (436) Montana HCS	-446.98	6.3	806	1,010	1,253
(V19) (442) Cheyenne, WY	-433.43	3.5	865	1,200	1,299
(V19) (554) Denver, CO	-404.16	8.52	862	960	1,266
(V19) (575) Grand Junction, CO	-302.00	2	952	1,000	1,254
(V19) (660) Salt Lake City, UT	-46.97	11.24	1,320	1,084	1,367
(V19) (666) Sheridan, WY	-554.99	1.61	780	1,109	1,334
(V20) (463) Anchorage, AK	-591.75	4	796	1,175	1,388
(V20) (531) Boise, ID	-54.74	10.57	1,017	1,153	1,072
(V20) (648) Portland, OR	-320.72	38.98	989	848	1,309
(V20) (653) Roseburg, OR	-146.13	7.9	1,209	1,199	1,356
(V20) (663) VA Puget Sound, WA	-139.15	30.98	1,115	1,235	1,255
(V20) (668) Spokane, WA	-201.02	12.97	1,069	1,128	1,270
(V20) (687) Walla Walla, WA	-262.62	4.2	967	1,171	1,230
(V20) (692) White City, OR	-441.78	6.76	846	1,050	1,288
(V21) (459) Honolulu, HI	-159.68	16.12	1,134	1,286	1,293



Appendix B Methodology

B.1 Overview

The Assessment G team used a combination of quantitative and qualitative methods to address the objectives and research questions of the report.

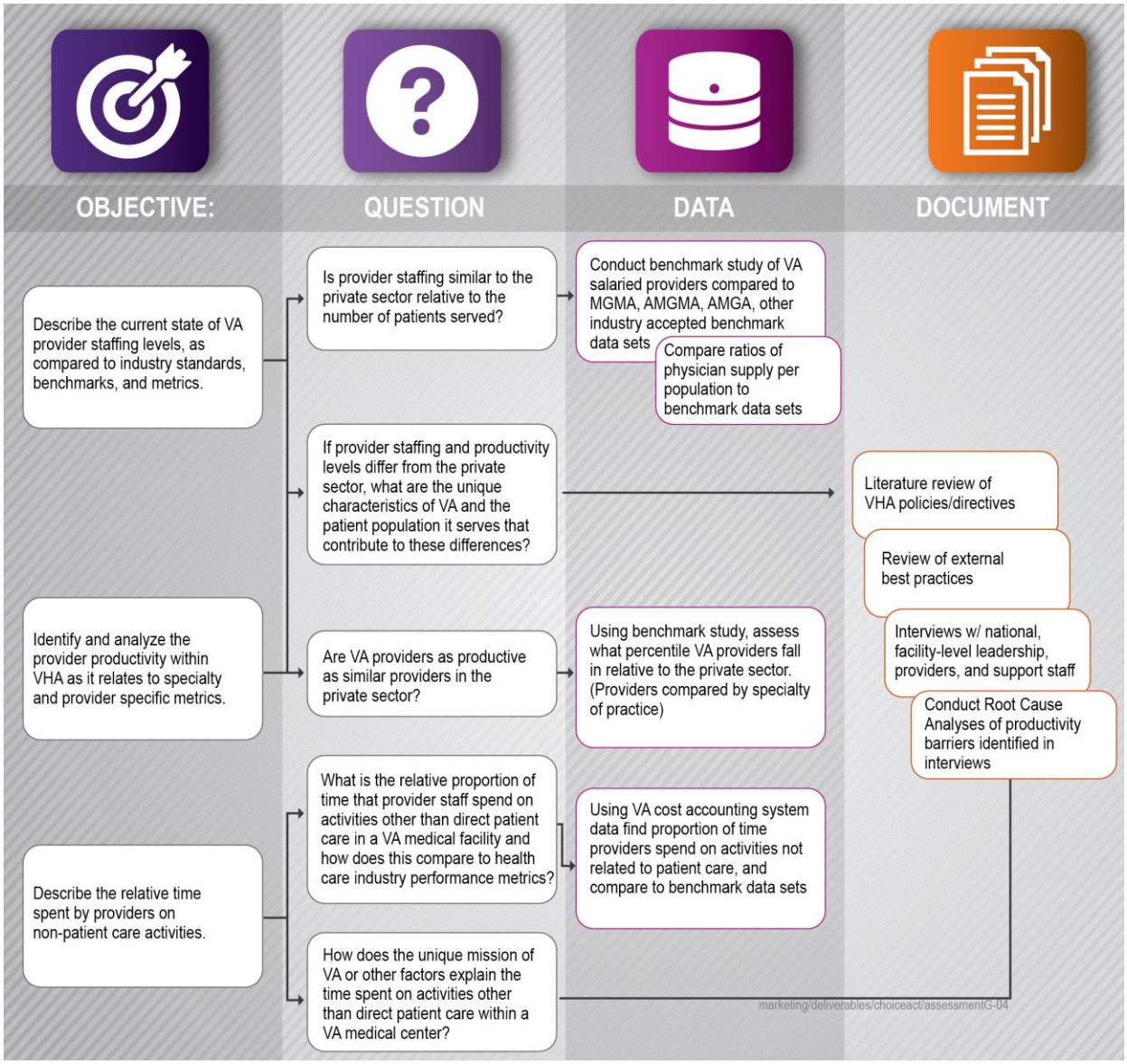
Our quantitative calculations are derived from a variety of VHA sources: site visits, VHA labor mapping encounters, wRVU and FTE data, site visits data and data reported in prior VHA reports. We obtained benchmark data published from sources such as MGMA and AMGMA, among others. In working with our data sets, our team calculated time allocation of VHA providers, FTE totals, and productivity of providers by encounters and wRVU industry benchmark rankings, and comparison of salary ranges and salary percentiles using benchmark surveys. Prior to our calculations, our team cleaned/defined our data sources, determined appropriate aggregate and major groupings of specialties and applied relevant adjustments to VHA workload data for comparability to industry (modifiers, gap and imputed codes, and duplication of workload credit to multiple providers).

Qualitative methods used by the team include: a literature review of relevant VHA policies and directives related to staffing and productivity, a literature review of relevant best practices across external health care industry organizations, interviews with VHA national policy and operations leaders and staffing and productivity subject matter experts and site visits which included interviews with VA medical facility leaders, health care providers, space, content analysis of the interview results and a root cause analysis of identified barriers.

Our team developed objectives and research questions for our overarching study, as well as for a separate sub-study of nursing staff.

Figure B-1 depicts the relationship between the Assessment G objectives and research questions, and the quantitative and qualitative methods employed in the study.

Figure B-1. Methodology Overview



Our assessment of overall staffing and productivity included analyses of the methodology, metrics, data sources, and decision-making processes that are utilized by VA medical facilities to determine staffing levels and budget allocations for nursing support both in inpatient and outpatient clinical areas. Our team paid special attention to decision drivers for nursing support because clinical support staff were found to be important influences of provider productivity. Nursing objectives and developed research questions are shown in Table B-1.

Table B-1. Nurse staffing objectives and developed research questions

Objective	Research Questions
Assess the methodology, types of data and decision making processes used by Medical Centers to allocate budgets and determine staffing levels for inpatient and outpatient nurse[225] staff.	What is VHA's methodology for nurse staffing of inpatient and outpatient clinics (primary and specialty care)?
	What directives, policies, and management reports govern safe and effective inpatient and outpatient nurse staffing decision making?
Describe the unique factors which impact VA budget allocation decisions and inpatient and outpatient nurse staffing decisions.	What nursing-sensitive indicators, care paths, and evidence based practices does VA develop that, in turn, drive nurse staffing processes?
	What are the nursing-sensitive quality measures that align with national performance measures to ensure adequate nurse staffing?

[225] ***Definition****: VHA nurses, for the purposes of this assessment, are defined in nurse staffing categories that include: Assistant Nurse Manager (while performing direct patient care), Charge Nurses, Clinical Nurse Leaders, staff registered nurses (RNs), graduate nurses (not yet licensed), Licensed practical nurses (LPNs) or vocational nurses (LVNs), Nursing Assistants (NAs) or Certified Nursing Assistants (CNA); excluding Nurse Managers, Assistant Nurse Managers (while performing administrative activities), Advanced Practice Nurses (Nurse Practitioners, Clinical Nurse Specialists) unit secretaries/clerks, monitor technicians, sitters, escorts, students (who are fulfilling educational requirements), and therapy assistants. Nurses are licensed by National Council Licensure Examination (NCLEX) examination and licensed in their resident state or by Nurse Licensure Compact (NLC), which allows RN nurses and licensed practical/vocation nurses (LPN/VN) to have one multistate license providing them with the ability to practice in both their home state and other NLC states. Nursing practice is described as the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations. VHA nurses are employed full-time by VA and some are employed on a contract basis.*

Objective	Research Questions
	What best practices and challenges has VHA encountered in adopting the VHA Directive 2010-034 nurse staffing methodology and other nurse staffing methodologies for outpatient settings (i.e., specialty and primary care)?
Describe and compare VA's methodology and decision-making processes for staffing allocations and determining inpatient and outpatient nurse staff ratios with private sector best practices.	What industry best practices align with the VHA nurse staffing methodology?
	How have external health care organizations addressed similar challenges and barriers in their nurse staffing methodology?
Identify potential opportunities for enhancements.	How can strategies developed by external health care organizations be applied by VHA to address its nurse staffing challenges and barriers?

The remainder of Appendix B is organized around the core assessment objectives. Each section describes the data definitions, sources of data, data quality, assumptions, and approach to analyzing data, for that objective. Following, we articulate our approach to selecting and executing site visits and analyzing data from the site visits.

B.2 Provider staffing levels (Objective 1)

Section 201(G) of the Veterans Choice Act requests "the staffing level at each medical facility of the Department and the productivity of each health care provider at such medical facility, compared with health care industry performance metrics…" The Assessment G team broke this into two separate requirements – staffing levels and productivity. The methodology for determining staffing levels of providers at each medical facility of the Department is included in this section. The methodology for determining provider productivity, compared to industry performance metrics, is included in the subsequent section. Staffing levels analyses include the total paid FTE, by specialty, groupings of specialties, and by facility, and a comparison to industry population based staffing ratios. In addition to assessing staffing levels, we also assessed several barriers to appropriate staffing levels. One potential barriers to reaching adequate staffing levels is salary for providers. To compare salary of VHA providers to industry, we conducted a separate analysis, which is also described in this section.

B.2.1 Definitions

Staffing level is defined as the sum of VA *paid* FTE (employees) who meet the definition of provider. This excludes fee-based providers under contract to provide care within VA facilities, (as they are not employees and there is no FTE information available on them), as well as non-VHA providers serving Veterans under contract in the community or at medical affiliates. One FTE equates to 2,080 hours per year, and includes paid benefit time (for example, paid vacation and holiday time). The staffing level calculations aggregate all FTEs, meaning all full and part time employees are totaled. For all calculations, we report average staffing levels over FY 2014.

Provider is defined as an independent licensed practitioner (Physician Assistants [PA], Nurse Practitioners [NP], Doctor of Medicine [MD], Physical Therapists, Psychologists, Optometrists, Dentists, Podiatrists, Social Workers) as noted in the glossary of Appendix G. Although contract and fee providers are, in some facilities, a significant proportion of care delivery teams (for example, an acute, complexity level 3 facility with a low demand for a service may be staffed in a particular specialty with only one fee-based provider who works only part time), they are deemed out of the scope of this assessment, due to the inability to quantify staffing levels (Worked FTE), or hours worked, as VA does not track this information.

Paid FTE is defined as the total number of hours for which a provider is paid by VHA. The paid FTE includes provider leave hours taken during FY 2014

Major Specialty Groupings: are categories for each specialty in VHA. Primary care is considered one of the Major Specialty Groupings but it was grouped and analyzed separately after each primary care provider was flagged in the data file. Table B-2 defines which specialties are included in which major grouping:

Table B-2. Specialties in major grouping

Specialty	Specialty Grouping
Addiction Psychiatry	Mental Health
Adolescent Medicine	Specialists-Medicine-Non-Hosp
Allergy and Immunology	Specialists-Medicine-Non-Hosp
Blood Banking	Specialists-Medicine-Non-Hosp
Cardiovascular Disease	Specialists-Medicine-Non-Hosp
Child and Adolescent Psychiatry	Mental Health

Specialty	Specialty Grouping
Chiropracty	Specialists-Medicine-Non-Hosp
Clinical and Laboratory Immunology	Specialists-Medicine-Non-Hosp
Clinical Cardiac Electrophysiology	Specialists-Medicine-Non-Hosp
Clinical Genetics	Specialists-Medicine-Non-Hosp
Clinical Neurophysiology	Specialists-Medicine-Non-Hosp
Clinical Pharmacology	Specialists-Medicine-Non-Hosp
Colon and Rectal Surgery	Specialists-Surgical
Critical Care Medicine	Specialists-Medicine-Hosp
Dermatological Immunology/Diagnostic and Lab Immunology	Specialists-Medicine-Non-Hosp
Dermatology	Specialists-Medicine-Non-Hosp
Dermatopathology	Specialists-Medicine-Non-Hosp
Diagnostic Radiology	Specialists-Medicine-Non-Hosp
Emergency Medicine	Specialists-Medicine-Hosp
Endocrinology/Diabetes and Metabolism	Specialists-Medicine-Non-Hosp
Family Practice	Specialists-Medicine-Hosp

Specialty	Specialty Grouping
Forensic Psychiatry	Mental Health
Gastroenterology	Specialists-Medicine-Non-Hosp
Geriatric Medicine	Specialists-Medicine-Non-Hosp
Geriatric Psychiatry	Mental Health
Hematology	Specialists-Medicine-Non-Hosp
Infectious Disease	Specialists-Medicine-Non-Hosp
Internal Medicine	Specialists-Medicine-Hosp
Interventional Cardiology	Specialists-Surgical
Medical Oncology	Specialists-Medicine-Non-Hosp
Medical Toxicology	Specialists-Medicine-Non-Hosp
Nephrology	Specialists-Medicine-Non-Hosp
Neurological Surgery	Specialists-Surgical
Neurology	Specialists-Medicine-Non-Hosp
Neurology with Special Qualifications in Child Neurology	Specialists-Medicine-Non-Hosp
Neuroradiology	Specialists-Medicine-Non-Hosp
Nuclear Medicine	Specialists-Medicine-Non-Hosp

Specialty	Specialty Grouping
Nuclear Radiology	Specialists-Medicine-Hosp
Nurse Anesthetist, Certified Registered (100500)	Specialists-Surgical
Nurse Practitioner (100600)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Acute Care (100601)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Adult Health (100602)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Community Health (100603)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Critical Care Medicine (100604)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Family (100605)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Gerontology (100606)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Obstetrics & Gynecology (100609)	Specialists-Surgical
Nurse Practitioner Occupational Health (100610)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Pediatrics: Critical Care (100613)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Perinatal (100614)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Primary Care (100615)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Psychiatric/Mental Health (100616)	Mental Health

Specialty	Specialty Grouping
Nurse Practitioner School (100617)	Specialists-Medicine-Non-Hosp
Nurse Practitioner Women's Health (100618)	Specialists-Medicine-Non-Hosp
Obstetrics and Gynecology	Specialists-Surgical
Ophthalmology	Specialists-Medicine-Non-Hosp
Optometry	Specialists-Medicine-Non-Hosp
Orthopedic Surgery	Specialists-Surgical
Otolaryngology	Specialists-Medicine-Non-Hosp
Pain Medicine	Specialists-Medicine-Non-Hosp
Pathology	Specialists-Medicine-Hosp
Pediatric Infectious Diseases	Specialists-Medicine-Non-Hosp
Pediatric Radiology	Specialists-Medicine-Non-Hosp
Pediatric Surgery	Specialists-Surgical
Pediatrics	Specialists-Medicine-Non-Hosp
Physical Medicine and Rehabilitation	Specialists-Medicine-Non-Hosp
Physician Assistant (100000)	Specialists-Medicine-Non-Hosp

Specialty	Specialty Grouping
Physician Assistant Medical (100100)	Specialists-Medicine-Non-Hosp
Physician Assistant Surgical (100200)	Specialists-Surgical
Plastic Surgery	Specialists-Surgical
Podiatry	Specialists-Medicine-Non-Hosp
Psychiatry	Mental Health
Psychology	Mental Health
Public Health and General Preventive Medicine	Specialists-Medicine-Non-Hosp
Pulmonary Disease	Specialists-Medicine-Non-Hosp
Radiation Oncology	Specialists-Surgical
Radiological Physics	Specialists-Medicine-Non-Hosp
Radiology	Specialists-Medicine-Hosp
Radium Therapy	Specialists-Medicine-Non-Hosp
Reproductive Endocrinology and Infertility	Specialists-Medicine-Non-Hosp
Rheumatology	Specialists-Medicine-Non-Hosp
Social Worker (010600)	Specialists-Medicine-Non-Hosp
Social Worker, Clinical (010100)	Specialists-Medicine-Non-Hosp

Specialty	Specialty Grouping
Social Worker, School (010500)	Specialists-Medicine-Non-Hosp
Spinal Cord Injury Medicine	Specialists-Medicine-Non-Hosp
Surgery	Specialists-Surgical
Surgery of the Hand	Specialists-Surgical
Surgical Critical Care	Specialists-Surgical
Thoracic Surgery	Specialists-Surgical
Urology	Specialists-Medicine-Non-Hosp
Vascular Surgery	Specialists-Surgical

**List developed based on internal Assessment G expertise of common industry groupings.*

B.2.2 Data sources

For the staffing level analyses, to include FTE analyses and fee-based provider wRVU analyses, we used three key data sources:

- VHA OPES Labor Mapping Data File run for pay periods corresponding with FY2014, entitled, "Provider Labor Detail FY14"This file includes the individual cost accounting codes and allocation of hours to each for each provider. A data definitions sheet accompanied this file.
- VHA OPES Productivity Data File for FY2014, entitled "Provider Detail FY14". This file includes information on wRVUs, encounters, specialties and FTEs. This file also included an accompanying data definitions file.
- Dental FTE calculations used the de-identified dental hourly and productivity data from the OPES Decision Support Extract File, entitled "201G FY14 Aggregate Dentist" and an associated file, "Dental Data Dictionary."

We reviewed and considered:

- The Graduate Medical Education National Advisory Committee (GMENAC) Study: Conducted in 1980 at the behest of Congress to determine the number of physicians needed per 100,000 population. [226]
- Journal of the American Medical Association publication from 1996: The Goodman ratio is derived from Dr. David Goodman's 1996 published findings in the Journal of the American Medical Association on the providers needed for a national fee-for-service community. [227]
- Journal of Health Care Management 1989 publication: The Hicks and Glenn ratio comes from a 1989 publication in the Journal of Health Care Management where Dr. Hicks and Dr. Glenn studied physician per population needs based on the current rate of patient visits to specialists as determined by the Department of Health and Human Services. [228]
- Thomson Health Care Study: The Solucient ratio is generated from a 2003 health care consulting firm study called Solucient (later acquired by Thomson) which assessed patient to physician visits using National Ambulatory Care Administration and Medical Group Management Association data.
- Truven Health Analytics: Truven has calculated ratios using 2014 data on the supply of physicians across the United States from internal Truven physician FTE databases and population data sourced from The Nielsen Company. Because the Truven data was the most recent ratio, we elected to use this ratio, though the others were analyzed initially, but excluded from the final report.

We assessed how VHA salary ranges compare to the private sector. For this analysis, we used:

- VA Salary data used the Final Approved Pay Ranges for Physician and Dentists effective January 11th, 2015[229]
- Industry Salary Data used the most recent AMGMA compensation and production survey entitled[230]

B.2.3 Assumptions and limitations

FTE calculations: The staffing level data does not include fee-based providers because FTE cannot be calculated without collecting extensive amount of data from querying individual medical centers across the Department, which would not be feasible given the time allotted.

[226] Merritt Hawkins. (n.d.). A Review of Physician to Population Ratios. 1-2. Retrieved from http://www.merritthawkins.com/pdf/a-review-of-physician-to-population-ratios.pdf

[227] Ibid.

[228] Ibid.

[229] U.S. Department of Veterans Affairs. Retrieved from http://www.va.gov/OHRM/Pay/PhysicianDentist/FinalAnnualPayRanges_20150111.pdf

[230] AMGMA Academic Practice Compensation and Production Survey for Faculty and Management: 2014 Report Based on 2013 Data.

The staffing levels aggregates specialties into major specialty groups and exclude clinical nurse specialists. The crosswalk of Major Specialty Groupings is listed in the definitions sections.

Comparing VHA Staffing to Industry: The comparison of VHA staffing levels to industry ratios used the physician FTEs relative to the 2014 VHA medical care enrollee population of 9,111,955.[231] Some VHA specialties were excluded because our team limited our comparison to the specialties with comparison data available. All VHA specialties that had at least one industry specialty represented in the Truven Study are included. Physician supply per 100,000 population ratios are commonly used by hospitals and health care systems as one input to identify staffing needs, and for community health needs assessments required for not-for-profit health systems under the Affordable Care Act. Typically, physician-to-population ratios are considered an indicator of physician need, but not a definitive benchmark, because they do not factor in demand. To more comprehensively understand need and to develop complete medical staffing plans, health care organizations should make projections at a local/community level, with a comprehensive assessment of local/geographic patient needs such as disease incidence and patient demographics, and demand for services, as well as physician demographics and practice styles, payment systems and other unique market factors.[232, 233]

B.2.4 Approach

Staffing Levels (FTE) Analysis: Our team analyzed the total FTEs by major specialty grouping by summing the VA-paid FTEs. We developed six major specialty groupings. We first mapped providers to a specialty using VHA's person classification codes, which denote a specialty or category of provider (i.e. Physician Assistant) for each provider. This information was provided to us by VHA along with data definitions. Using that mapping, we mapped specialists to the major grouping categories we created. We excluded clinical nurse specialists since they are not licensed independent providers. We separated social workers (normally grouped with APPs) from any of the major specialty groupings and depicted them in their own group. We also distinguished physician FTEs from APP FTEs.

Fee-based Provider Analysis: In Figure 2 2. Proportion of Total Workload Generated by Non-employed Providers, our team calculated the percentage of overall time that fee-based and others not otherwise accounted for in our provider data contribute to total RVUs. We displayed our findings by facility complexity. In Figure 2-2, our team determined the proportion of total wRVUs generated by fee-based providers (and other providers without a labor mapping). We highlighted the specialties with the highest proportion of wRVUs generated by these providers.

[231] Bagalman, Erin. (2014) The Number of Veterans That Use VA Health Care Services: A Fact Sheet. P3. Congressional Research Service. Retrieved from https://www.fas.org/sgp/crs/misc/R43579.pdf

[232] Moody, J. (2003) Demonstrating Community Need for Physicians. 1-4. Retrieved from http://www.amerimedconsulting.com/wp-content/uploads/2011/08/Demonstrating-Community-Need-for-Physicians.pdf

[233] Merritt Hawkins. (n.d.). A Review of Physician to Population Ratios. 1-2. Retrieved from http://www.merritthawkins.com/pdf/a-review-of-physician-to-population-ratios.pdf

In order to display these findings at the aggregate specialty level, our team mapped VHA specialties to aggregate specialties and summed wRVUs.

To calculate FTE levels for dental providers, the Assessment G team used de-identified dental hourly and productivity data compiled from a labor map extract provided by VHA and compared it to transactional procedural information from the Dental Reporting and Analytics System (based on data from the Corporate Data Warehouse (CDW) dental domain. This data was presented on a pay period level of detail. Providers who had productivity indicators (such as RVUs, Visits, or Procedures) but 0 hours recorded for a pay period were removed from the analysis. The pay periods were then rolled up into FY 2014 totals for every provider to establish total hours worked for the year. These figures were then divided by a standard of 2,080 hours (assuming a normal workweek of 40 hours per week, 52 weeks per year) to establish FTE counts. FTE counts were established on a specialty basis, and Total FTE, Clinical FTE, Administrative FTE, and Research FTE counts were all calculated based on the provided data.

Physician Staffing Supply to Industry Comparisons: To depict the difference in physician staffing between VHA and industry standards, our team used the Truven ratio (the most recent of the available industry benchmarks) and compared VHA's current FTE levels per enrollee population to the Truven calculated FY14 supply of physicians per population. Our team applied the Truven ratio to the 9,111,955 enrollees and subtracted this quantity from the current VA FTE levels. In instances where the Truven ratio volume exceeded current VHA FTE levels, a negative value is displayed in red hues. In instances where the Truven ratio proposed volume was less than current VHA FTE levels, a positive value is displayed in blue hues.

Salary Comparisons: Our team compared compensation between VHA providers and industry by focusing on existing VHA salary requirements and 2013 AMGMA surveyed salary data. In Figure 2-7 the values in light pink represent the difference between VHA Tier 1 and AMGMA salary at the 10th percentile. The values in dark purple represent the difference between VHA Tier 3 and AMGMA salary at the 90th percentile. Negative values indicate that AMGMA salaries at the 10th or 90th percentile exceed VHA physician salaries at either the 1st or 3rd tier respectively.

B.2.5 Provider productivity (Objective 2)

Section 201(G) of the Veterans Choice Act requests "the staffing level at each medical facility of the Department and the productivity of each health care provider at such medical facility, compared with health care industry performance metrics…" The Assessment G team compared VHA provider productivity to industry performance benchmarks. This included measurement of caseload or panel size, encounters, and wRVUs for primary care and specialty care. We also assessed dental provider productivity primarily using visit data. Below we provide a brief review of key information to consider in conducting provider productivity analyses which informed the basis of our approach.

Measuring Provider Productivity

There are a variety of ways to measure productivity of physicians and APPs. Common measures used by health care delivery systems include: visits/encounters, charges, collections, procedures, ambulatory/hospital encounters, patient panel size, and wRVU values. Utilizing multiple indicators can provide a robust picture; however, in most cases the industry standard for benchmarking productivity remains wRVU values. The RVU system was developed as part of the RBRVS and is currently used as the Medicare physician reimbursement formula (most commercial and Medicaid systems follow as a methodology). The RVU system assigns weightings for each clinical activity which a provider performs based on time and complexity. Furthermore, RVUs offer the only non-financial method of quantification that takes into account time and complexity of the clinical activity of the provider.

In private industry, monitoring provider productivity can be one element in tracking a practice's financial health and is becoming the basis for provider compensation or bonuses.[234] Providers are typically measured by aggregation of annual wRVU totals for all procedures on an annual basis, as a measure which informs both total compensation and bonuses. Although VHA does not measure its providers individually on productivity or provider performance bonuses based on productivity, this widely accepted measure of productivity provides a medium for a meaningful comparison between the productivity of VA staff providers to productivity of providers practicing in the same areas of medicine and health care in private industry. As wRVU is the most common industry standard for comparison, the Assessment G team used wRVU as one measure of productivity, particularly for specialty care providers. (The RVU system is further described below in the definition section).

Work RVUs as a measure have some drawbacks. Specifically wRVUs may undervalue the medical decision-making component of a visit or service and may not account adequately for other cognitive activities such as care coordination and team care models of practice.[235] Given VHA's population focused care model, this is a particular concern of VHA's Office of Primary Care and a key reason why that office does not measure its primary care providers using wRVUs. Any potential undervaluation should be reflected in comparison benchmark data from industry standards because the same relative valuation of clinical productivity will be utilized, if coding and documentation is comprehensive and accurate. Since wRVUs are dependent on accurate and thorough coding and documentation practices, and the vast majority of VHA encounters are not audited or checked for accuracy, it cannot be determined whether wRVUs accurately reflect VHA provider workload. For this reason, we have included both encounters and wRVUs for specialty care. Primary care providers are measured by panel size, which is, by many definitions, roughly equivalent to caseload for primary care providers.

Industry Productivity Performance Metrics

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[234] Rodegero, J. A. (1999). Benchmarking Physicians' Practices: Trends toward the Millennium. *Journal of Health Care Finance*. 25 (4), pp. 15-37.

[235] D'Alessandri R. M., Albertsen, P., Atkinson, B.F., Dickler R.M., Jones, R. F., Kirch, D.G.,… Longnecker, D.E., Zuza K.L., (2000) Measuring contributions to the clinical mission of medical schools and teaching hospitals. *Academic Medicine*. 75(12) p1231-1237.

As noted above, the Assessment G team used two well-known benchmark data sets to compare productivity (encounters and wRVUs) for specialists and primary care providers. These include the Medical Group Management Association (MGMA) Physician Compensation and Production Survey, MGMA Academic Practice Compensation and Production Survey (commonly known as "AMGMA"). Additionally, primary care providers were also compared (by panel size) to these surveys, as well as Kaiser Permanente Northern California Medical Group, and a calculated panel size using a formula from AAFP. We did initially compare to the AMGA Medical Group Compensation and Financial Survey; however, due to lack of permission to share this benchmark data externally, we did not include the specialty comparison in the report. We do include AMGA benchmarks for primary care. Additional information on these benchmark surveys is provided below in the definitions section. In addition to these large national surveys, certain specialties have their own trade groups that generate their own benchmarking information. These benchmarks typically have a much smaller sample size and often have a similar distribution; as such, we elected to use the aforementioned surveys to compare groups exclusively. Because dentists are not included in these benchmark data sets, we did benchmark them separately against 2010 data provided by a survey from the American Dental Association.

B.2.5.1 Definitions

Physician specialty: Physician Specialty is determined by aggregating the Health Care Provider Taxonomy, which is linked to each provider's National Provider Identifier (NPI) in a separate field.[236] Each physician "person class" from the VHA Person Class file is mapped to a specialty that is defined by the American Board of Medical Specialties. OPES aggregates minor classifications into broader categories, known as aggregate specialty, for reporting. In this assessment, we mapped providers to determine aggregate specialty FTE and productivity levels.

Encounter: VHA defines an encounter as "a professional contact between a patient and a practitioner vested with responsibility for diagnosing, evaluating, and treating the patient's condition. Encounters occur in both the outpatient and inpatient setting."[237] VHA further defines an encounter by the environments in which it can occur, specifically, "Encounters occur in outpatient and inpatient settings (including Residential Rehab Treatment centers). (1) Contact can include face-to-face interactions or those accomplished via telecommunications technology. (2) Contact can be through Secure Messaging which is available through the My HealtheVet (MHV) personal health record (PHR). These non-urgent communications must meet the definition of an encounter. A review of the health record is done by the physician or qualified non-physician and clinical decision making is performed at some level. The care plan is communicated with the patient electronically. (The Secure Message that is related to a visit within the last 7 days cannot be captured as workload as it is considered part of the actual face-to-face visit.) (3) Encounters are neither occasions of service nor activities incidental to an encounter for a provider visit. For example, the following activities are considered part of the encounter itself and do not constitute encounters on their own: taking vital signs, documenting

[236] National Uniform Claim Committee (NUCC) maintains the Health Care Provider Taxonomy.

[237] U.S. Department of Veterans Affairs. (2013). VHA Site Classifications and Definitions, *VHA Handbook 1006.02*, Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2970

chief complaint, giving injections, pulse oximetry, administering medications, etc. (4) A telephone contact between a provider and a patient is only considered an encounter if the telephone contact is documented and that documentation include the appropriate elements of a face-to-face encounter, namely history and clinical decision-making. Telephone encounters must be associated with a clinic assigned to one of the DSS Identifier telephone codes and are to be designated as count clinics. ***NOTE:*** *Count refers to workload that meets the definition of an encounter or an occasion of service. The American Medical Association (AMA) changed the definition of the 2008 CPT® Telephone Call codes. Many of VHA's performance monitors require follow-up care delivered by telephone, therefore, the 2008 CPT® telephone codes are to be used as previously defined."*[238] This is consistent with MGMA's encounter definition (however, the Academic MGMA survey does not include telephone encounters).

Workload relative value unit (wRVU): In 1988, Hsiao et al. detailed a RBRVS that is now the basis for reimbursement by third-party payers in the U.S.[239] The unit of measurement, RVU, has three categories that inform the price for health care services: physician work (denoted as work RVU, or, wRVU), practice expense, and malpractice insurance. Since VHA providers do not hold individual or corporate liability for malpractice insurance or practice infrastructure, the malpractice and practice overhead RVU components are not relevant. WRVU encompasses the relative amount of time, skill, and intensity required to complete a given procedure. This sub-component of the RVU accounts for 52 percent of the total value. To account for changes in practice patterns and medical technology the Relative Value Update Committee, a group of physicians sponsored by the American Medical Association, recommends updates to RVU values to CMS every year.

Medical Group Management Association (MGMA): MGMA is an industry group that provides publications, seminars, conferences and surveys/benchmarks to physician practices on practice operations, cost containment, revenue cycle, provider productivity and compensation. On an annual basis, MGMA issues the Physician Compensation and Production Survey (inclusive of non-physician providers such as PA, NP, CRNA, etc.) as well as the Academic Practice Compensation and Production Survey.

MGMA Physician Compensation and Production Survey:[240] Includes 4,197 medical groups and 66,299 providers. Across primary care and specialty care and a wide range of geographies. This survey is the most commonly used survey of all existing physician performance and compensation benchmarking options.

[238] U.S. Department of Veterans Affairs. (2015). VHA Directive 1082. Patient Care Data Capture. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=3091

[239] Hsiao W.C., Braun, P., Yntema, D., Becker, E.R. (1988). Estimating physicians' work for a resource-based relative-value scale. *N. Engl. J. Med.* 319 (13): 835–41.

[240] MGMA. (2013).*Physician Compensation and Production Survey: 2014 Report Based on 2013 Data*. Retrieved from http://www.mgma.com/Libraries/Assets/Key-Findings-PhysComp_FINAL-with-copyright.pdf

MGMA Academic Practice Compensation and Production Survey:[241] MGMA's Academic survey includes 20,876 providers and 1,996 administrative staff. This survey includes multi-mission providers who have clinical, research and teaching time. This survey is valuable to understanding the relationship between clinical production and additional responsibilities held by academicians, such as research and teaching.

American Medical Group Management Association (AMGA): The AMGA is the industry group that most large health systems and medical groups belong to. AMGA offers a forum to connect providers with each other and to make them aware of best practices and to spread information nationally. Only providers can be members, though other industry professionals can purchase access to the information AMGA providers.

AMGA Medical Group Compensation and Financial Survey:[242] AMGA's annual survey includes responses from 289 medical groups including 73,700 providers for an average group size of 255. This survey has been conducted since 1986, and includes a wide range of organizational structures and geographies. Respondents tend to be larger organizations. Unlike the other two benchmark sets, data is published demonstrating quartiles, rather than as individual provider percentiles. We did compare to the AMGA survey; however, we were not able to publish the results for specialty care.

Panel: A panel is the set of patients assigned to a specific primary care provider or care team. Panels are typically used in health maintenance organizations (HMOs) and health care systems implementing a Patient Centered Medical Home (PCMH) model.

B.2.5.2 Data sources

To calculate FTE levels needed for measuring productivity by provider adjusted clinical FTE (cFTE), the Assessment G team used the labor mapping data provided within the VHA OPES Productivity Data File (Provider Detail FY14) and the VHA OPES Labor Mapping Data File (Provider Labor Detail FY14). Each provider's productivity calculation (whether based on encounters or wRVUs), used clinical Worked FTE as the denominator, which excludes vacation and holidays and other non-direct patient care time. It also excludes bed days of care (inpatient rounding time) for some specialties. Using clinical FTE (cFTE) differs from the staffing levels FTE calculation described above, as only worked hours in the clinical environment (direct patent care hours, in accordance with VHA's labor mapping definitions) are included in productivity calculation.

To calculate the total VHA cFTE providers, the Assessment G team used the labor mapping for each provider as contained within the VHA OPES Productivity Data File and the VHA OPES Labor Mapping Data File. The labor mapping file was extracted by VHA OPES from the Decision Support System (DSS) within VHA's CDW that contained labor mapping hourly details. Within

[241] MGMA. (2013) *Academic Practice Compensation and Production Survey for Faculty and Management: 2014 Report based on 2013 Data.* Retrieved from http://www.mgma.com/Libraries/Assets/Store/Surveys/8743-2014-Key-Findings-Academic-Practice.pdf

[242] AMGA (2014) *2014 Medical Group Compensation and Financial Survey: 2014 Report Based on 2013 Data*. Alexandria, VA, American Medical Group Association.

DSS, all costs (measured in time per resource) including physician and dentist labor are mapped into ALBCCs. Labor ALBCCs are mapped to the Direct Patient Care or Indirect Administration, Education, or Research account codes that represent production units for related work activities. All time spent by all full and part-time VHA-employed physicians, APPs and dentists (except Without Compensation providers who do not have a labor mapping) is categorized into Direct Patient Care, Administration, Research, and/or Education. The percentage of time for each physician, APP and dentist spent in each of these categories is captured in combined ALBCC hours.[243]

The VHA OPES Labor Mapping Data File included pay periods 13-26 (September 22, 2013) through 14-25 (September 20, 2014) and were sorted on a pay period level. This time period corresponds roughly to Fiscal Year 2014; however, the dates do not align exactly due to a difference in when the pay period closed from the fiscal year. The pay periods were aggregated into FY 2014 totals for every provider's productivity calculations. Table B-3 shows the data fields provided for all APPs and physicians.

To calculate dental productivity, our team used the de-identified Dental Hourly and Productivity Data File (201G_AggregateDentistFY14.xls) from the OPES Decision Support Extract as well as the 2010 ADA Survey of Dental Practice: Characteristics of Dentists in Private Practice and their Patients (for benchmarking). The data fields within the Dental Hourly and Productivity Data File are shown in Table B-4.

In assessment productivity of Primary Care Providers, our team used a file of Division Modeled Capacity extracted from the Primary Care Management Module (PCMM). OPES also provided our team a file of actual and facility determined maximum panel sizes by provider. This file identified characteristics such as location, team type, self-reported FTEs and a Physician or APP designation.

Table B-3. APPs and physician data fields within VHA OPES labor mapping data file[244]

Data Field	Definition
PhysicianID	De-identified provider social security number, as noted on VHA encounters with CPT® codes

[243] U.S. Department of Veterans Affairs (2011) VHA Directive 2011-009 Physician and Dentist Labor Mapping. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2384

[244] Data definitions provided by VHA OPES, April 9, 2015

Data Field	Definition
Sta3n	The raw "3 digit" parent station numbers on the encounter record. In general, the 3 digit station number will identify the 'administrative parent facility'. Exceptions are VISN 2, VISN 15, and VISN 23.
Sta6a	6-digit station number used within VHA to identify point of service. One 'administrative parent' may have several of these.
PayPeriodStart	This is a date field that represents the first day of the pay period.
BudgetObjectCode	Budget Object Classification (BOC) codes are used to report VA's personal services, supplies or services. Any cost center/budget object code combination is acceptable, unless specifically identified in the Unique Cost Center/Budget Object Code Combination Table. (Reference: VA Handbook 4671.2).
ALBCostCenter	The DSS ALBCC Code is composed of three parts: ▪ The three-character prefix is the 2nd through 4th characters of the VA Cost Center (VACC) (omitting the leading "8") indicating the clinical service that manages the Production Unit. ▪ The two-character DSS Production Unit Code reflects the work unit nationally and identifies the clinical activity. ▪ The division suffix which can be one or two characters, as needed, to reflect the division of the main station (VA medical facility) number.

Data Field	Definition
Albcc_h	FY14 worked hours allocated to the ALBCC from linking DSS Labor mapped percentage of time to pay period hours. Leave and annual leave are not included within this measure.
ALBCC_Normal_h	FY14 normal paid hours allocated to the ALBCC from linking DSS labor mapped percentage of time to pay period hours.
ALBCC_Regular_h	FY14 paid additional hours allocated to the ALBCC from linking DSS labor mapped percentage of time to pay period hours. This measure contains additional hours worked by part time employees beyond their typical (normal) hours.
PctALBCostCenter	Percent of hours allocated to the ALBCC.

Table B-4. Dental Productivity Data Fields and Definitions from Dental Hourly and Productivity Data File[245]

Data Field	Definition
VISNSID	The VISN number where care was provided and workload recorded.
FCDMAdminParent	The administrative parent facility where care was provided and workload recorded.
PersonClass	The predominant person class specialty during pay period.
PersonClassSpecialty	The predominant person class specialty (i.e. Dentist – General, Dentist – Endodontics, etc.) during that pay period.
DentalLvl1	First level dimension hierarchy (Dentist, OMFs).

[245] Data summary used MITRE 201G Team: Dentists Data Definitions, provided by VHA Office of Dentistry, March 17, 2015.

Data Field	Definition
DentalLvl2	Second level dimension hierarchy (i.e. Dentist, Orthodontist, etc.).
UniqueDentalStaffID	A de-identified key integer representing the provider at that administrative parent site.
PPStart	The starting data of the two week pay period.
TotalHours	The total number of aggregated labor mapped hours for the pay period.
ClinicalHours	The aggregated number of labor mapped hours in clinical product units for the pay period.
AdministrativeHours	The aggregated number of labor mapped hours in administrative product units for the pay period.
EducationHours	The aggregated number of labor mapped hours in education product units for the pay period.
ResearchHours	The aggregated number of labor mapped hours in research product units for the pay period.
PersonClassCode	The VA person class code standardized in VistA.
SumRVUs	The aggregated sum of RVUs applicable to the procedures performed and/or personally supervised by the attending dentist for the pay period.
SumProcedures	The aggregated sum of CPT® codes applicable to the procedures performed and/or personally supervised by the attending dentist for the pay period.
SumVisits	The aggregated sum of patient visits performed and/or personally supervised by the attending dentist for the pay period. Each patient counted no more than once per day per site even if additional encounters.

Data Field	Definition
Grouping	General grouping categorization of pay period activity. When there is clinical activity with no clinical mapping, generally this is attributable to care provided by an on-site contract/fee provider.
Total FTE (FTE)	Actual worked hours are converted into FTE. Annual FTE is calculated by taking the actual worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).
Clinical FTE (FTEc)	Actual clinical worked hours are converted into FTEc. Annual FTEc is calculated by taking the labor mapped clinical worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).
Admin FTE (FTEa)	Actual administrative worked hours are converted into FTEa. Annual FTEa is calculated by taking the labor mapped administrative worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).
Education FTE (FTEe)	Actual education worked hours are converted into FTEe. Annual FTEe is calculated by taking the labor mapped education worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).
Research FTE (FTEr)	Actual research worked hours are converted into FTEr. Annual FTEr is calculated by taking the labor mapped research worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).

To calculate cFTE levels for providers, the Assessment G team used the APP and physicians FTE data from the VHA OPES Labor Mapping Data File as well as FTE data from VHA OPES Productivity Data File. The FTEs reported from the Productivity extract reflected worked FTEs. By applying leave factors (percentages which allowed worked hours to be converted to paid hours) derived from the Labor data extract (by physician), the PAID FTE amounts were calculated. In addition, some other FTE refinement occurred for providers that were listed more than once within the Productivity extract. This refinement was done to ensure that the total FTE for any given provider was presented accurately. After these steps were taken, the FTE data was extracted from the Productivity data. For auditing purposes, the VHA OPES Productivity Data File FTE totals were compared to the VHA OPES Labor Mapping Data File, specifically the FTE hours and FTE categories. A basic validation was completed and the labor hours and classifications were determined to be closely correlated with the VHA OPES Productivity Data File FTE information.

The productivity extract data file was matched to the labor mapping file (using the same provider de-identifiers) and included the following fields shown in Table B-5.[246]

Table B-5. Productivity data fields and definitions; from VHA OPES productivity data file

Data Field	Definition
PhysicianID	De-identified provider social security number, as noted on VHA encounters with CPT® codes.
NPIFlag	Provides a yes/no indicating whether the provider had an NPI number listed in the data warehouse.
ProviderType	Provides a category for the provider workload as one of the following: ▪ Resident Only = no VA 'attending' provider on encounter but has a resident. ▪ VA = If not "Resident Only" AND matches with DSS created Labor Map file in CDW. ▪ Fee = If not "Resident Only" AND no match with DSS Labor Map file but find provider in Fee files. ▪ Other = does not meet any of logic above.

[246] Productivity data definitions "Data Definitions-Physician Detail RVU, Encounter and FTE" VHA OPES, February 26, 2015.

Data Field	Definition
Sta3n	The raw "3 digit" parent station numbers on the encounter record. In general, the 3 digit station number will identify the 'administrative parent facility'. Exceptions are VISN 2, VISN 15, and VISN 23.
LegacySta3N	The 3 digit station number used to identify the legacy administrative parent facility.
AggregateSpecialty	Maps the minor specialty, based on the provider's person classification/taxonomy into one of 38 specialties.
Specialty	Extrapolated from the person classification, this is the specialty of the provider. There are 77 specialties.
PersonClass	Provides the 'person class' code associated with the providers on the encounter, from the CDW. The Person Class Mapping is the relevant reference file for this data point.
RVUSum	Sum of FY14 wRVUs based on CPT® codes and applicable RVU on each encounter.
NumEncountersRVU	Sum of encounter counts when the encounter has a CPT® that has an RVU value greater than zero per CMS, INGNEX Gap, or Imputed RVU schedules. Encounter sum is by unique provider.
NumEncountersNoRVU	Sum of encounter counts when the encounter does not have a CPT® with no RVU value per CMS, INGNEX Gap, or Imputed RVU schedules. Encounter sum is by unique provider.

Data Field	Definition
Total_FTE	The sum of Clinical FTE+ Admin FTE +Education FTE+ Research FTE +Other FTE. Actual worked hours are converted into FTE. Annual FTE is calculated by taking the actual worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours) , thus the field represents the sum of worked FTE from DSS created Labor Map file in CDW per ALBCC logic.
Clinical_FTE	Direct patient care time to prepare, provide for, and follow-up on the clinical care needs of patients. (Note: clinical FTE includes bedday FTE). Actual worked hours are converted into FTE. Annual FTE is calculated by taking the actual worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).
BedDay_FTE	Time spent for inpatient bedside attending rounds. Actual worked hours are converted into FTE. Actual worked hours are converted into FTE. Annual FTE is calculated by taking the actual worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).

Data Field	Definition
AdjClinical_FTE	This field adjusts the Clinical_FTE for specialties that do or do not capture inpatient CPT® codes. It represents the Clinical MD FTE (C) that excludes Bedday FTE for Medicine & Mental Health Specialty areas and the Surgery Surgical Critical Care (183104) person class code. Actual worked hours are converted into FTE. Annual FTE is calculated by taking the actual worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).
Admin_FTE	Administrative time includes time spent on managerial or administrative duties, generally at the level of the department, service, medical center, network, or nationally, both within and outside VA. Actual worked hours are converted into FTE. Annual FTE is calculated by taking the actual worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).
Education_FTE	Education is defined as time spent providing formal training (didactic education). Actual worked hours are converted into FTE. Annual FTE is calculated by taking the actual worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).

Data Field	Definition
Research_FTE	Research is defined as time spent performing formal, approved health care research, or in activities in direct support of approved research. Actual worked hours are converted into FTE. Annual FTE is calculated by taking the actual worked hours of the provider divided by 2080, where 2080 is the available hours to work for the fiscal year (26 pay periods *80 hours).

A CPT® details data file ("VHA OPES CPT® Details Data File") was also provided by VHA. This allowed the team to validate the wRVU calculations within the VHA OPES Productivity Data File. The file also allowed the team to assess modifier adjustments (addressed below) and assess the impact of gap and imputed code based wRVU values. The fields submitted within the VHA OPES CPT® Details Data File are included Table B-6.

Table B-6. VHA OPES CPT® details data file[247]

Data Field	Definition
ProviderID	De-identified provider social security number, as noted on VHA encounters with Current Procedural Technology [CPT®] codes).
PersonClass	Provides the 'person class' code associated with the providers on the encounter, from the CDW. The Person Class Mapping is the relevant reference file for this data point.
Sta3n	The raw "3 digit" parent station numbers on the encounter record. In general, the 3 digit station number will identify the 'administrative parent facility'. Exceptions are VISN 2, VISN 15, and VISN 23.
LegacySta3N	The 3 digit station number used to identify the legacy administrative parent facility.
VisitCalendarYear	Calendar year of the visit

[247] Productivity data definitions "Data Definitions-Physician Detail RVU, Encounter and FTE" VHA OPES, February 26, 2015.

Data Field	Definition
CPT® Code	The procedure code relating to the record.
RVUType	Indicates the source of the wRVU value; "Gap", "Imputed" or "CMS".
WorkRVU	The wRVU Amount related to the CPT® Code.
CPTCnt	The Count of CPT® Codes.
RVUSum	The WorkRVU Times The CPTCnt.

For the productivity benchmarking comparison, the Assessment G team used the following industry data sets/reports:

- 2014 Physician Compensation and Production Survey, MGMA
- 2014 Academic Practice Compensation and Production Survey for Faculty and Management, MGMA
- 2010 Survey of Dental Practice: Characteristics of Dentists in Private Practice and Their Patients, American Dental Association

B.2.5.3 Assumptions and Limitations

The data sets for VHA productivity and the data sets for industry benchmarks exhibited significant differences. At an overarching level, comparing a population health oriented delivery system to benchmarks which primarily represent a fee for service model presents comparability issues. To increase comparability of the two data sets, our team applied several adjustments. We adjusted for the use of modifiers, gap codes/imputed wRVU values, and adjusted for duplication of workload credit. However, VHA productivity data extracts do not include modifiers, so we could not make modifier-related wRVU adjustments. Instead, we have applied CMS-based adjustments (described below) which primarily affect surgical specialties, but account for some of these differences.

Adjusting for provider workload double crediting

In the benchmark data sets, if multiple providers are associated with an encounter, only one provider receives workload credit. In the VHA data set, multiple providers can receive workload credit. As the Assessment G team could not fully adjust for the instances in which credit was given to multiple providers to make a direct comparison to the benchmark data set, the team asked OPES to analyze this data and provide an explanation that summarizes the potential impact to the data. OPES provided the following explanation:

> OPES uses the Corporate Data Warehouse to pull encounter-level data for physicians. OPES generates an encounter record for each physician on the encounter and assigns the sum of all relative value units (RVUs) to each physician. In fiscal year 2014, there were 63,220,165 unique encounters with at least one physician on the encounter. Of these encounters, 17,104,029 (27.1 percent) encounters had more than one physician on the encounter. Consistent

with OPES cube business rules (Providers are not given RVU credit for encounters when any of the following are true: (1) the primary stop code for the encounter is pathology; however, the provider's person class is not pathology; (2) the primary stop code for the encounter is radiology; however, the provider is not coded as the "doing" provider; (3) the primary stop code for the encounter is surgery and the provider's person class is pathology or radiology) the providers who were believed to be on the encounter as solely the ordering provider were removed and this number was reduced to 1,852,811 (2.9 percent). To assess the magnitude of assigning the total RVU sum to all physicians on the encounter, the sum of total RVUs associated with each unique encounter (62,376,746.36) was compared to the sum of total RVUs generated when each physician on the encounter gets credit for the total sum of RVUs (64,545,139.05). This resulted in a difference of 2,168,393 total RVUs, or a potential 3.4 percent increase in total RVUs.[248] (VHA OPES, 2015)

Adjusting for lack of modifier usage

Upon review, the Assessment G team uncovered three issues with the manner in which VHA captures physician work product and calculates that into wRVU values, which result in the VHA data not being comparable to the benchmarks. CMS utilizes a variety of modifiers typically utilized during the billing process to identify additional information on either the site of service or the role a provider may play in the provision of care. At this time, VHA **does not** capture, nor document, any modifier usage in its productivity reporting.[249] The benchmark surveys require adjustment of modifiers to maximize comparability; as such, the lack of modifier usage by VHA could have significant implications to the interpretation of the data. Depending on the type of service or the role, a provider may have a different wRVU value. The following two examples illustrate this:

- A modifier 50 is utilized to denote a bi-lateral procedure when two knee procedures are performed. While one CPT® code is utilized to denote the procedure, the bi-lateral modifier is used to assign a factor of 1.5 to the wRVU value. This relates to the efficiency that comes from providing the second procedure while already performing the first.
- The 80 series of modifiers denotes the use of a surgical assistant; either a physician or an APP. In the private sector, the provider generally will bill CMS under the same CPT® code; however, the provider will utilize an 85 modifier to denote that the activity was for an assist and not as a primary surgeon. This reduces the CPT® code by 85 percent and awards only .15 of the primary surgery CPT® code.

The lack of modifiers generally impacts surgical specialties more than non-surgical specialties. With acknowledgment of OPES and VHA that this information could not be provided to the Assessment G team, the Assessment G team developed a methodology to adjust for this data anomaly. CMS publishes a complete billing data set by code along with the frequency of

[248] Campbell, J. OPES (2015, March 9).Multiple Provider Analysis. Received via email communication.

[249] Choice Act 201G – OPES Data Discussions Continued, Notes and Action Items – Call March 9, 2015

modifier application by CPT® code. In the absence of modifiers, the team utilized the CMS Medicare 2013 utilization by CPT® code to adjust for the frequency by which codes were awarded to all providers at 100 percent value. Given a standard of care that is generally followed nationally, the CMS utilization rates were deemed appropriate for comparison purposes. The Assessment G team utilized the weighted average of the surgical assist codes by CPT® code to adjust for the wRVU value. An example follows in Figure B-2.

Figure B-2. CMS actual[250]

Code	Description
27137	Revise Hip Joint Replacement

Provider Type	VA RVUw	CMS RVUw w/ Modifier usage	MS Frequency		Weighting	
Primary Surgeon	22.700	22.700	4,974	64.78%	14.706	
Assistant Surgeon	22.700	3.405	2,704	35.22%	1.199	
		Total	**7,678**	**100.00%**	15.905	Weighted Average RVUw

The first row in the example represents the primary surgeon and the second row represents the assisting surgeon. VHA business rules dictate that wRVU credit be applied in the same amount of 22.7 for both the primary surgeon and assisting surgeon. This is inconsistent with business rules for the benchmark data sets used in this study. To make the data comparable, the Assessment G team applied the following modification approach to adjust the data received from OPES:

1. The wRVU for the assisting surgeon is modified to 3.045 (22.7 x .15).
2. A weighted average wRVU is calculated by applying the relative number of cases performed by primary surgeons (65 percent) and assisting surgeons (35 percent), yielding an overall weighted average wRVU of 15.90.
3. The weighted average wRVU (15.90) is applied to each CPT® code in the data set, thereby adjusting wRVU credit.

While this method has limitations on an individual provider basis (for example, there is no way to tell which provider is the assistant vs. the primary surgeon), it offers the most valid approach for overall comparisons by specialty, given the lack of data on modifiers in the VHA data set. See Figure B-3.

[250] Assessment G analysis which used CPT Detail FY14, provided by VHA OPES, March 5, 2015.

Figure B-3. wRVU with modified wRVU and percent of original[251]

Specialty	Original RVUw Total	Modified RVUw Total	% of Original RVUw
Thoracic Surgery	359,714	277,528	77.15%
Neurological Surgery	244,253	203,601	83.36%
Orthopaedic Surgery	1,197,013	1,055,807	88.20%
Clinical Genetics	2,130	1,888	88.63%
Colon and Rectal Surgery	99,289	91,140	91.79%
Vascular Surgery	601,644	554,807	92.22%
Surgery	1,404,862	1,313,468	93.49%
Surgical Critical Care	52,028	48,876	93.94%
Reproductive Endocrinology and Infertility	300	283	94.06%
Pediatric Surgery	1,796	1,731	96.38%
Urology	1,073,797	1,039,618	96.82%
Obstetrics and Gynecology	182,574	177,101	97.00%
Nurse Anesthetist CRNA	194,714	190,895	98.04%
Surgery of the Hand	61,539	60,448	98.23%
Plastic Surgery	269,187	264,809	98.37%
Otolaryngology	631,279	621,921	98.52%
Other (61 Specialties)	66,671,386	66,640,169	99.95%
Total	**73,047,504**	**72,544,090**	**99.31%**

VHA OPES later noted that due to the unique nature of their care delivery model, residents and fellows are more frequently utilized to perform these assist roles than physicians and APPs when compared to other health care systems, and provided additional detail containing the number of procedures completed in FY14 with a second physician serving as an assistant in surgery. Because residents and fellows are not assigned their own wRVU credit, and in the private sector, do not bill CMS for their services, VHA OPES conveyed that the Assessment G methodology utilized may over-represent the number of physician-performed surgical assists, which could lead to over-discounting of relative work value units for these surgical services may "over-discount" the true productivity of VHA providers. Of specific attention was the fact that Assessment Team G methodology resulted in a reduction of 22.9 percent of wRVUs for Thoracic Surgery, 16.7 percent for Neurological Surgery, and 11.8 percent for Orthopedic Surgery. VHA's internal methodology (based on stop codes) estimated that the wRVU discount applied to these service lines should instead be 5.9 percent, 1.5 percent, and 1.6 percent, respectively.

The Assessment G team applied these new discounts to the original wRVU data to determine the impact on our findings. Overall, the adjustments did not materially affect the findings or recommendations put forth in this report. We estimate that the average productivity of physicians in the associated surgical service lines would increase by approximately 500-800

[251] Assessment G analysis which used CPT Detail FY14, provided by VHA OPES, March 5, 2015.

wRVUs per year per Worked cFTE. However, the benchmarked percent ranks of these updated productivity figures would still fall below 27th percentile in both the MGMA and AMGMA comparison sets for all three specialties, with many falling in the 15th percentile rank and below. In all three specialties, average productivity per clinical FTE would result between 47 percent and 62 percent of MGMA or AMGMA medians. Details for the three specialties can be found in Table B-7.

Table B-7. Comparison of assessment G productivity benchmark methodology and application of OPES suggested methodology for benchmarking[252]

Specialty	Original wRVU Productivity Calculation	New wRVU Productivity Calculation	MGMA wRVU Median	Original MGMA Percent Rank	New MGMA Percent Rank	AMGMA Median	Original AMGMA Percent Rank	New AMGMA Percent Rank
Thoracic Surgery	3,629	4,428	7,121	14%	15%	8,156	10%	26%
Neurological Surgery	4,002	4,731	9,368	10%	14%	9,977	10%	15%
Orthopedic Surgery	4,385	4,894	8,241	10%	13%	8,384	14%	23%

VHA OPES also provided the Assessment G team with additional discount estimates for all specialties. While Assessment Team G acknowledges that the original methodology may over represent surgical assists by physicians, we determined that re-running all of the analysis to adjust for these discount factors would not result in material changes. This is based on the fact that the remaining specialties were not originally discounted to the same degree as the three surgical specialties outlined above (with many specialties not being discounted at all), and consequently the variances in discount percentages were not significant. Any changes in percent ranks compared to benchmarks would thus be minimal.

Application of Gap and Imputed Codes

VHA developed a series of CPT® codes to capture clinical work effort not otherwise captured or quantified by CMS. Furthermore, VHA engaged Cambridge Health Economics Group, a private firm that was acquired by Ingenix (now Optum) to calculate and establish RVU values for these GAP codes and utilize these codes in assessing provider productivity. Additionally, OPES has developed a wRVU value for Compensation and Pension (C&P) examinations, and selected Autopsy CPT® codes which are not weighted by CMS. OPES assigns a level 3 Office Consultation wRVU value of 1.88 for CPT® Codes 99455 and 99456-Disability Examinations (C&P) which currently have a CMS wRVU= 0.00. The Autopsy weights were developed by the VHA Pathology

[252] Analysis of Assessment G Benchmarking Exercise and Information provided by VHA OPES, Choice Act 201G Section – Data Validation Follow-Up, OPES Deliverables from Conference Call, July 27, 2015

Productivity Workgroup and are based on a study conducted by the Autopsy Committee of the College of American Pathologists (Accounting for the Professional Work of Pathologists Performing Autopsies, John H. Sinard, MD, PhD, for the Autopsy Committee of the College of American Pathologists, Arch Pathol Lab Med—Vol 137, February 2013, Autopsy RVUs—Sinard et al). The utilization of these GAP codes yield a net 2.4 percent variation to overall productivity with specialty specific breakdowns as follows in Figure B-4:

Figure B-4. CMS gap imputed, total, and gap imputed percent[253]

Specialty	CMS RVUw	Gap RVUw	Total	Gap %
Internal Medicine	8,440,368	263,225	8,703,594	3.02%
Psychology	6,147,099	255,782	6,402,880	3.99%
Psychiatry	6,096,483	43,999	6,140,481	0.72%
Radiology	3,363,881	63,455	3,427,337	1.85%
Optometry	2,728,225	29,317	2,757,541	1.06%
Family Practice	2,203,837	65,616	2,269,453	2.89%
Ophthalmology	2,029,684	9,931	2,039,615	0.49%
Gastroenterology	1,975,685	9,969	1,985,654	0.50%
Emergency Medicine	1,680,289	6,332	1,686,622	0.38%
Cardiovascular Disease	1,647,470	21,519	1,668,989	1.29%
Surgery	1,350,152	54,710	1,404,862	3.89%
Podiatry	1,355,448	3,197	1,358,644	0.24%
Pathology	1,083,682	178,243	1,261,925	14.12%
Orthopaedic Surgery	1,190,184	6,829	1,197,013	0.57%
Urology	1,069,616	4,181	1,073,797	0.39%
Neurology	923,032	40,648	963,680	4.22%
Other (55 Specialties)	11,155,816	266,896	11,422,713	2.34%
Total	**54,440,950**	**1,323,848**	**55,764,798**	**2.37%**

[253] Assessment G analysis which used CPT Detail FY14, provided by VHA OPES, March 5, 2015.

Although benchmark comparison generally excludes the use of Gap codes, we elected to utilize the appropriate values assigned by Ingenix in our data set given the unique care models required to support Veterans, nature of the services performed and lack of an alternative.

The Assessment G team believes that through utilization of the OPES business rules in addition to the approach to accounting for the lack of modifiers, the benchmarking data is comparable to the VHA data set.

B.2.5.4 Approach

Below we describe our approach to making productivity comparisons for primary care, specialty care, and dental.

Primary Care – Panel Size

For primary care providers, we measured productivity by comparing panel sizes to industry benchmarks from Kaiser Permanente Medical Group Northern California (average),[254] MGMA 2014 Compensation and Production Survey (median), and American Medical Group Association (AMGA) 2014 Medical Group Compensation and Financial Survey (median).

VHA targeted panel sizes of 1200 and 900 (for physicians and APPs respectively) are outlined by VHA Handbook 1101.02,[255] assuming optimal staffing and resource levels. It is noted that actual panel sizes may fluctuate. The calculated VHA average panel size (inclusive of APPs and Physicians) was estimated by taking VHA-provided average panel sizes per "Sta6" facility and calculating a weighted average based on total unique patients.

Our team calculated "ideal" panel size based on an equation published by the American Academy of Family Physicians. For VHA panel size, we used the average panel size by VISN as a means for comparison. The equation is: panel size × visits per patient per year (demand) = provider visits per day × provider days per year (supply).[256] The equation solves for the ideal panel size based on the provider's historical level of productivity. For the purposes of aligning to the general VA demographic, the Assessment G team applied an adjustment for males aged 60 to 64 (based on VA median age and sex). The Assessment G team made an additional adjustment to the 'provider visits per day'. VHA providers are expected to see between 10 and 12 patients per day[257] but based on literature review, the ideal number in a typical setting is

[254] As reported on site visit to Kaiser Permanente Medical Group Northern California on April 22, 2015.

[255] U.S. Department of Veterans Affairs. (2009). *VHA Handbook. PCMM*. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2017

[256] Murray, M.D, Davies, M. & Boushon, B. (2007). Panel Size: How Many Patients Can One Doctor Manage? *Fam Pract Manag*.2007; 14(4); 44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html#fpm20070400p44-bt2.

[257] Based on Assessment G site visit data gathered from primary care providers on 24 site visits

approximately 15 patients per day.[258]

Calculation:

2.38 *(current VHA primary care outpatient visits per year[259])* ***x 1.17*** *(AAFP adjustment factor based on VHA paneled member age and sex)[260]* = ***2.78*** *(calculated adjusted VHA visits per patient per year)*

The Assessment G team validated panel sizes using benchmarks published in the *Annals of Family Medicine* which provide insight into four models of care for primary care, dependent upon delegation of tasks to various non-physician members of a primary care team. The critical input of delegation assumptions estimates panel sizes ranging from 983 to 1,947, breaking out delegation tasks between preventive care, chronic care, and acute care.[261] It recommends that the low-overhead Ideal Medical Practice have somewhat larger panel sizes (than a concierge medical practice with panel sizes of 200 to 600) but typically fewer than 1,000 patients. According to the analysis, with an assumption of 2,025 work hours per year per primary care physician and an age-sex distribution of the patient panel similar to an analysis of the Duke University health system (0.71 hours, 0.99 hours, and 0.36 hours, respectively, for a total of 2.06 hours of service per year per patient), yields a physician ability to care for a patient panel of 983 patients under a non-delegated primary care model. With the most ambitious assumption about the degree of delegation possible, a physician could reasonably care for a panel of 1,947 patients.[262]

Primary Care – Panel Size Actuals, Maximum, and Modeled

In addition to comparing primary care panel sizes externally to benchmarks, the Assessment G team completed an internal analysis examining the PCMM computed DivisionModeled Capacity panel sizes assigned to providers at the facility level and compared that target to both actual panel sizes per provider and the facility-assigned maximum panel size targets. To do this, team G leveraged data provided by VHA's office of Primary Care via the Office of Productivity, Efficiency, and Staffing. OPES provided Assessment G the Modeled Division Capacity PCMM output for all facilities at the Sta6a level for September 2014 as well as a file containing actual and facility determined maximums at the provider level, by month. Data field and definitions are outlined below:

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[258] Altschuler, J., Margolius, D., Bodenheimer, T., Grumbach, K., (2012). Estimating a Reasonable Patient Panel Size for Primary Care Physicians with Team-Based Task Delegation. *Annals of Family Medicine*. Retrieved from http://www.annfammed.org/content/10/5/396.full.pdf+html

[259] U.S. Department of Veterans Affairs Veterans Health Administration. (2013). VHA Facility Quality and Safety Report Fiscal Year 2012 Data. Retrieved from http://www.va.gov/HEALTH/docs/2013QSExecutiveSummary.pdf

[260] Murray, M.D, Davies, M. & Boushon, B. (2007). Panel Size: How Many Patients Can One Doctor Manage? *Fam Pract Manag*.2007; 14(4); 44-51. Retrieved from http://www.aafp.org/fpm/2007/0400/p44.html#fpm20070400p44-bt2

[261] Altschuler, J., Margolius, D., Bodenheimer, T., & Grumbach, K., (2012). Estimating a Reasonable Patient Panel Size for Primary Care Physicians with Team-Based Task Delegation. *Annals of Family Medicine*. Retrieved from http://www.annfammed.org/content/10/5/396.full.pdf+html

[262] Ibid.

Table B-8. Data fields and definitions for primary care [263]

Data Field	Definition
FY	Fiscal Year (FY14)
FP	Fiscal Period starting with 1 = October and 12 = September
ProvCat	Designation of the category of provider either as a physician or a non-physician licensed provider acting as a primary care provider (APP).
TeamType	The type of special population the primary care team addresses. There are eight team types: General Primary Care, Home Based Primary Care, Women's Health, HIV Clinic, Post-Deployment Care, Renal/Dialysis, Geriatric Primary Care, Spinal Cord.
FTESummed	The amount of FTE that the individual provider was mapped to work in his/her primary care role and recorded in VISTA Legacy PCMM application. Because a provider can have more than one PCM Team, the amount of the individual's FTE would need to be summed. The FTE is manually entered into PCMM and is not pulled from DSS labor mapping.
PanelCountSummed	The number of patients actually assigned to a provider on the last day of the fiscal period. Because a provider can have more than one PCMM Teams, the amount of assignments to all teams is summed to a single record for the individual provider.
MaxCapacity	The numerical value entered in PCMM that represents the maximum number of patients that the team position for the primary care provider can have assigned to it. It is summed by ProvSSN and Fiscal Period same as the FTE and PanelCount.
ModeledCapacity	The number of patients modeled to a panel size for a particular facility at the Sta6n level via PCMM. Target for 1.0 FTE MD is 1200, and 1.0 APP is 900. This is then adjusted up or down based on various factors, specifically the number of exam rooms, support staff, and division intensity.
ProviderID	Unique identifier for the provider. OPES completed de-identification of "ProviderID" to allow link with other files provided for the assessment. One provider can have multiple records if assigned more than one panel team type.

[263] Data Definitions sourced from Data Definitions – Provider Panel Size Data (version 3), Primary Care Data Sets to Choice Act 201 MITRE Teams, provided by VHA OPES, August 4, 2015

In order to keep data fields consistent and ensure an accurate comparison between actual panel sizes and division modeled capacity targets, our team limited the scope of the provider actual and maximum data to Fiscal Period (FP) 12 of Financial Year 14 (FY14), which corresponded to September of 2014. The filtered data included actual panel sizes at the provider level of detail, with flags for Physicians and APPs in addition to the separation of General Primary Care panels and Special Population Care Panels via the "Team Type" field. All providers are mapped to Sta3n and Sta6a levels.

Actual panel sizes, Total FTEs (which were self-reported FTE figures provided by the Office of Primary Care), and 'Maximum Capacity' size targets were rolled up to the Sta3n level of detail. Actual Panel sizes per 1.0 FTE were then calculated by taking the sum of all providers Actual Panels and dividing by the Sum of Total FTEs for each Sta3n. This calculation was completed for both MDs and APPs separately, for each of the 8 "Team Types" represented in the data set.

Similarly, the facility-set 'Maximum Capacity' was summed up the Sta3n level, and divided by the Sum of Total FTEs to set the Maximum Capacity per 1.0 Total FTE for MDs and APPs for each Team Type.

'Modeled Capacity' was the only figure not available at the provider level. Modeled capacity is a measure that remains at the Sta6a level of detail by Central Office. In order to compare actual panel sizes to PCMM division modeled capacity, our team calculated a weighted average for the Sta3n by weighing each Sta3n modeled capacity figure by the number of Total FTEs in each subsidiary Sta6n to their parent Sta3n. Our output was the weighted average Modeled Capacity for each 1.0 MD FTE for General Primary Care panels. To calculate APP Modeled Capacity, the team applied a 25 percent discount per VHA OPES guidance to account for APPs.

To estimate Modeled Capacity for the Women's Health panel teams, Assessment Team G referred to Directive 1330.01 which stipulates that any designated Women's Health panel be discounted by 20 percent of the number of women on the panel. To be considered a Women's Health panel, at least 10 percent of the panel must consist of female patients. While not provided the actual number of females on each panel, the team estimated that the minimum 10 percent of total modeled panel size was composed of women, considering only 6percent of all patients are female. The net result was that each modeled panel size was discounted by approximately 2 percent to account for this adjustment. For APPs assigned to a Women's Health panel, this figure was then discounted 25 percent further.

Modeled Capacity was set at 250 for Home-Based healthcare based on Directive 1140.07, with APPs Modeled Capacity set at 75 percent of that (187.5). Modeled Division Capacity was not calculated for the other Specialty PACTs due to the lack of specific inputs and calculations provided by VACO, as facilities are given leeway to set these panel sizes for their special populations.

In the main body of the report, Assessment G reported aggregate statistics relating to the analysis of Primary Care panels. Our team limited our aggregate findings specifically to General Practice Primary Care Physicians. Specifically, our team's actual and maximum panel size are the sum of the actual and maximum panels of General Practice Primary Care Physicians divide by the General Practice Primary Care Physicians FTE sum. The national modeled panel size is the

mean of the modeled capacity by facility. The standard deviation is calculated through the variance of the actual, maximum and modeled panel size for General Practice Primary Care Physicians by facility. The percentage break downs of each team type of panel is calculated by Physician FTE assigned to each.

Specialty Care Productivity – Encounters and wRVUs

For specialties other than primary care, we measured productivity using both encounters and wRVUs. The approach to these analyses is detailed below. Of note, the detail in the Appendix (Section A.2), which includes facility encounter and wRVU production, does include primary care providers. The specialty benchmarking in the productivity section of the document, however, does not include primary care providers.

Work RVU and Encounter Productivity Comparison

Work RVU values within VHA are calculated utilizing both CMS wRVU values for all services included within the CMS wRVU weighting schedule for 2013/2014 and additional homegrown codes called "imputed/gap" codes. These codes provide wRVU credit for clinical activity that is not otherwise captured and reimbursed under the CMS wRVU schedule. Each provider has an aggregate wRVU value based on his/her entire clinical work product, regardless of clinical work environment, for the fiscal year. The Assessment G team compared this wRVU amount to the three benchmark data sets (AMGMA, MGMA, AMGA), based upon the adjusted Worked cFTE. Each specialty and facility were compared in aggregate (to benchmarks) as well as by provider. As part of this comparison, our team calculated (described below) internal percentile ranks or benchmarks, comparing the productivity (either by wRVU or encounter) to other VHA specialties. To calculate the productivity of providers in the VHA data set, we:

1. Matched the VHA OPES Productivity Data File to cross-reference files provided by OPES (included within Data Definitions documents presented along with the data files) to determine Facilities, VISNs, and Complexity levels.
6. Removed duplication issues that occurred in the VHA OPES Productivity Data File when FTE information was compiled from the labor data. The VHA OPES Productivity Data File was delivered with the duplication issues stated above.
7. Matched Labor Detail Files, Productivity Files and CPT® Detail Files (as provided via the VHA OPES CPT® Details Data File). The CPT® Detail file enabled our team to map to the VHA OPES Productivity Data File, which enabled all the CPT® related activity to be analyzed, by provider.
8. Validated clinical FTE levels of all providers and summarized them at the Aggregate Specialty Level, for comparison to a Summary Report from VHA ProClarity Productivity Cubes. This validation was also performed for the Administrative, Research, and Teaching FTE summaries.
9. Additional clinical FTE validations were done at the VISN and STA3N levels. All validations were within a tolerance of 3 percent, indicating that the VHA OPES

Productivity Data File FTE information closely correlated with the FTE information within the Summary Report.

10. Validated wRVUs from the VHA OPES Productivity Data File by matching CPT® codes and comparing the reported wRVU amounts to CMS wRVU amounts for the appropriate years. This validation was performed by linking the VHA OPES Productivity Data File to the VHA OPES CPT® Details Data File.
11. Applied modifier adjustments to the data set by modeling CPT® and Modifier level CMS data, using approach described in prior section.
12. Applied leave factors to the Productivity data by matching the productivity data to the labor data by physician and then compiling leave factor percentages. This allowed FTE values to be converted from the Worked values reported within the VHA OPES Productivity Data File to Paid values which were used for other purposes outlined within this appendix.
13. Calculated Internal Benchmarks for all levels of analysis, including Complexity Level and Specialty. Internal Benchmarks include 25th Percentile, Median, 75th Percentile, Mean, and Standard Deviation. These Internal Benchmarks were created for both wRVU productivity and Encounter Productivity measurements.
14. Calculated Percentile Rankings at provider levels and all aggregate levels (including Facility, Complexity and Specialty) of analysis. Percentile Rankings were calculated for MGMA and MGMA Academic 2014 benchmarks. These Percentile Rankings were created for both wRVU productivity and Encounter Productivity measurements. (Reference to Figures 2-11 and 2-12).
15. Applied reference files (from the Data Definitions document provided by OPES) to the source data to flag Primary Care Physicians, Associate Providers and to create Specialties for Associate Providers.
16. Produced Data Marts with all variations of data and calculations (by complexity, facility, specialty, aggregate specialty) mentioned above at Primary Care, Specialty Care and All Care levels.

In instances where our team graphically displayed wRVU and encounters, we summed either wRVUs or encounters up the level of aggregation. For example, total encounters in the aggregate are presented in Section 2.3.6.4. The Assessment G team did not modify the VHA encounter data to exclude telephone encounters; The MGMA 2014 survey specifically includes telehealth and e-consults in its definition of encounters, whereas the Academic MGMA (AMGMA) survey definition has not yet been updated and consequently there is a potential margin of error with the benchmark finding, when compared to the AMGMA survey.

Figure 2-17 depicts the sum of encounters after our team mapped encounters at the specialty level to the major specialty grouping. In instances where percentile rank was depicted in aggregated form (Figure 2-11 and Figure 2-12), percentile rankings were recalculated at the major specialty grouping level and the MGMA and AMGMA benchmarks were mapped to the major specialty grouping level using weighted averages.

Encounter Methodology

The VHA OPES Productivity Data File was provided with encounter measures. There were two fields that contained encounter information ([NumEncountersRVU] and [NumEncountersNoRVU]).These fields provided encounter totals by physician for FY2014. By combining these two fields for each provider, total encounters were calculated. OPES provided these fields to allow us to distinguish between CMS wRVU and Non-CMS wRVU activity. However our team ultimately used a CPT® Details file provided by OPES to accomplish this task. Our team used the calculated total encounters (as aforementioned) to key our productivity measurements.

OPES did not provide our team any further means to validate encounter totals. We ensured that encounters aggregated by employing the same methodology as FTEs and wRVUs (which did tie to OPES validation reports). No adjustments (such as modifier adjustments used for wRVUs) were made to encounter totals from the point of delivery until the final analysis point. For MGMA and AMGMA benchmarking purposes, total encounters were divided by adjusted cFTEs (as described above) to provide a normalized basis for measuring productivity.

Encounters were compared to both MGMA and AMGMA benchmarks. It should be noted that while MGMA has updated the encounter definition in its Physician Compensation and Production Survey to include Telehealth and e-consults in its most recent survey (2014), MGMA has not updated its definition as such in its Academic Practice Compensation and Production Survey (AMGMA). Our team was unable to distinguish Telehealth and e-consults in the encounter data set as CPT® level detail was not included. As such, we were unable to adjust when comparing to AMGMA. Telehealth and e-consults may cause VHA providers to appear more productive (when using encounters) relative to the AMGMA benchmark, although the size of this impact is unknown.

The other steps for compiling encounter information are contained within the "Work RVU and Encounter Productivity Comparison" section above.

Please note that from the data provided, our team was not able to distinguish which CPT® codes were related to [NumEncountersRVU] and which were related to [NumEncountersNoRVU].

Comparison of High and Low Complexity

Using the approach detailed above under “Work RVU and Encounter Productivity Comparison,” our team analyzed the internal and external productivity benchmarks at a variety of levels. In Figure 2-18, our team highlighted a three specialties at the most complex (1A) and least complex (3) facility levels. Our team ranked each aggregate specialty by productivity as calculated by wRVU (as opposed to encounter) and displayed provider count, total FTE and encounters for reference.

Dental Productivity Analysis

Using the same Dental Hourly and Productivity Data File and the 2010 ADA Survey of Dental Practice: Characteristics of Dentists in Private Practice and their Patients files, our team

analyzed dental productivity by analyzing visits per provider. Dental data was sorted by per site visits which included the Worked FTE totals and number of visits. The patients' visits per provider per year were summed to the dental specialty level. Our team summed all provider visits within each specialty and divided all visits by the number of clinical FTE per specialty to determine the visits per provider. We then calculated the average patient visits per clinical FTE by dental specialty and compared these to the ADA benchmarks.

Productivity and Access Analysis

Our team analyzed the relationship of productivity and access by plotting the productivity (measured using wRVUs) against the proportion of patients able to obtain an appointment within 30 days of requesting it. In our case study, facilities of different complexity were identified by color. The wait time data was obtained from FY14 SPARQ report data and compared to our internal productivity calculation described above. Because each facility had its access value, no aggregation or calculation was performed on the access data. As previously described, the productivity calculation required the aggregation of wRVUs and cFTEs by facility. In Figure 2-20 Productivity versus Access Analysis – Cardiology, each dot represents a facility and the color of each dot represents a facility of a particular complexity level.

Unlike the productivity data, our team did not receive scheduling data and was unable to validate the access data. Our team understands there are several issues regarding the accuracy of the FY14 access data. We did not validate the accuracy, nor do we present this data as a means to draw conclusive findings; rather, we present it to illustrate the importance of considering access in conjunction with productivity.

Space and Support Staff Ratio Analyses

Assessment G included preliminary findings on space and support staff from a separate study conducted in 2015 for VHA assessing the ratio of providers to rooms and support staff for a sample of specialty outpatient clinics at 48 medical centers across the country, with varying complexity levels. This data was collected on behalf of VHA Office of Specialty Care Services, by Grant Thornton and is currently in draft form. In reporting space ratios by aggregate specialty, Grant Thornton received space quantities from nurse managers at the visited facilities and physically confirmed the space quantities. The ratio considers the number of physicians, APPs, residents and fellows that each specialty clinic reported as having against the number of rooms. The total number of providers (physician, APP, fellow, resident) for each specialty was divided by the total room quantities. The full analysis also reports these space ratios at the facility level and up to the complexity level.

In reporting support staff quantities, Grant Thornton interviewed nurse managers at the selected facilities and inquired about the levels of dedicated staff at that clinic. The site visit teams confirmed the quantity of dedicated support staff they observed on that day. The ratio considers LPNs, RNs, Clerks, Technicians, occupational therapists, and PTs as support staff and physicians and APPs as providers. We also present administrative and clinical support staff separately. The site visit teams specifically asked for dedicated support staff as delineated from shared support staff. The ratios were calculated as the total dedicated support staff divided by

the total providers for each specialty. The full analysis also reports these support staff ratios at the facility level and up to the complexity level.

B.2.6 Non-clinical provider time

Section 201(G) of the Veterans Choice Act requests an assessment of "…the time spent by such health care provider on matters other than the case load of such health care provider, including time spent by such health care provider as follows:

(I) At a medical facility that is affiliated with the department
(II) Conducting research
(III) Training or supervising other health care professionals of the Department."

In response, we used data from VHA's cost accounting system, DSS, which is maintained by the MCAO, to report non-clinical provider time. DSS is a managerial workload and cost accounting system that connects labor hours to activity to estimate the cost of providing services. Labor mapping is the method by which labor hours, and the associated labor costs, are assigned to ALBCCs. All physician, APP and dentist time is allocated to ALBCCs classified as Direct Patient Care, Indirect Administration, Research, or Education. Local DSS teams at VAMCs provide self-reported labor mapping data into DSS. We use this data to report the research and training/supervision time.

VHA does not keep central data on the time which VHA providers (who also have appointments at affiliate institutions) spend at those institutions, as these providers are generally paid by the affiliates during this time. In the absence of such data, the Assessment G team surveyed the facilities which it conducted site visits to. We selected one facility as an example to analyze and present this facility as a case study.

B.2.6.1 Definition

Labor Mapping: The method by which VHA labor hours, and the associated labor costs, are assigned to an ALBCC. Each ALBCC is broken into one of the following categories: direct patient care, administration, research, or education. In accordance with VHA Directive 2011-009,[264] those are defined as:

> Direct Patient Care time: time to prepare, to provide for, and follow-up on the clinical care needs of patients and includes: time spent in reviewing patient data, consulting about patient care with colleagues, reviewing medical literature, contacting the patient or caregivers to discuss their needs, and the labor hours provided by a physician or dentist who is supervising house staff residents providing care in a clinical setting.
>
> Administration time: Administrative time includes time spent on managerial or administrative duties, generally at the level of the department, service, medical facility, VISN, or nationally, both within and outside VHA. This time for professional staff is

[264] U.S. Department of Veterans Affairs Health Administration (2011) VHA Directive 2011-009 Physician and Dentist Labor Mapping. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2384

allocated as administrative time. Administration examples are time spent: in support of service-wide administrative activities, such as completing performance reviews, and medical center and VA Central Office reporting requirements; managing a program within a clinical department, service, or hospital; working on service or hospital-wide committees; and serving on state and national committees, advisory boards, or professional societies.

Education time: Education is defined as time spent providing formal training (didactic education). This includes preparation as well as actual classroom or lecture time for educators or presenters. Examples of education time spent are giving conferences in the community or nationally; in a classroom teaching medical school curriculum; in a classroom teaching residents and fellows; in managing a resident, fellow, or other type of student teaching program; and working on medical school committees.

Research time: Research time is defined as time spent performing formal, approved health care research, or in activities in direct support of approved research. Formal, approved research is research that is approved through the hospital's research review process. Support activities include time spent by the investigator in direct support of research activities. Research can be laboratory, clinical, or health services research. However, direct VHA patient care research time must be mapped as direct patient care time when workload is recorded in VistA as an encounter. Examples of Research time spent are working on research projects that have been approved by the local VA medical center Research and Development Committee which does not produce recorded patient care encounter workload in VistA; working in an actual research laboratory or in a controlled setting that involves no direct patient care or treatment; serving on hospital or affiliate research committees; supervising a student's, resident's, or fellow's non-clinical research; writing for publications or grants; attending meetings explicitly related to research activities; presenting papers at research meetings; and sitting on a national study section or grant approving board.

Affiliate: An affiliate refers to an institution with which a VAMC has an affiliation with. Per VHA Directive 2004-066,[265] an affiliation is a relationship between VHA and an educational institution or other health care facility for the purposes of enhanced patient care and education. It may also involve research. VHA and the affiliated educational institution have a shared responsibility for the academic enterprise.

Non-Clinical Time: For purposes of this assessment, this is reported as the overall portion of time VHA providers have labor mapped to all ALBCCs other than direct patient care (administration, research, and education). This includes only working time; it does not include paid time off. It should be noted that there is "non-productive" (non-workload generating) time captured in these ALBCCs; as such, the Assessment G team also qualitatively assessed factors that impact productivity.

[265] U.S. Department of Veterans Affairs Health Department. (2004) VHA Directive 2004-066 Education Affiliation Agreements. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=1198

Time spent at a medical facility that is affiliated with the Department: For purposes of this study, this is reported as the average portion of an FTE that each part time VA provider, from the sampled facility, who has a dual appointment with an affiliate, represents. This data is not statistically significant and therefore not generalizable to the VA provider population.

Time spent conducting research: For purposes of this study, this is reported as the overall portion of that providers have labor mapped to research ALBCCs.

Time spent training or supervising other health care professionals of the Department: For purposes of this study, this is reported as the overall portion of time that providers have clinical time labor mapped to an ALBCC that is designated as education (meaning oversight of residents). While there is a comprehensive and quantitative way to determine provider time spent performing clinical, educational, research and administrative tasks (as defined by VHA), it is difficult to directly calculate the time spent by each provider "training or supervising other health care professionals of the department." According to the Accreditation Council for Graduate Medical Education (ACGME), clinical supervision is defined as "a required faculty activity involving the oversight and direction of patient care activities that are provided by residents/fellows."[266] For the purposes of this assessment, we have assumed this definition of supervision, and have analyzed provider time dedicated to overseeing residents and trainees in clinic, which would be considered part of direct patient care time per VHA's definition.

B.2.6.2 Data Sources

To calculate other non-clinical time, the Assessment G team used the labor mapping data provided by FTE, which is described in the Staffing Levels Methodology section.

B.2.6.3 Assumptions and limitations

One limitation is that the patient care ALBCC time includes several non-workload generating (non-productive) hours which are not spent directly with a patient, such as time completing patient documentation or following up with the laboratory or diagnostics unit for test results. As such, this time cannot be quantified.

The accuracy of VHA's labor mapping and person classification codes (taxonomy), data is currently under study by VHA's Office of Specialty Care Services. This assessment did not study the accuracy of the data and cannot comment on the quality or accuracy of it.

B.2.6.4 Approach

To calculate time allocation proportions, the Assessment G team did the following:

[266] Accreditation Council for Graduate Medical Education (2013). *Glossary of Terms*. Retrieved at https://acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/ab_ACGMEglossary.pdf

Clinical Time, Administration Time, Research Time, and Supervision Time:

1. From the VHA OPES Labor Mapping Data File, all ALBCCs were categorized into clinical, education, research, or administration categories based on extracting the production unit from the ALBCC. Hours were the basis for these categories.
2. From the VHA OPES Productivity Data File, the FTEs were provided, already split out into the categories listed above. The VHA OPES Productivity Data File FTE information was based on FTEs (not hours).
3. For auditing purposes, the information from the VHA OPES Labor Mapping Data File was matched up to each physician in the VHA OPES Productivity Data File and the hours were converted to FTEs.
4. A basic validation was completed and the labor hours and classifications were determined to be closely correlating with the VHA OPES Productivity Data File FTE information.
5. The FTE Categories and FTE Totals were then multiplied by a leave factor (determined by provider, within the VHA OPES Labor Mapping Data File) to convert from Worked FTEs (as reported in the VHA OPES Productivity Data File) to Paid FTEs.
6. The Paid FTE categories and totals from the above step were then utilized for this time reporting process.

In Figure 2-32, our team calculated the percentage of clinical physician and APP (provider) time out of total paid FTE. The reference line addresses the average of all percentages across the aggregate specialties. Similarly, our team also calculated time devoted to education and research using the same approach as used for clinical time reporting. However, rather than reporting up to the aggregate level, our team reported education findings at the major specialty grouping level (refers to Figure 2-33).

We also analyzed the percent of time spent training or supervising other health care professionals. This analysis is outlined in Figure 2-36. To calculate this metric, our team used the VHA OPES Labor Mapping Data File to identify ALBCCs ending with an “ED” suffix. The suffix indicates a provider is training or supervising time of other health care professionals during direct patient care time. Our team compiled the worked hour totals of the ALBCCs with instances of the ED suffix. We sorted this category of paid hours by physician and location and mapped it to our VHA OPES Productivity Data File In applying this mapping, some clean-up of provider records, primarily relating to duplication was required. Once we had the paid hours corresponding to training or supervising other health care professionals, we divided them by 2080 as our data sets are for a year to determine the Oversight of Residents FTE. The Oversight of Residents per year was grouped into the major specialty groupings and divided by the total FTE for the major specialty groupings. The resulting percentages speak to the percentage of time devoted to the oversight of residents.

Medical Affiliate time:

Following a data call as part of our site visits, we reviewed files received from several sites which were requested to include de-identified paid dual appointees, and their fractional FTE at

VA as well as the affiliate. Upon doing so, it was determined that the data was not in an analyzable or comparable format for most sites. We identified one site, the Durham VAMC, with high quality data, and determined that we could instead use this data as a case study. For the case study, we followed these steps:

1. Converted FTE fractions into hours.
2. Summed hours for VA time.
3. Summed hours for affiliate time.
4. Calculated total hours in data set (sum of all hours).
5. Calculated proportion of VA time and affiliate time, by dividing VA hours by total hours, and affiliate hours by total hours.
6. Calculated total FTE at medical centers included in the data set, using staffing levels data set.
7. Calculated proportion of FTE that are dual appointees (divide VA hours by total hours for the medical centers included in the analysis).

B.2.7 Site Visit Methodology

The Assessment G team conducted site visits to VAMCs and CBOCs to identify VHA best practices, contributing factors and root causes of the differences between VHA provider staffing and productivity and the private sector. Specifically, the site visits addressed two of the five research questions for this assessment:

- If provider staffing and productivity levels differ from the private sector, what are the unique characteristics of VA and the patient population it serves that contribute to these differences?
- How does the unique mission of VA or other factors explain the time spent on activities other than direct patient care within a VA medical facility?

Seven site visits also addressed the supplemental more focused study of nursing staffing practices.

B.2.7.1 Site Visit Selection

VA medical facilities selected for site visits were identified using the following steps and resulted in a sample of 50 facilities:

1. A preliminary random stratification of inpatient facilities, with Veterans Integrated Service Network (VISN) as strata.
2. Random selection of VISNs performed thereafter to further reduce the sample size of the initial output.
3. Chi-square testing on each of the identified variables, in an effort to solidify an equitable distribution of sites to include VISN, urban vs. rural, adjusted admissions, VHA

complexity rating, adjusted length of stay, adjusted patient satisfaction, cumulative access score, and facility age.

4. A review of the subsequent list with internal and external subject matter experts.
5. The team further refined and balanced its site selection to 20 VAMCs, 7 CBOCs, and 2 Community Living Centers (CLCs) based on VHA's three complexity groups. (VHA classifies each medical center into a complexity level from 1A - most complex - to 3 - least complex, based on seven variables: number of patients; case-mix; intensive care unit level; referral center status, such as cardiac surgery center; research capacity; number of medical residents; and breadth of specialty training programs.)
6. We additionally selected seven VAMCs to conduct a more detailed review of nurse staffing practices. The selected facilities included two VA hospitals with Magnet recognition from the American Nurses Credentialing Center (ANCC). We identified these facilities based on a magnet-status, complexity grouping, and presence of inpatient nursing units that were included in the earlier GAO pilot study[267]OR, ED, SCI unit, and Med-Surg.). The purpose of these site visits was to understand best practices and challenges VHA has encountered in adopting VHA Directive 2010-034 Staffing Methodology for VHA Nursing Personnel.

B.2.7.2 Specialty Selection Methodology

The Assessment G team used VHA management reports of provider productivity from the Office of Productivity Efficiency and Staffing (OPES) to identify trends and outliers across each of the specialty groups (e.g., facilities with specialty groups that reported productivity, access, or allocation of provider time well outside VA national averages). Specialty groups identified as outliers were selected for interviews during site visits. Using this approach the Assessment G team interviewed service leaders and providers from highly productive specialties, low productivity specialties, specialties with good Veteran access to care, and poor Veteran access to care. Specialties were selected based on the following criteria and are listed in priority order:

1. (SPARQ) Score
2. Productivity (highest to lowest)
3. Unique Patient Volume (volume of unique patients, meaning the number of individual patients who visited that facility within the most recent fiscal year)

[267] Government Accountability Office. (2008). VA health care: Improved staffing methods and greater availability of alternate and flexible work schedules could enhance the recruitment and retention of inpatient nurses. (No. GAO-09-17). Washington, DC: Government Accountability Office. Retrieved from http://www.gao.gov/new.items/d0917.pdf

4. Percentage of All Patients Wait Between 0- 30 Days (proportion of patients who are able to obtain an appointment within 30 days of scheduling)

The number of selected specialties was determined by the facility complexity. For all Complexity 1 facilities, two specialties within each SPARQ score were chosen. Utilizing SPARQ and Capacity data, the Assessment G team selected the specialties and interviewed providers, Service Chiefs, and Administrative Officers. To obtain an understanding of the unique challenges and productivity drivers in a range of settings and resource arrangements, the Assessment G team randomly selected up to one specialty from each SPARQ quadrant (see Figure B-6 and Figure B-7) to obtain a comprehensive understanding of unique challenges and productivity drivers in a range of settings and resource arrangements, allowing the team to speak with optimized practices, under resourced practices, over resourced practices, etc. Collectively, the team sampled a sufficient number of specialties, as well as a sufficient number of optimized practices, potentially under resourced practices, potentially over staffed practices, and inefficient practices. Additional detail about the interview questions is in Appendix C.

Figure B-5. SPARQ quadrant

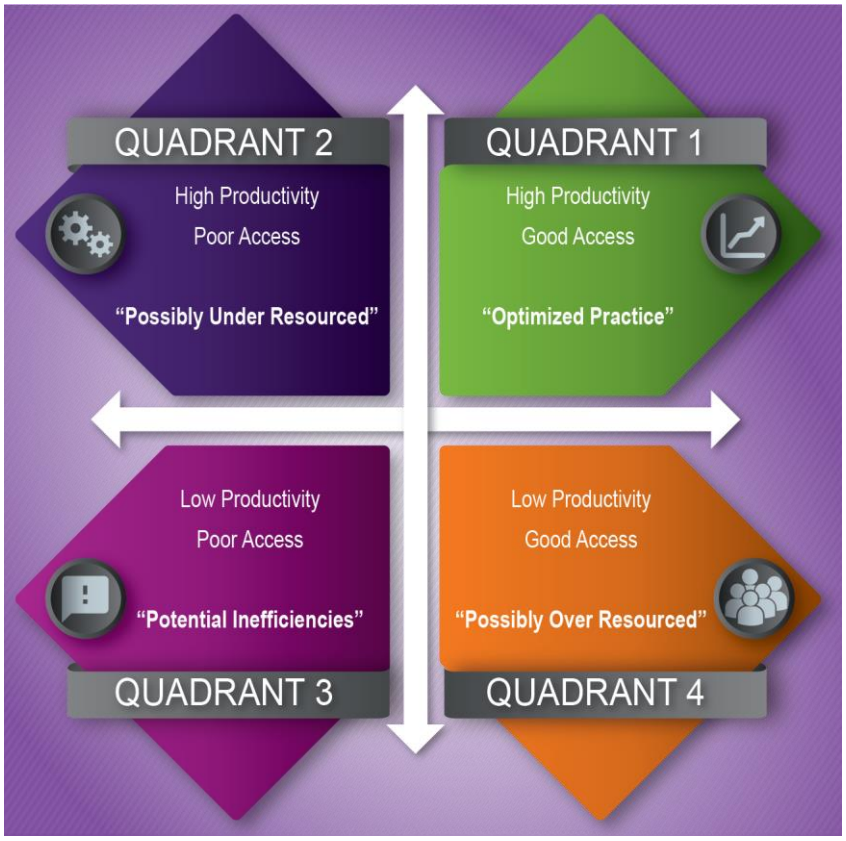


Figure B-6. SPARQ quadrant plot graph

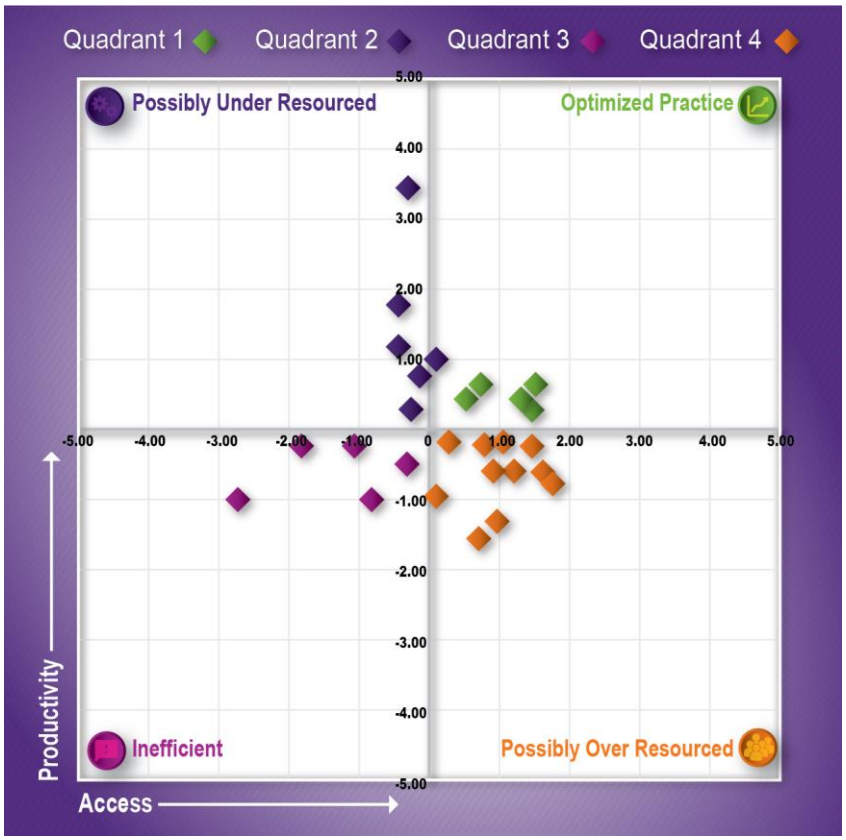


Figure B-7 shows the specialty providers interviewed at each site visit selected. Service leaders and providers from Mental Health, Primary Care, Dentistry, and Physical Medicine and Rehabilitation were interviewed at all VAMCs due to their unique care models and productivity measures.

Figure B-7. Specialty interviews chosen by facility complexity

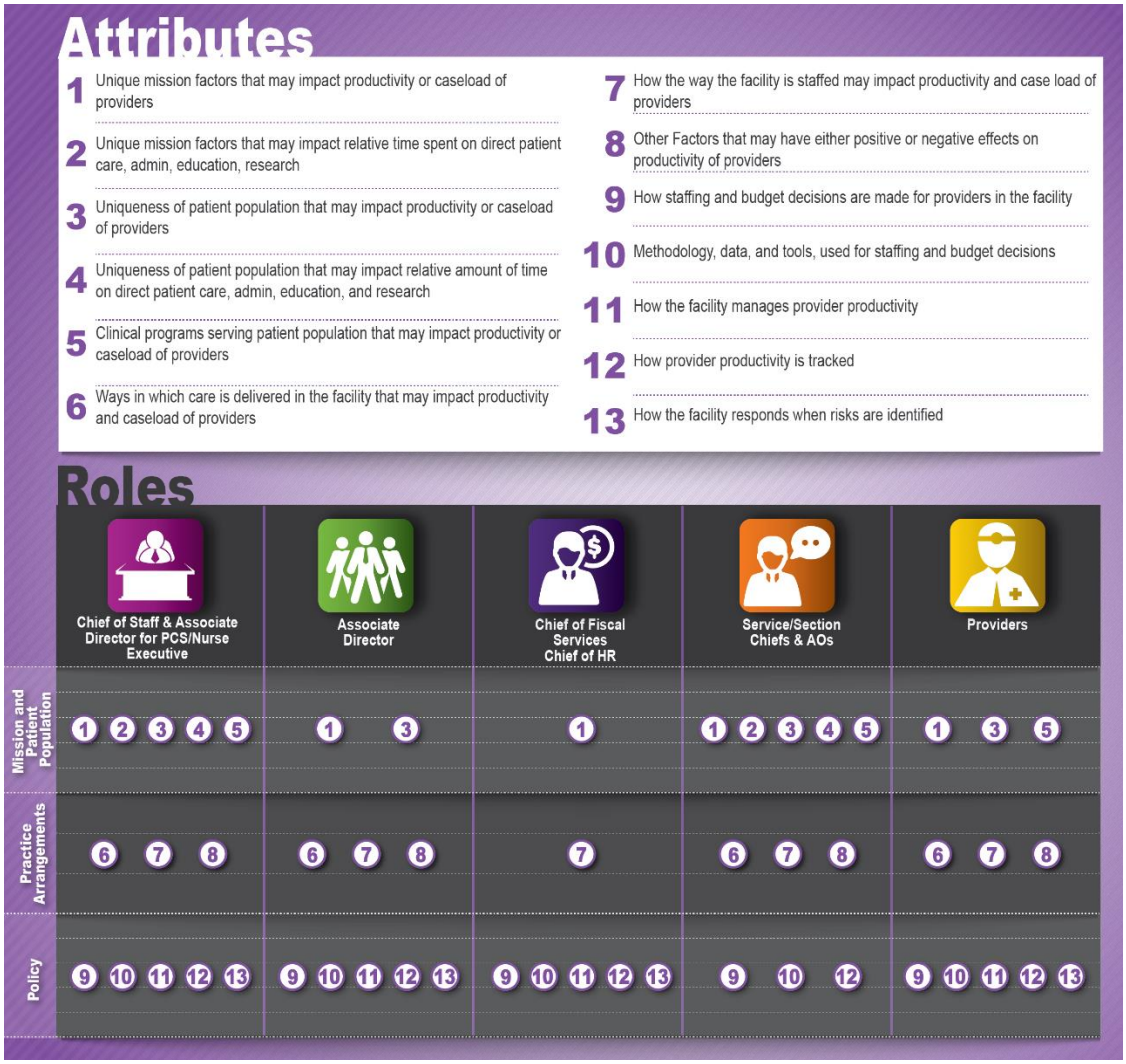
Site Visit Start Date	VISN	Official Station Name	Complexity	Core						Variable																											
				Surgery	*PM&R*	*Internal Medicine*	*Psychology*	*Psychiatry*	*Dentistry*	*Allergy and Immunology*	*Cardiology*	*Chiropractic*	*Critical Care*	*Dermatology*	*Emergency Medicine*	*Endocrinology*	*Gastroenterology*	*Hem/Onc*	*Nephrology*	*Neurology*	*Neurological Surgery*	*OB/GYN*	*Ophthalmology*	*Optometry*	*Orthopedic Surgery*	*Otolaryngology*	*Pathology*	*Pain Medicine*	*Podiatry*	*Plastic Surgery*	*Rheumatology*	*Thoracic Surgery*	*Urology*	*Vascular Surgery*
3-Feb	9	PILOT - Lexington VA	1c-High	✓	✓	✓	✓	✓	✓		✓								✓	✓													✓	
10-Feb	7	Central Alabama VA – Tuskegee	2 -Medium	✓	✓	✓	✓	✓	✓		✓								✓					✓				✓						
10-Feb	16	G. V. (Sonny) Montgomery VA	1b-High	✓	✓	✓	✓	✓	✓		✓			✓		✓	✓			✓						✓	✓				✓				
18-Feb	17	Central Texas VA – Olin E. Teague	1c-High	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓		✓										✓	✓	
18-Feb	8	Malcom Randall VA	1a-High	✓	✓	✓	✓	✓	✓		✓			✓		✓							✓		✓		✓			✓			✓	
3-Mar	22	Long Beach VA	1b-High	✓	✓	✓	✓	✓	✓		✓			✓		✓				✓					✓		✓			✓	✓			
10-Mar	18	New Mexico VA – Raymond G. Murphy	1a-High	✓	✓	✓	✓	✓	✓								✓	✓			✓				✓	✓		✓			✓	✓		
11-Mar	6	Durham VA	1a-High	✓	✓	✓	✓	✓	✓		✓							✓	✓	✓			✓		✓						✓		✓	
17-Mar	2	Canandaigua VA	3 -Low	✓	✓	✓	✓	✓	✓			✓								✓				✓	✓						✓			
25-Mar	1	Boston VA – Brockton	1a-High	✓	✓	✓	✓	✓	✓		✓			✓					✓	✓		✓				✓			✓		✓			
25-Mar	3	Northport VA	1c-High	✓	✓	✓	✓	✓	✓		✓		✓	✓				✓	✓	✓								✓						✓
31-Mar	4	Coatesville VA	3 -Low	✓	✓	✓	✓	✓	✓						✓						✓							✓				✓		
7-Apr	11	John D. Dingell VA	1b-High	✓	✓	✓	✓	✓	✓	✓			✓			✓		✓	✓			✓								✓				✓
14-Apr	19	Montana VA – Fort Harrison	2 -Medium	✓	✓	✓	✓	✓	✓			✓			✓										✓						✓			
21-Apr	12	Oscar G. Johnson VA	3 -Low	✓	✓	✓	✓	✓	✓									✓		✓				✓	✓									
21-Apr	23	Fargo VA	2 -Medium	✓	✓	✓	✓	✓	✓							✓	✓	✓										✓						
18-Apr	21	Palo Alto VA	1a-High	✓	✓	✓	✓	✓	✓				✓			✓					✓		✓					✓	✓	✓				✓

Source: SPARQ and Capacity for VISN23.xls provided by MITRE.
Site Visit Team assumes Productivity and Access metrics are accurate and complete for all VISNs. Specialties not reported in the SPARQ report (e.g. Specialties with a score of NULL) were excluded from the selection methodology above. Specialties are subject to change as additional data is reviewed.

B.2.7.3 Interview Framework and Strategy

The Assessment G team conducted role-based interviews at VA medical facilities with senior leadership, section chiefs, administrative officers, service chiefs, and providers. The framework for the interviews (See Figure B-8) covered a range of attributes organized into three domains (mission and patient population, practice arrangements, and policy). Interviews with senior leadership were used to understand mission-related factors, productivity drivers, and methods and management reports used to manage staffing and provider productivity across the facility. Interviews with section chiefs, administrative officers, service chiefs, and providers were used to understand unique mission-related factors, patient-related factors, and productivity drivers within their patient care environments. Interviews with senior leadership and other clinic leaders averaged 30 minutes. Interviews with providers averaged 10 minutes. Specific interview questions can be viewed in Appendix C.

Figure B-8. Assessment G site visit framework



In addition, our nursing practices focused study visited seven VAMCs to understand best practices and challenges VHA has encountered in adopting the VHA Directive 2010-034 nurse staffing methodology, and to identify other nurse staffing methodologies utilized in the inpatient and outpatient settings. Intended interviews at the VAMC facility level included the facility's Chief Financial Office, and the Chief Nursing Executive (CNE) or the Associate Director for Patient Care Services. Interviews for a sample of unit level management were conducted to discover the methodology used and how it was implemented for each nursing unit. Inpatient and outpatient unit level leadership were interviewed during the VAMC site visit.

B.2.7.4 Root Cause Analysis

The Assessment G team used the root cause analysis technique to introduce systems-based thinking into our analysis of potential factors that may explain the differences between VA provider productivity and the private sector. Root cause analysis is a rigorous, systematic approach widely used in health care settings and by The Joint Commission. It is used to develop an in-depth understanding of an issue, problem, or event being investigated and to reach those fundamental reasons why a problem or issue has occurred. It asks a series of "why" questions about a sequence of events or factors involved in a problem until the root causes and contributing factors are identified.

The Assessment G team used the interview results from the site visits to identify those factors that facility leaders and providers believed impacted (either positively or negatively) the productivity of providers. We analyzed the frequency with which these issues were raised by leaders and providers at facilities. We categorized these findings into best practices or potential causal areas to focus on in the root cause analysis. We used these findings to inform our initial understanding of the "who, what, where, how and why" of provider productivity gaps and to develop a preliminary fishbone diagram of the factors impacting provider productivity.

The Assessment G team used the potential causal areas and its preliminary fishbone diagram to identify additional questions to ask facility leaders and providers regarding possible contributing factors, examples and supporting evidence. The team used the "five whys" technique in facility interviews to check the team's logic, eliminate potential causes, refine its understanding of cause-effect relationships, and pinpoint potential root causes.

B.2.7.5 Site Visit Process and Procedures

Each site visit was conducted with the same processes and procedures. The Assessment G team followed pre, daily, and post site visit checklists to ensure that interviews were conducted in a consistent manner throughout the site visit. Interview documentation was uploaded to a SharePoint document platform during the site visit.

B.2.7.6 Pre-Visit Processes and Procedures

Site visits were coordinated through MITRE established channels and in accordance with MITRE site visit planning policies. Several documents, policies, and procedures were established to govern the planning and execution of site visits as part of the Grant Thornton independent assessment. The authoritative source for all site visit planning was the MITRE Veterans Choice

Act Collaboration site, Site Visits page. Documents at this site were continually updated to provide team members with the latest site visit guides and planning calendars.

B.2.7.7 Site Visit Execution

Site visit execution included onsite coordination, interviews, documentation, and debriefs with VAMC and MITRE point of contacts.

B.2.7.8 Post-Visit Distillation of Findings

At the end of each site visit week, the Assessment G team participated in a debrief meeting with MITRE site visit coordinators. This meeting discussed lessons learned and follow-up actions.

The Assessment G team used interview guides and a template to aggregate and categorize interview responses and examples.

Two specific questions were used for creating and indexing categories of potential causal factors. The following question was selected as a primary source for determining priority enablers and inhibitors for productivity and staffing: '*what three things would enable you to be more productive?'* The second question that was selected as a secondary source was: *'what other factors have either positive or negative effects on productivity compared to non-VA health systems?'* The interviewee's response to these questions were indexed into the categories listed in the figures below and subsequently marked with a numeric '+1' or '-1'; the numeric positive or negative sign indicates whether the identified category enabled the provider to be more productive (negative sign), or if the identified category was a current enabler of productivity (positive sign). Qualitative data was indexed to generate analytical categories linked to the private sector.

Grids were developed to track identified categories from each interview. These grids were delineated by management and providers, and were populated by facility, for each interviewee. Team debriefs that transpired for each site visit required a designated analyst to collate all findings for the respective visit, review the data for any inconsistencies, and subsequently finalize the category matrix. The designated analyst was responsible for complete oversight of the category matrix; centralizing this role minimize the number of touches and subjective impact on objective, qualitative findings. Lastly, a final count of each category across the site visit was totaled, in effort to determine trends across each site visit as well as in totality across all site visits. The embedded excel file shows the observational categories from management interviews and shows the observational categories from the provider interviews. Also included in the file are the aggregate results of the provider interviews.

ObservationalCategorieswithAggregateRes

Appendix C Interviews, Lists, Questions, Teams

Appendix C provides information surrounding Assessment G interviews, including stakeholder interviews, site visit interviews, and site visit teams. The following interviews were conducted between the dates of December 30, 2014 – May 13, 2015 to support the qualitative data collection of the Assessment G Staffing and Productivity report.

C.1 VHA Stakeholders

Table C-1. List of Assessment G VHA interviewees

Name of Interviewee	Title
Dentistry: *Interview Dates 12-30-2014 and 01-05-2015*	
Patricia Arola, DDS	Assistant Under Secretary for Health for Dentistry
Susan Bestgen, DDS	Director of Operations
Terry O'Toole, DDS	Director, Dental Informatics and Analytics
Greg Smith, DDS	Associate Director, Dental Informatics and Analytics
Mental Health: *Interview Date 01-05-2015*	
Dean Krahn, MD	Director, Office of Mental Health Operations
Jodie Trafton, PhD	Director, VA Program Evaluation and Resource Center
David Carroll, PhD	National Mental Health Director, Program Integration – Acting Director of Operations
DSS: *Interview Date 01-06-2015*	
Eric Burgess	Director, Managerial Cost Accounting Office
Larry Nedzbala	DSS Technical Support Staff
Roger Tillson	VHA MCAO
Primary Care: *Interview Date 01-07-2015*	
Joanne Shear, MS, FNP-BC	Clinical Program Manager
Lisa Skomra	Primary Care Operations Specialist/National
Betsy Lancaster	VSSC Mgmt. & Program Analyst
Freddy Kirkland	Program Analyst

Name of Interviewee	Title
Richard Stark	Executive Director for Primary Care Operations
Gordon Schectman, MD	Chief Consultant, Primary Care Services
Physician Productivity –Specialty Care Services: *Interview Date 01-09-2015*	
Eileen Moran	Director, OPES
Imran Ahmed	CBI NAM Accountant
Lori McDonald	HIM Specialist
Eric Burgess	Director, MCA Office
Michael Doukas, MD	Chief Consultant, Specialty Care Services
Leonard Pogach, MD	Specialty Care Services
Omar Cardenas	Specialty Care Services
Office of Academic Affiliations: *Interview Date 01-12-2915*	
Robert Jesse, MD, PhD	Chief Academic Affiliations Officer
Karen Sanders	Deputy Chief Academic Affiliations Officer
Sheila Jackson	Management Analyst, Academic Affairs Officer
Surgery: *Interview Date 01-12-2015*	
William Gunnar, MD	National Director of Surgery
Geriatrics: *Interview Date 01-30-2015*	
Richard M. Allman, MD	Chief Consultant, Geriatrics & Extended Care Service
Physical Medicine & Rehabilitation: *Interview Date 02-02-2015*	
Lucille Beck, MD	Chief Consultant for Rehabilitation Services
Office of Women's Health: *Interview Date 02-24-2015*	
Patricia Hayes, PhD	Chief Consultant for the Women Veterans Health Strategic Health Care Group
Health Services Research & Development: *Interview Date 02-25-2015*	
David Atkins, MD	Director of Health Services Research & Development
Office of Nursing Services: *Interview Dates 02-12-2015, 03-17-2015*	
Donna Gage	Chief Nursing Officer, ONS
Office of Nursing Services: *Interview Dates: 03-10-2015, 03-31-2015*	
Beth Taylor	ONS Director of Workforce and Leadership

Name of Interviewee	Title
VHA Office of Workforce Management: *Interview Date: 05-07-2015*	
Elias Hernandez	Chief Officer of Workforce and Management and Consulting
VHA Office of Research and Development: *Interview Date 04-10-2015*	
Kathlyn Sue Haddock, RN, PhD	VHA ACOS for Research
VHA VISN Leadership: *Interview Dates 04-07-2015,04-08-2015*	
Amy Smith	Chief Nursing Officer of VISN 16
Judy Finley	Chief Nursing Officer of VISN 7
Portland VAMC Leadership: *Interview Dates 02-27-2015*, 04-22-2015	
Kathleen Chapman	Chief Nurse Executive at Portland VAMC
Christy Locke	Portland VAMC Data Coordinator
Office of Telehealth: *Interview Date 05-13-2015*	
Carla Anderson, Pamela Stressel	VHA VACO Telehealth Team

C.1.1 Interview Questions for VHA Stakeholders

Table C-2. Questions for VHA stakeholders

Dentistry	Mental Health	Managerial Cost Accounting Office	Primary Care	Physician Productivity - OPES	Office of Academic Affiliations
Please provide a summary profile of VA dentistry providers: FTE, type of providers, locations, FT/PT, staff/contract and fee	What staffing models are currently in place for mental health? Is there a standard staffing model across all facilities? Are any staffing models being tested or piloted?	Can you provide an overview of the MCA system and how it documents and measures time allocation for providers?	How is panel size determined?	What are some of the key challenges in optimizing productivity and staffing?	VA conducts the largest education and training effort for health professionals in the nation. How does VA affiliate with academic institutions? ▪ What are the models for those partnerships? ▪ Is there any standard MOU language used for academic affiliations?
How does VA measure the case load and productivity of VA dentistry providers?	How are mental health services organized at medical centers and clinics?	Does MCA account for variable labor costs and fixed labor costs?	What are the current optimum levels of support staff per PCP and rooms per PCP?	Do you have data on how much time VHA providers spent per patient?	What percentage of VA medical centers have academic affiliations?
Is there any standardized staffing model used for dentistry in VA?	How is productivity measured/calculated for mental health? ▪ How is this monitored?	What changes did the 2013 directive on productivity have on labor mapping? ▪ Are there concerns about the variations in documenting administrative and clinical time?	What are the key challenges associated with optimizing staffing in the field?	Do you have data to support quality measures?	The academic mission of VA is very strong. We understand that every year, over 100,000 residents, fellows, and associated health students receive clinical training in VA facilities. As potential future VHA providers, what are

Dentistry	Mental Health	Managerial Cost Accounting Office	Primary Care	Physician Productivity - OPES	Office of Academic Affiliations
					students/trainees taught so that they are prepared to care for the Veteran population? ▪ How are they being prepared to treat Veterans/patients under new care models?
What are the key metrics and performance reports? Please provide us with copies of these reports.	What are the core data streams used to calculate productivity?	How do facilities look at or use MCA data to make resourcing decisions?	Have you compared VA staffing, case load and productivity with the private sector? What were the results?	Have you compared VA staffing, case load and productivity with the private sector? ▪ What were the results?	What are the benefits to VA, Veterans, and the community for having strong academic affiliations?
How is each productivity metric calculated?	What are the key challenges with implementing new productivity standards?	Is MCA involved in the operational or functional side of time allocation management? Does MCA analyze or trend time allocation by provider of by facility?	What key elements or factors should we consider in making these kinds of comparisons? ▪ What is unique about VA care delivery models/structures?	What key elements or factors should we consider in making these kinds of comparisons? ▪ What is unique about VA care delivery models/structures?	Could you tell us about dual appointment providers? ▪ How many are there? ▪ What do we need to know about dual appointment providers in looking at productivity, case load, and overall staffing in the medical centers?
Where is the productivity data for VA dentistry providers sourced from?	What are the key challenges associated with optimizing staffing in the field?	What are the problems with labor mapping for VHA?	What factors unique to VA impact the staffing, case load, and productivity of VHA providers when compared to the private sector? These factors may	Have you done any comparisons with other government agencies?	How does OAA ensure that residents/fellows are trained to identify the appropriate attending on encounters/notes?

Dentistry	Mental Health	Managerial Cost Accounting Office	Primary Care	Physician Productivity - OPES	Office of Academic Affiliations
			include: mission, policies and directives, patient population served, models of care, practice arrangements, number of support staff, number of exam rooms, clinic configuration, etc.		
Have you compared VA dentistry staffing, case load and productivity with the private sector? What were the results?	Have you compared VA staffing, case load and productivity with the private sector? What were the results?	What are the factors unique to VHA that impact labor mapping or time allocation?	Are there VA medical facilities that are especially good examples of these unique factors?	Care coordination is a big focus. What is your hypothesis about whether this coordination affects productivity?	How does working in a facility with an academic partnership change/affect the provider's day-to-day operations? ▪ How much time, on average, does this take away from direct patient care on a regular basis? ▪ Do you find that providers' productivity is significantly hampered by time spent supervising residents?
What factors unique to VA impact the staffing, case load, and productivity of VA dentistry providers when compared to the private sector? These factors may include: mission, policies and directives, patient	What key elements or factors should we consider in making these kinds of comparisons?	We understand that MCA performs periodic audits of labor mapping in the field. What do these audits entail and what have they revealed?	Can you walk us through the functionality of PCMM? How is PCMM data used at the national or program level?	Does VA have a risk adjusted model that they use?	Are there any, if known, differences in operations or staffing models for facilities with academic affiliations?

Dentistry	Mental Health	Managerial Cost Accounting Office	Primary Care	Physician Productivity - OPES	Office of Academic Affiliations
population served, models of care, practice arrangements, number of support staff, number of exam rooms, clinic configuration, etc.					
Are there VA medical facilities that are especially good exemplars of these unique factors?	What is unique about VA care delivery models/structures?	Is MCA able to determine if providers have administrative or research funding associated with them?	Contract providers are also tracked in PCMM correct? Are contract CBOCs held to the same panel size standards?	Why not hire more coders?	Have any studies been conducted to compare facilities with academic affiliations to those without academic affiliations?
Are there any specialties that do not perform any general work?	What factors unique to VA impact the staffing, case load, and productivity of VHA providers when compared to the private sector? These factors may include: mission, policies and directives, patient population served, models of care, practice arrangements, number of support staff, number of exam rooms, clinic configuration, etc.	How are support staff accounted for in MCA?	What factors affect the quality of data and performance metrics for VA Primary Care?		Can you provide examples of VA medical facilities with especially strong or unique academic affiliations? ▪ What makes these relationships strong or unique?
Is there a long waiting list for dental care?	Are there VA medical facilities that are especially good exemplars of these unique factors?	Would you like to expand upon the recent hypothesis submitted to MITRE about the reasonable models for measuring productivity?	How is productivity measured/calculated for primary care?		Could you please provide us with a list of facilities that have academic affiliations and any key information about those programs?

Dentistry	Mental Health	Managerial Cost Accounting Office	Primary Care	Physician Productivity - OPES	Office of Academic Affiliations
Do you have the staffing ratios and the number of rooms per provider housed in a general database?		Has MCA conducted any external benchmarking studies on time allocation?			Is there anything we did not address that you would like to share?
Can you send us the slides/reports discussed in today's meeting?		Does MCA data undergo any transformation or enter the CDW before being used in the OPES productivity cubes?			
You created a system that isn't based on CMS. How is the system constructed, and what is the data source?					
How data is captured from a clinician's perspective?					
Do you perform similar studies into large variances in productivity, not just coding?					
Are these reports discussed at national level to address any anomalies?					
When calculating productivity, are you only counting the RVU done directly? Or those which done while overseeing a resident?					

Dentistry	Mental Health	Managerial Cost Accounting Office	Primary Care	Physician Productivity - OPES	Office of Academic Affiliations
Brief demo on how/why some facilities may not show high productivity					
Is there a lot of turn-over among dentists?					

Continued VHA Stakeholder questions.

Surgery	Geriatrics-Palliative	Physical Medicine & Rehabilitation	Office of Women's Health	Health Services Research & Development
If you could give us a history of staffing models in surgery overview and what work is currently underway to standardize staffing models for surgery?	How are geriatrics and extended care services organized at medical centers and associated clinics?	How are PM&R services organized at medical centers and associated clinics? We understand that PM&R can include preventive, rehabilitation, adjustment, and maintenance care through inpatient, residential, and outpatient services.	Women are the fastest growing group within the Veteran population. The number of women Veterans seeking VA care continues to increase. Can you describe the range of services offered to the women Veteran population? ▪ Do these services vary across facility complexity levels? ▪ Vary between facilities and their associated CBOCs?	Is VA required to spend a specific amount of time doing research or are there specific research projects that are mandated? ▪ Are there requirements for (or limits on) the amount research medical centers can conduct?

Surgery	Geriatrics-Palliative	Physical Medicine & Rehabilitation	Office of Women's Health	Health Services Research & Development
What are key challenges associated with optimizing staffing in the field?	We understand that GEC encompasses a number of services, categorized as home and community based services, and those services occurring in the nursing home (e.g., CLC) and residential settings. How does the range of GEC services offered differ across facility complexity levels?	How does the range of PM&R services offered differ across facility complexity levels?	What are the legislative or other requirements for care provision to Women Veterans within VA?	At the provider level, are there limits on the amount of time providers can spend doing research?
Can you name some key challenges to optimizing productivity and staffing?	What are the optimum levels of support staff per geriatrician? ▪ Can you explain the Geri-PACT model?	What are the optimum levels of support staff per PM&R provider? Are there any care models specific to PM&R?	Can you describe the optimum levels of support staff per women's health provider to deliver comprehensive primary care services? ▪ We understand that this is delivered by a designated women's health primary care provider, who manages a panel of patients.	Do the HRS&D Center annual reports and project final reports have metrics for time spent on research activities? ▪ Do you use any particular metrics or data streams to look at staffing and productivity in relation to research activity?
What are key challenges with implementing new productivity standards?	If a geriatrician does not work within a Geri-PACT, how is his/her level of support staff determined. How is caseload determined?	Are panel sizes or teams used in PM&R?	Are target panel sizes per WH PCP established at the local level?	Are there any, if known, differences in operations or staffing models for facilities with research programs?

Surgery	Geriatrics-Palliative	Physical Medicine & Rehabilitation	Office of Women's Health	Health Services Research & Development
Comparison to the private sector: Comparison of VA staffing, case load and productivity with the private sector. If analyses have been conducted, what were the results?	Are panel sizes used in geriatrics beyond Geri-PACTs?	What are the key challenges associated with measuring productivity in PM&R?	What percentage of VA medical centers have Women's Health Centers (WHC)? ▪ Can you provide us with a list of facilities with WHC's? ▪ Are there metrics that compare care for women Veterans at facilities with WHCs to non-WHC facilities? ▪ Are there any, if known, differences in operations or staffing models for facilities with WHCs? ▪ Are there certain space requirements for configuring WHCs and other women-focused health care areas?	Have any studies been conducted to compare facilities near HRS&D Centers of Innovation to facilities that do not have local access to these centers?

Surgery	Geriatrics-Palliative	Physical Medicine & Rehabilitation	Office of Women's Health	Health Services Research & Development
Were there factors unique to VA impact the staffing, case load, and productivity of VHA providers when compared to the private sector? ▪ These factors may include: mission, policies and directives, patient population served, models of care, practice arrangements, number of support staff, number of exam rooms, clinic configuration, etc. ▪ Are there VA medical facilities that are especially good exemplars of these unique factors?	What are the key challenges associated with measuring productivity among geriatricians?	What are the key challenges associated with optimizing PM&R staffing in the field?	"All enrolled women Veterans need to receive comprehensive primary care from a designated women's health primary care provider, irrespective of where they are seen (freestanding medical centers, primary facilities, CBOCs, and independent clinics)." (VHA HANDBOOK 1330.01) ▪ Does this impede the ability to get enrolled women health care?	Can you provide examples of VA medical facilities with especially strong or unique research programs? ▪ What makes them strong or unique?

Surgery	Geriatrics-Palliative	Physical Medicine & Rehabilitation	Office of Women's Health	Health Services Research & Development
Are there factors affecting the quality of data and performance metrics for VA surgery staffing?	What are the key challenges associated with optimizing GEC staffing in the field?	Have you compared VA staffing, case load and productivity with the private sector? ▪ What were the results?	"A female chaperone must be in the examination room during examinations, procedures, or treatments involving the breast and genitalia, regardless of the gender of the provider." Female chaperones can be health technicians, nurse's aides, Licensed Practical Nurses or a "Female Volunteers". (VHA HANDBOOK 1330.01) ▪ Do "Female Volunteers" usually serve as the chaperones or is it often done by a health tech, nurse aide, or LPN? ▪ Does this impede productivity within medical facilities? ▪ Do optimum support staff levels differ for women's health care providers as a result of this requirement?	There are three main types of HSR&D programs which include: programs that directly support scientific research and development, programs that build health services research capacity within VA, and programs that strengthen VA's health services research infrastructure. Do facilities tend to focus on specific types of research over others? Is the encouragement to pursue one type over another?
Is the use of OPES or SPARQ data used operationally to inform staffing/hiring decisions?	Have you compared VA staffing, case load and productivity with the private sector? ▪ What were the results?	Have you compared VA staffing, case load and productivity with the private sector? ▪ What were the results?	Can you provide examples of VA medical facilities with particularly strong women's health programs? ▪ What makes them strong?	How are research programs organized at medical centers and associated clinics?

Surgery	Geriatrics-Palliative	Physical Medicine & Rehabilitation	Office of Women's Health	Health Services Research & Development
Does surgery use any other internal data sets to measure staffing and productivity?	What are the unique factors of VA (e.g., mission, policies and directives, demographics/population served, number of support staff, number of exam rooms, delivery models/structures) that need to be considered when making these comparisons?	Have you compared VA staffing, case load and productivity with the private sector? ▪ What were the results?	What are the key challenges associated with measuring the productivity of women Veteran health care providers? ▪ Are there requirements or statutes that would either hamper or increase productivity of these providers?	Is there a Field Facility R&D Officer at all facilities with research programs? Can you provide us with the contact information for the officers at the sites we are visiting?
	Our site visit teams will be traveling to a number of facilities, to include VAMCs, CBOCs, and CLCs. Are there particular CLCs that are especially good examples of these unique factors?	Do you use any particular metrics or data streams to look at staffing and productivity at a national level?	What have we not asked that you feel is important for us to know/address?	Most HSR&D Centers have academic affiliations, which tend to indicate higher facility complexity levels. How else do the range of research programs differ across facility complexity levels?
	Do you use any particular metrics or data streams to look at staffing and productivity at a national level?	How is time allocated for PM&R providers to spend time on administrative, research, and training tasks? ▪ How does this impact productivity?		Have you compared the time that VHA providers spend on research activities to providers in the private sector? ▪ What were the results?
	How is time allocated for geriatricians to spend time on administrative, research, and training tasks? How does this impact productivity?	What have we not asked that you feel is important for us to know/address?		Our site visit teams will be traveling to a number of facilities over the next several months. Are there particular examples of HSR&D Centers that we should visit?

Surgery	Geriatrics-Palliative	Physical Medicine & Rehabilitation	Office of Women's Health	Health Services Research & Development
	What have we not asked that you feel is important for us to know/address?			What have we not asked that you feel is important for us to know/address, given the scope of our study?

C.2 Selected Facility Type and Location

Table C-3 shows a list of the selected facilities for Assessment G.

Table C-3. Selected facility type and location

VISN	Official Station Name	City	State	Facility Type
1	Boston VA – Brockton	Brockton	MA	VAMC
1	Causeway VA Clinic	Boston	MA	CBOC
2	Canandaigua VA	Canandaigua	NY	VAMC
2	Rochester VA Clinic	Rochester	NY	CBOC
3	Northport VA	Northport	NY	VAMC
3	Bay Shore VA Clinic	Bay Shore	NY	CBOC
4	Coatesville VA	Coatesville	PA	VAMC
5	VA Maryland Health Care System	Baltimore	MD	VAMC
6	Durham VA	Durham	NC	VAMC
6	Raleigh VA Clinic	Raleigh	NC	CBOC
7	Central Alabama VA – Tuskegee	Tuskegee	AL	VAMC
8	Malcom Randall VA	Gainesville	FL	VAMC
9	Lexington VA – Cooper*	Lexington	KY	VAMC
9	VA Berea Clinic	Berea	KY	CBOC
11	John D. Dingell VA	Detroit	MI	VAMC
11	Pontiac VA Clinic	Pontiac	MI	CBOC
12	Oscar G. Johnson VA	Iron Mountain	MI	VAMC
12	Oscar G, Johnson Community Living Center	Iron Mountain	MI	CLC
16	G. V. (Sonny) Montgomery VA	Jackson	MS	VAMC
16	Michael E. DeBakey VA	Houston	TX	VAMC
17	Central Texas VA – Olin E. Teague	Temple	TX	VAMC
18	New Mexico VA – Raymond G. Murphy	Albuquerque	NM	VAMC
19	Montana VA – Fort Harrison	Fort Harrison	MT	VAMC
20	VA Portland Health Care System	Portland	OR	VAMC
21	Palo Alto VA	Palo Alto	CA	VAMC
21	Palo Alto Community Living Center	Palo Alto	CA	CLC
22	Long Beach VA	Long Beach	CA	VAMC
22	Cabrillo VA Clinic	Long Beach	CA	CBOC
23	Fargo VA	Fargo	ND	VAMC

**indicates pilot site*.

C.2.1 Interview Questions for VAMC or CBOC Leadership

The following questions were asked during the onsite visits at VA medical centers. Interviews ranged from twenty minutes to one hour depending on the availability and scheduling constraints of the facility.

Table C-4. Interview questions for VAMC or CBOC leadership

Associate Director	Chief of Staff	Chief of Human Resources	Chief of Fiscal Services	Associate Director for Patient Care Services (Nurse Executive)
What is unique about the mission of VA that may impact productivity of providers relative to non-VA health systems?	What is unique about the mission of VA that may impact productivity of providers relative to non-VA health systems?	What is unique about the mission of VA that may impact productivity of providers relative to non-VA health systems?	What is unique about the mission of VA that may impact productivity of providers relative to non-VA health systems?	How are staffing decisions made by this facility for determining staffing levels for nursing (inpatient, specialty, and primary care)?
What is unique about the patient population served by this VA Medical Center that may impact productivity of providers compared to non-VA health systems?	What is unique about the patient population served by this VA Medical Center that may impact the productivity of providers compared to non-VA health systems?	How does the way this facility/service is staffed impact provider productivity compared to the private sector?	How does the way this facility/service is staffed impact provider productivity, compared to non-VA health systems?	Does your facility use the national nurse staffing model (expert based unit panel) for nursing staffing decisions?
How does the way care is delivered in this facility impact productivity of providers, compared to the private sector?	How does the way care is delivered in this facility impact the productivity of providers, compared to non-VA health systems?	How are staffing and budget decisions made for providers in this facility?	How does the way this facility/service is staffed impact the performance of this facility in meeting the access standard?	How does this facility compare to the staffing indicated by the nurse staffing model?
How does the way this facility/service is staffed impact provider productivity compared to the private sector?	How does the way this facility/service is staffed impact provider productivity, compared to non-VA health systems?	What methodology, data, and tools are used?	Does this facility have an affiliate relationship with an academic teaching hospital and if so, how does this relationship impact the productivity of providers, compared to non-VA health systems?	What are barriers in achieving the nurse staffing levels indicated by the model?

Associate Director	Chief of Staff	Chief of Human Resources	Chief of Fiscal Services	Associate Director for Patient Care Services (Nurse Executive)
What other factors have either positive or negative effects on productivity compared to the private sector?	How does the way this facility/service is staffed impact the performance of this facility in meeting the access standard?	Do you have issues recruiting, hiring, and/or retaining qualified providers at this facility? ▪ Why?	How does the process for purchasing care in the community enable or serve as a barrier to achieving the access to care standards?	What would you change in the model to make it a better tool?
How are staffing and budget decisions made for providers in this facility?	What other factors have either positive or negative effects on productivity compared to non-VA health systems?	Can you provide us the list of providers who are VA employees with a dual appointment?	How are staffing and budget decisions made for providers in this facility?	How does budget allocation at this facility impact the implementation of the national nurse staffing model?
What methodology, data, and tools are used?	How are staffing and budget decisions made for providers in this facility?		What methodology, data, and tools are used?	
How does this facility manage and track provider productivity?	What methodology, data, and tools are used?		How are these decisions made for nursing staff (inpatient, specialty, and primary care)?	
How does the facility respond when productivity issues or inefficiencies are identified?	How are these decisions made for nursing staff (inpatient, specialty, and primary care)?		How does this facility manage and track provider productivity?	
	How does this facility manage and track provider productivity?			
	How does this facility respond when productivity issues or inefficiencies are identified?			
	Can you provide us the list of providers who are VA employees with a dual appointment?			

C.2.2 Interview Questions for VA Providers, Service Chiefs and Section Chiefs

Assessment G team asked the following questions to VAMC providers; Chiefs of Medicine, surgery, primary care, mental health, and dentistry; section chiefs, and AOs during the onsite visits to VAMCs. (Table C-5). Interviews with providers were kept short, between five to seven minutes, to avoid disruption to patient care. Pre-scheduled interviews with Service and Section Leadership were up to thirty minutes in length.

Table C-5. Interview questions for VHA providers, service chiefs, and section chiefs

Providers	Service Chiefs and Section Chiefs
What three things would enable you to be more productive?	What is unique about the mission of VA that may impact productivity of providers relative to non-VA health systems?
How many patients do you see in an average week?	What is unique about the patient population served by this VA Medical Center that may impact the productivity of providers compared to non-VA health systems?
(FOR PCP/DENTAL ONLY) What's your panel size?	How does the way care is delivered in this facility impact the productivity of providers, compared to non-VA health systems?
Do you have a dual appointment with an affiliate university? ▪ If yes, on an average week how do you split your time between the university and facility? ▪ How are your university and facility responsibilities determined?	How does the way this facility/service is staffed impact provider productivity, compared to non-VA health systems?
What other factors have either positive or negative effects on productivity compared to the private sector?	How does the way this facility/service is staffed impact the performance of this facility in meeting the access standard?
	What other factors have either positive or negative effects on productivity compared to non-VA health systems?
	How are staffing and budget decisions made for providers in this facility?
	What methodology, data, and tools are used?
	How are these decisions made for nursing staff (inpatient, specialty, and primary care)?
	How does this facility manage and track provider productivity?
	How does this facility respond when productivity issues or inefficiencies are identified?

Table C-6. Additional Focused Assessment - Nursing Interview Questions

Chief Financial Officer	Nursing Supervisor	Chief Nurse Executive	Systems Redesign Coordinator	Head Nurse Outpatient	Inpatient Nurse Manager
Can you describe the facilities budget allocation process to address the staffing methodology needs?	We understand inpatient units are using the staffing methodology to establish their FTE's. Have you found that the staffing methodology has increased staffing on off shifts?	We understand you follow the nurse staffing methodology for inpatient and primary care for outpatient. Can you describe the nurse staffing model used in specialty care outpatient clinics?	Can you explain how the systems redesign group supports the VHA in organizational transformation?	Does your unit follow the TIDES model where a Mental Health licensed social workers or Psych nurse practitioners work with Primary Care providers to assess patient needs for appropriate care? If yes, why did you implement the TIDES model? What issues occurred that resulted in this implementation? If no, have you encountered issues with patients being referred from Primary Care to the Mental Health clinics?	Has this unit adopted the nurse staffing methodology? (e.g. establishing a unit based panel, using tools such as FTE calculator, metrics such as NDPPD and the minimum replacement factor)

Chief Financial Officer	Nursing Supervisor	Chief Nurse Executive	Systems Redesign Coordinator	Head Nurse Outpatient	Inpatient Nurse Manager
Does your budget accommodate nursing education and/or certifications?	Do you think the inpatient methodology can help VA achieve its goal of adequate nurse staffing? If not, how could this be improved?	Can you describe how this model established adequate staffing for different clinics such as procedural clinics vs. clinics with lower workloads?	Do you support any initiatives related to nurse staffing? If so, can you describe?	What nurse staffing model has the clinic adopted?	For inpatient, if the nurse staffing plans have been approved and require additional nurses, does the budget accommodate these increases? If not, what are the barriers and constraints to funding nurse staffing needs?
What are the barriers or challenges to fully funding nurse staffing levels per the staffing plans? (e.g. VHA Nurse Staffing Methodology, PACT, etc.)	How has the implementation of the staffing methodology impacted patient outcomes?	For inpatient, if the nurse staffing plans have been approved and require additional nurses, does the budget accommodate these increases? If not, what are the barriers and constraints to	We understand the systems redesign group has targeting outpatient specialty care and mental health as a priority in your Access Partnership initiative, can you describe the goal of these efforts?	What guidance do you have to determine your nurse staffing? (Directives, Policies Guidelines)	What are the barriers and constraints to filling nurse staffing vacancies according to the staffing plan needs?

Chief Financial Officer	Nursing Supervisor	Chief Nurse Executive	Systems Redesign Coordinator	Head Nurse Outpatient	Inpatient Nurse Manager
		funding nurse staffing needs?	What impact does this have on nurse staffing?		
	How has the implementation of the staffing methodology impacted nurse satisfaction?	For outpatient, if the nurse staffing plans have been approved and require additional nurses does the budget accommodate these increases? If not, what are the barriers and constraints to funding nurse staffing needs?	Has the systems redesign group assisted in the implementation of the standardized nurse staffing methodology? If so, can you describe how you supported tis effort?	Can you describe the nurse staffing model/method used in specialty care outpatient clinics? (ONLY SPECIALTY CARE)	What are your top three issues to providing adequate nurse staffing?
	Do you use a standardized scheduling database for bed management and staffing allocations for off shifts?	What are the barriers and constraints to filling nurse staffing vacancies according to the staffing plan needs?	Does the system redesign group support any data collection efforts for nurse staffing? If so, can you describe?	Can you describe how this model establishes adequate staffing for different clinics such as procedural clinics vs. clinics with lower workloads?	Does this unit use NHPPD for tracking, monitoring and addressing daily variances?
	What staffing reports are	What are your top three issues to	We understand that space or geography	For outpatient, if the nurse staffing	How does your unit determine

Chief Financial Officer	Nursing Supervisor	Chief Nurse Executive	Systems Redesign Coordinator	Head Nurse Outpatient	Inpatient Nurse Manager
	generated for off shifts? (e.g. to track number of contract nurses, overtime, sick calls, etc.)	providing adequate nurse staffing?	can be a challenge to deliver quality care with in one specific unit or having to deliver care in multiple units. Can you give an example of how you've been able to support nurses having adequate space for providing care?	plans have been approved and require additional nurses, does the budget accommodate these increases? If not, what are the barriers and constraints to funding nurse staffing needs?	the staffing mix?
	What are the top three barriers or challenges that have hindered your ability to adequately staff nurses during off shift hours?	Do you collect any nursing quality metrics in your outpatient clinic? If so, what are they?		What are the barriers and constraints to filling nurse staffing vacancies according to the staffing plan needs?	MED SURGE ONLY – Can you share the staffing grid for Med Surg units that tracks the daily NHPPD to determine what their planned versus actual NHPPD is over a period of time? (e.g. last quarter, months, etc.?)

Chief Financial Officer	Nursing Supervisor	Chief Nurse Executive	Systems Redesign Coordinator	Head Nurse Outpatient	Inpatient Nurse Manager
	What are the top three best practices or success stories that you're most proud of?	How do you compare/benchmark your nursing quality metrics to other VAMCs		What are your top three issues to providing adequate nurse staffing?	How do you compare/benchmark your nursing quality metrics to other VAMCs?
		Do you compare/benchmark your nursing quality metrics to external health care organizations? (e.g. state association or organization such as Mass State HC Association for Nurse Executives)		Do you collect any nursing quality metrics in your outpatient clinic? If so, what are they?	Do you use intermittent staff? If yes, how are you using them to fill temporary vacancies (e.g. sick leave, vacations)?
		Does the facility collect and report their NSI's to the NDNQI®? If yes, what nursing units submit their NSIs to NDNQI®? What database captures these NSIs? (e.g. national vs. local databases)		How do you compare/benchmark your nursing quality metrics to other VAMCs?	Do you conduct daily bed management meetings with all nurse managers to make decisions on staffing needs for that day?

Chief Financial Officer	Nursing Supervisor	Chief Nurse Executive	Systems Redesign Coordinator	Head Nurse Outpatient	Inpatient Nurse Manager
		If no, what are the barriers or challenges to reporting NSIs to the NDNQI®?			
		Are you reviewing Nursing Quality Metrics during your VISN meetings? If yes, are action plans discussed in response to reducing negative outcomes?		Do you use intermittent staff? If yes, how are you using them to fill temporary vacancies (e.g. sick leave, vacations)?	Do you affiliate with local nursing schools to provide potential resources to fill vacancies?
		Do you have a central staffing office that schedules nurses to fill the gaps in the unit schedules?		Do you conduct daily bed management meetings with all nurse managers to make decisions on staffing needs for that day?	Do you establish a nurse residency program?
		Do you use float pools to remediate variances in nurse staffing levels?		Do you affiliate with local nursing schools to provide potential resources to fill vacancies?	Do you provide for cross-training of staff to work in multiple inpatient units

Chief Financial Officer	Nursing Supervisor	Chief Nurse Executive	Systems Redesign Coordinator	Head Nurse Outpatient	Inpatient Nurse Manager
					and outpatient clinics?
		Do you use intermittent staff? If yes, how are you using them to fill temporary vacancies (e.g. sick leave, vacations)?		Do you establish a nurse residency program?	What % of BSNs do RN's have at this facility? What strategies have you put in place to increase the % of BSNs?
		Do you conduct daily bed management meetings with all nurse managers to make decisions on staffing needs for that day?		Do you provide for cross-training of staff to work in multiple inpatient units and outpatient clinics?	What strategies do you use to improve nurse staffing? What strategies do you use to improve nurse satisfaction?
		Do you affiliate with local nursing schools to provide potential resources to fill vacancies?		What % of BSNs do RN's have at this facility? What strategies have you put in place to increase the % of BSNs?	What strategies do you use to improve patient outcomes?
		Do you establish a nurse residency program?		What strategies do you use to improve nurse staffing?	

Chief Financial Officer	Nursing Supervisor	Chief Nurse Executive	Systems Redesign Coordinator	Head Nurse Outpatient	Inpatient Nurse Manager
				What strategies do you use to improve nurse satisfaction?	
		Do you provide for cross-training of staff to work in multiple inpatient units and outpatient clinics?		What strategies do you use to improve patient outcomes?	
		What % of BSNs do RN's have at this facility? What strategies have you put in place to increase the % of BSNs?			
		What strategies do you use to improve nurse staffing? What strategies do you use to improve nurse satisfaction?			
		What strategies do you use to improve patient outcomes?			

Additional questions asked of the Chief Nurse Executive:

1. Does this facility follow the California state mandated nurse ratio?
2. Does this facility use NHPPD for tracking, monitoring and addressing daily variances?
3. Is the nurse staffing mix predetermined with ratios/percentages or does the unit determine the staffing mix?
   - If pre-determined, what method is being followed?
4. If the unite determines the staff mix, is a process used to capture nurse tasks/interventions and map them to nurse roles?
5. Does the facility/unit develop action plans/initiatives to address low Nurse Satisfaction? Are the results of the action plans reported up to the VISN or VACO?

C.2.3 Site Visit Interview Teams

Grant Thornton deployed three teams to conduct VA medical center site visits, beginning February 3, 2015 and ending May 13, 2015. Each team had a team lead, advisor, and analyst. Team leads and analysts were senior executives with advanced experience as former medical center or clinician leaders, well versed in VHA operations. They served as interview leads and were responsible for guiding team when communicating with facility leadership. Analysts were responsible for logistics and documentation, to include coordinating logistics and taking notes as well as documenting information during/after interviews, and conducting interviews as required.

Appendix D Leading Practices

D.1 Staffing Models

VA Leading Practices

The Southern Arizona VA Health Care System (SAVAHCS) in Tucson, Arizona implemented a locally developed specialty care clinic model, known as "PACT II." Derived from the PACT teamlet model implemented across VHA for primary care, PACT II aims to extend the multidisciplinary team based model to sub-specialties, and create integration between specialty care and primary care.[268] The Director at SAVAHCS implemented the creation of a Triad model for PACT II. "We've developed a Triad and placed key nursing staff with sub specialty medicine, sub specialty surgery, and are in the process of setting up a special procedure unit. That is the "barrier buster" concept which means that Triad in sub-specialty medicine has a position; a nurse and a business service line person and they manage that group so that if staff have issues with a specialty activity, they go to them. They are empowered to address issues such as scheduling or a situation where things aren't working right and someone needs assistance or advice."[269]

Triad members act as mid-level managers between services chiefs and providers and support staff. The leadership at SAVAHCS noted that before the Triad was established, clinics relied heavily on Administrative Officers (AOs) for staffing and other clinic management concerns, resulting in an isolated structure with a presence only where staff shortages were occurring, and limiting visibility. Triad members hold weekly meetings with each other and with service chiefs to discuss on-the ground operations, needs and issues within clinics. Each PACT II teamlet consists of providers (mixture of physicians and primarily NPs), and is assigned one RN, LPN, and MSA for the teamlet. Nurses, while technically assigned to a teamlet, can cover other teamlet clinics if there is unplanned or planned leave. [270]

Figure D-1 illustrates the Triad Governance Model, and relationship with service chiefs and teamlets.[271]

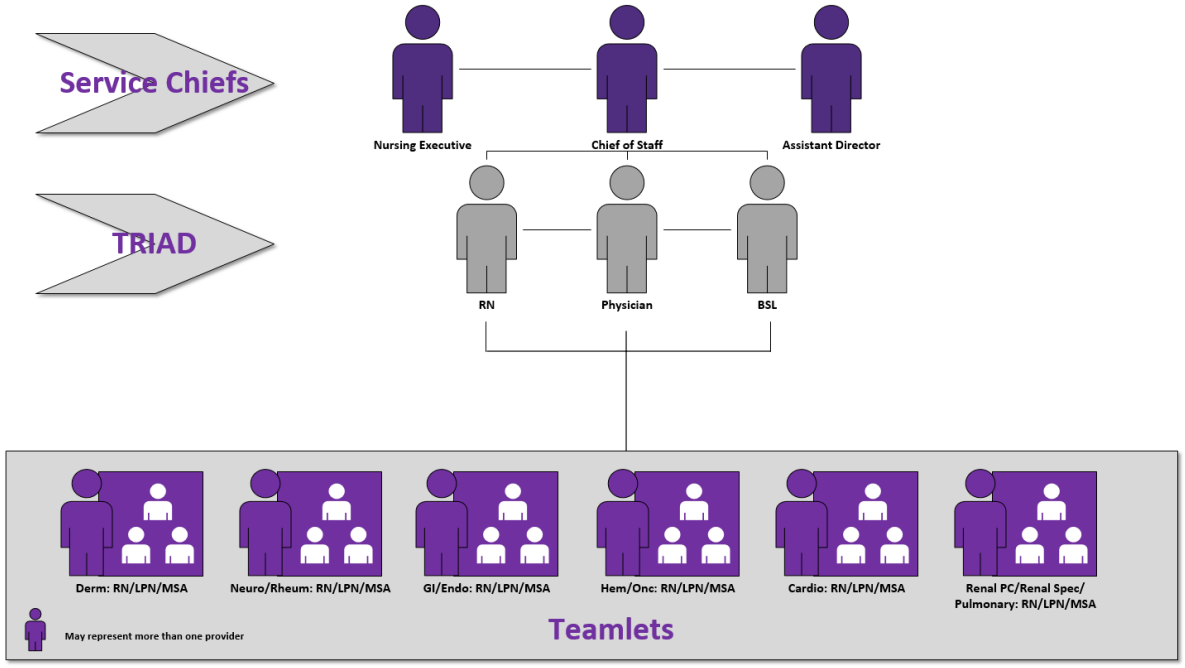
[268] Arizona Department of Veterans' Service Advisory Commission. Retrieved from https://dvs.az.gov/sites/default/files/Meeting%20Minutes.pdf.

[269] Ibid.

[270] Interview with Mary Ann Mason, Dr. Stephen Thomson and Jeff Schnell, March 24, 2015, VHA Specialty Care Gap Analysis Site Visit.

[271] Ibid.

Figure D-1. Triad governance model[272]



The Triad oversee the operation of the PACT II model (aka Specialty Care Teams). There are 6-7 teamlets in Medical Specialty clinics, organized as follows:

- Dermatology (in the process of splitting into two teamlets, one for procedural, and one for medicine)
- Neurology/Rheumatology (in the process of splitting into separate teamlets)
- Gastroenterology/Endocrine
- Hematology/Oncology
- Cardiology
- Renal Primary Care/Renal Specialty/Pulmonary (in the process of splitting into separate teamlets)[273]

In addition to the PACT II model described above, Triad members believe the implementation of the following has helped with proficiency in the medical specialty clinics:

- E-consults
- Telehealth
- Telephone visits

[272] Graphic created based on data collected from Grant Thornton specialty Care gap analysis in support of VHA Office of Specialty Care Services.

[273] Interview with Mary Ann Mason, Dr. Stephen Thomson and Jeff Schnell, March 24, 2015, VHA Specialty Care Gap Analysis Site Visit.

- Secure messaging[274]

This is highlighted as a best practice as there are no standard VHA specialty care staffing model. This may be scalable across facilities, but successful implementation depends on the availability of staff with the right skillsets, leadership support, and buy-in from specialty care providers and support staff.

At the Portland VA Health Care System in Oregon, the nurse executive developed a staffing model to meet the support staffing needs of specialty care clinics. Clinics were re-organized with a surgical and medical services structure, where an RN director managed the staffing needs for multiple procedure and non-procedure clinics grouped in shared clinic spaces. Staffing levels were determined by patient volume, patient acuity (workload) and available space across several specialty clinics. Table D-1 is an example of how the Portland VA determined the estimated workload required for each service line to identify nursing and administrative support staff needs.

[274] Interview with Mary Ann Mason, Dr. Stephen Thomson and Jeff Schnell, March 24, 2015.

Table D-1. Estimated workload required to identify nursing and administrative support staff needs

Category Simple (2-4) to Complex Clinics	**2**	**3**	**4**
Workload specifics for Patient complexity in SC	Liver, Cardio, Pulm, Diabetes, Plastics/Hand, Podi, ENT, Gen Surg, Neuro, Rheum, Seizure, Stroke, Derm, EPO, Renal, NW Pain, Ostomy	INF DX, ALS, Dementia, Geri, MS, Ortho, PAD	Nurse TX, Urology, Vascular, Wound Care, Nail Care, Sulptra
Clinical Reminders	*	*	*
Braces		*	*
Position/Walk/orthostats	*	*	*
Vaccine Administration	*	*	*
Patient Training	*	*	*
Xrays, Sutures, Staples	*	*	*
Lab Specimens			*
Time Outs	*	*	*
Chaperoning	*	*	*
Wnd-Vacs & cath procedures			*
Admin involvement & room turnover	*		*
Utilizing Lift Equipment		*	*
Meter downloading	*	*	*

Category Simple (2-4) to Complex Clinics	2	3	4
CBGs for steroid injury		*	*
Patient Education	*	*	*
Complex Wound Care		*	*
Call report to floor Admits/ED		*	*
ED/Casting/Amb Transport	*	*	*
Nurse Contact Time	**~15 minutes**	**~20 to 30 minutes**	**40 to 60 minutes**

This promising practice was developed as Portland's staffing model for outpatient clinics to address a range of factors known to impact provider productivity and patient access, including patient volume, patient acuity (workload) and available clinic space. It also supports staff flexibility because nursing staff is cross-trained to operate in multiple clinics and work at the top of their licensure.

Portland is one of VA's Magnet® Designated facilities that participates in NDNQI®. The Portland VAMC implemented a data verification/reporting process for NSI's that are submitted to NDNQI®. Portland also created an Access Database to track all information related to specific incident for example, a patient fall, hospital acquired pressure ulcers (HAPU), etc. The following depicts the data verification process that this facility created and currently follows for all nursing outcome metrics.

1. Incident occurs (e.g. falls)
2. The nurse on assigned unit completes CPRS episode note to document incident
3. The unit nurse(s) are alerted to complete a Chart Review to determine if the data definition (e.g. NDNQI® criteria) of the incident aligns with the incident that occurred (e.g. determine if the fall was actually considered a fall). Only staff trained on quality metric reviews and data definitions and entering data into the Access Database can perform Chart Reviews. Unit nurses were included in this training to promote ownership among the staff for data collection.
4. After meeting the definition of the incident, the unit nurse sends the incident data to the Patient Safety Officer to add into the Incident Reporting System.

5. Unit nurse enters the chart review incident data into the database that tracks all information related to the incident. Parts of these data elements are submitted to NDNQI®.

The value in submitting complete and verified data to organizations such as NDNQI® allows VAMCs to compare nursing quality performance nationally. Tracking incident information in one database also enables staff to determine root causes of incidents and develop preventative strategies. Our team considers these Portland practices easily replicable in other VA medical facilities.

The Atlanta VAMC is another Magnet® recognized facility that reports their NSI data to NDNQI®. Atlanta's current education level of RN's with baccalaureate degrees is 85.7 percent and exceeds the 2020 goal of 80 percent. The following NSI outcome results in Atlanta's Med-Surg units support Linda Aiken and colleagues 2002 research that higher proportion of nurses holding at least a baccalaureate degree are associated with improved patient outcomes[275]:

- Total patient falls per 1,000 patient days was **less than** the NDNQI® aggregate mean between FY12-FY13
- Overall percent of HAPUs **was less** than the NDNQI® aggregate mean between FY11-FY13
- The Restraint prevalence **was less** than the NDNQI® aggregate mean between FY12-FY13
- The Med-Surg CAUTI rate was **zero** since 2012

The benefit of having RNs with baccalaureate degrees is that it can encourage nurses to remain current on cutting edge concepts, evidenced based practices, innovative technology, or new equipment in maintaining excellence in their practice. Nurses with BSNs and other degrees can also be prepared for driving improvement initiatives and becoming leaders in the organization.

External Leading Practices

The MHS implemented within its PCMH model a measure of PCM or provider continuity. One of the core principles of the PCMH model is that patients have a consistent relationship with the same PCM or Provider who delivers proactive, preventive and chronic care management in a continuous patient-provider relationship. The MHS measures the rate of all appointments in primary care that are with the enrollee's assigned PCM and reports this data through its TRICARE Operations Center. Since PCM continuity was first measured in 2010, PCM continuity has improved from 41 to 60.9 percent in FY2014.[276]

[275] Aiken, L., Clarke, S., Sloane, D., Sochalski, J. & Silber, J. (2002). Hospital nurse staffing and patient mortality, nurse burnout and job dissatisfaction. *JAMA*, October 29/30, 288(16). Retrieved from: http://www.nursing.upenn.edu/media/Californialegislation/Documents/Linda%20Aiken%20in%20the%20News%20PDFs/jama.pdf

[276] Military Health System Review. (2014). Retrieved from http://www.defense.gov/pubs/140930 MHS Review Final Report Main Body.pdf

At Kaiser Permanente's Northern California region, staffing models for specialty clinics are provided as guidance to clinics who are empowered to innovate to meet their local needs. There is not a mandated clinical support staff to provider ratio in specialty clinics as the goal is to have dynamic clinics that are innovating around patient care and access, rather than emphasizing fixed behaviors by providers and staff. Clinics are physician centered, but employ NPs and PAs, and clinics and their physician chiefs have the flexibility to determine the optimal mix.[277] Outpatient nursing staff are employed by medical groups and report to the physician leader, rather than a nurse manager, who will direct nursing activities. Independent medical groups typically employ physicians, NPs, RNs, and technicians and have their own managers that oversee the actions of the practice.[278]

At the Mayo Clinic in Rochester, Minnesota, support staff ratios for specialty clinics are typically based on a modeled staff ratio. In a specialty clinic at the Mayo Clinic, you will find physicians, APPs (PAs and NPs), RNs (used more frequently than LPNs), and clinical assistants (CAs). CAs are an important part of the Mayo Clinic staffing approach. They fall on the spectrum between clerk and medical assistant. At Mayo, CAs are responsible for check-ins/check-outs, taking patient vitals, medication reconciliation, gathering patient history and helping patients fill out medical questionnaires.[279] The number of CAs is dependent on multiple factors, including the number of providers, patient volume, and types of procedures. On average, there are 6-8 CAs assigned to a specialty clinic. CAs are managed centrally by hospital Desk Operations, not by the clinics.[280]

Mayo predominately uses RNs as support staff for specialty clinics, but LPNs are used in less procedure-intense clinics because care is not as complex or as specialized.[281] RNs assist in procedures, where LPNs are seen as "super" medical assistants. Surgical outpatient clinics typically have two LPNs to support post-operative care. Nurses are hired and supervised through the Department of Nursing. There is usually 1 RN to 1 or 2 surgeons; the 2 surgeons will switch clinic days off and on and the RN will cover clinic the entire time, ensuring patient continuity of care. Nurses are not shared with other specialty clinics, instead, they are assigned to a specialty/subspecialty clinic, and work with a team of RNs to cover that service for a number of providers. This helps to maintain institutional knowledge of that specialty

To obtain approval for additional support staffing, Mayo clinic managers must submit to an Internal Resource Committee a comprehensive business justification that includes patient volume, consult fill rate, patients per provider and must show that the clinic is on a growth pattern that cannot be maintained with current resources. The clinic must show staff members are practicing to the top of their functional ability provide a cost-effectiveness justification, for example, hiring an RN that could do the majority of the work of an NP.

[277] Interview with Mary Ann Mason, Dr. Stephen Thomson and Jeff Schnell, March 24, 2015.

[278] Ibid

[279] Ibid

[280] Ibid

[281] Ibid

Many hospitals across the industry have achieved a quality journey designation such as ANCC Magnet® Recognition Program, Baldrige Performance Excellence, and ANCC Pathway to Excellence to drive organizational, staffing and quality improvements. Table D-2 shows some benefits for hospitals and nurses that purse national quality journey designations.

Table D-2. Benefits for hospitals and nurses that pursue quality journey designations

Magnet®[282]	Baldrige[283]	Pathways to Excellence[284]
• Higher nurse satisfaction • Better nurse engagement • Lower nurse to patient ratio • Better nurse retention • Fewer complications • Fewer falls, fewer pressure ulcers, lower mortality • Higher patient satisfaction • Better financial performance and lower cost of care • Shorter length of stay	• Made a personal commitment to lead their organizational transformation • Aligned people at multiple levels to the organization's vision, mission and values • Fostered a culture focused on organizational learning and improvement • Continually motivated, inspired and engaged their workforce • Built a results focus and processes for driving personal and organizational accountability	• Improve nurse satisfaction • Retain choice nursing staff and leaders • Cultivate inter-professional teamwork Support business growth

One criteria included in the Magnet® designation, which aligns with IOM's recommendation, is that hospital RN workforces consist of 80 percent BSN degrees by 2020.[285] The benefit of having RNs with baccalaureate degrees was established in 2002 when Linda Aiken and colleagues first demonstrated empirically that a higher proportion of nurses holding at least a baccalaureate degree were associated with improved patient outcomes such as lower surgical patient mortality and failure to rescue.[286]

D.2 Aligning Organizational Reporting

[282] ANCC. (2015). ANCC Magnet Recognition Program. Retrieved from: http://www.nursecredentialing.org/magnet.

[283] Baldrige National Quality Program, National Institute of Standards and Technology, Update, October 2008. Retrieved from http://www.baldrige.nist.gov / PDF_files / Update.10_08.pdf.

[284] ANCC. (2015). Pathway Program Overview. Retrieved from: http://www.nursecredentialing.org/PathwayOverview.aspx.

[285] The National Academies of Science. (2011). The Future of Nursing: Leading Change, Advancing Health. *The National Academies Press.* 12. Retrieved from http://www.nap.edu/catalog.php?record_id=12956.

[286] Kutney-Lee, A., Aiken, L. & Sloane, (2013). An increase in the number of nurses with baccalaureate degrees is linked to lower rates of post-surgery mortality. *Health Affiliation Journal* (Millwood). 2013 March; 32(3): 579–586. doi:10.1377/hlthaff.2012.0504

VA Leading Practices

At the Fargo VA Health Care System in North Dakota, MSAs were realigned under the responsibility of a physician leader, the Service Line Chief. According to a Service Line Leader at the facility "MSAs need to be a part of the team." Aligning MSAs under the Service Line Leader helped the Fargo VA Health Care System to better manage the efficiency of its specialty care clinics by increasing coordination and accountability between providers and administrators in managing appointment schedules so that patients were balanced between available providers and patient access to appointments was improved. This represents a best practice as it simplifies reporting relationships, increases accountability, teamwork and responsibility between providers and their administrative support staff. It further reflects a practice that is commonly found in the health care industry.

At the Huntington VA Medical Center in West Virginia, specialties were organized along service lines (groups of related specialty services provided by an interdisciplinary team of providers). Providers, nurse case managers and clinical and non-clinical support staff were aligned under service lines. For example, the Rehabilitation Service Line included a Service Line Chief, Physical Therapists, Occupational Therapists, Speech Pathologists, Nurse Case Managers, and support staff. This represents a best practice since creates a team-based care model in specialty care that includes interdisciplinary providers and their support staff. It represents a practice that is well established in many other health care systems.

External Leading Practices

The Walter Reed National Military Medical Center in Bethesda, Maryland, organizes clinical support staff and administrative staff for each specialty service under a physician service chief, or administrative officer that reports to the service chief, if the clinic is larger. This practice of aligning providers and dedicated support staff under the service chief is designed to promote teamwork, continuity of patient care, and development of specialized care knowledge among all support staff so they can practice at their highest functional level. The nurse executive of the facility maintains professional responsibility over the scope of practice by nurses, but staffing and day-to-day patient care is under the direction of the service chief.

At the Kaiser Permanente Northern California Region, outpatient nursing and administrative staff are employed by the physician-owned Kaiser Permanente Medical Group, not the hospital, and report to the physician leader of each specialty practice. This reporting structure is designed to reinforce teamwork, communication, and accountability to the specialty service. The Director of Nursing guides nurses in their scope of practice, which is required by law. Inpatient support staffing differs from ambulatory services, in that inpatient support staff are employees of the hospital and have different reporting lines to providers, who are employed by the physician-owned Kaiser Permanente Medical Group. Although reporting lines are different, all inpatient providers and support staff are expected to build trusting relationships and work effectively as a team.

D.3 Managing Staff Variances

VA Leading Practices:

At the Fargo VA Health Care System in North Dakota, nurse administrators use several techniques to flex nursing staff to address daily staffing variances across inpatient units and outpatient clinics. These techniques include: designated intermittent staff assigned to specific inpatient units; a certified nursing assistant (CNA) float pool; 0.3 part-time FTE staff scheduled that could flex up to 0.5 FTE to address staffing variances; cross-trained staff to flex across similar units/services; and staggered/overlapping shifts to handle increased patient volume due to admission and discharges (e.g. transition between day and evening shifts). This represents a best practice because it provides proactive strategies to manage staff absences and reduces the reliance on redeploying staff from one unit/clinic to staff another. Float pools represent a practice commonly found in the private sector.

At the Houston VA Medical Center in Texas, nurse administrators use CareWare, a commercially available nurse staffing software to monitor and address daily staffing variances. This staffing software is utilized for nurses and support staff across all inpatient and outpatient care areas. The benefits of this software have been particularly realized in the Med-Surg units, where daily staffing variances are more unpredictable due to patient acuity, patient volume, and other patient needs (e.g. CO's). In the Med-Surg units, nurse managers work with the staffing coordinator(s) to address staffing variances on a shift-to-shift basis. Nurse and support staff schedules are entered and tracked in CareWare. Any unfilled shifts are "red-flagged" so the nurse managers and staffing coordinators know where their vacancies are per shift. Before the end of each shift, the designated nurse manager updates the patient acuity and census in their software, which automatically updates the target NPPD/FTE needs for the next shift. Then the software alerts nurse managers to identify any additional staff needed or extra nurses that could be moved to fill a gap in another unit. Since all of their nurses are cross-trained, nurse managers are able to continuously flex and move their staff to address variances on a shift-to-shift basis.

External Leading Practices:

At Aultman Hospital, an 800+ bed Magnet® facility, implemented a central staffing office and a specialized float pool where financial incentives were provided for part-time nurses to pick up additional shifts. Aultman Hospital's staffing methods have increased nursing autonomy, which has improved nursing satisfaction scores and turnover rates which remain below other Magnet®® hospitals' average turnover rate.[287]

Using a float pool has become a major strategy for health care organizations to help staff the facilities replacement factor for leaves for example, sick call-ins, vacations, or to cover high-volume needs. [288]

[287] Good, E., & Bishop, P. (2011). Willing to walk: A creative strategy to minimize stress related to floating. *Journal of Nursing Administration, 41*(5): 231-234.

[288] Zuzelo, P. (2010). *The Clinical Nurse Specialist Handbook*. Jones & Bartlett Publishers. Retrieved from: https://books.google.com/books?id=CAakBRDO9SAC&dq=staffing+models+including+a+replacement+factor&source=gbs_navlinks_s

A best practice from the private sector is to have a standardized policy for tracking and monitoring planned (vacation time) and unplanned absences (sick calls) in clinics to minimize the impact of staffing gaps. The policy addresses vacations and paid time off within which vacations need to be reported at least 90 days prior and sick days are reported as soon as possible. An issue for VHA is the overtime policy which states that provider overtime must be compensated in time within a week. For example, if the provider works 4 hours of overtime this week, they are entitled to 4 hours paid time off next week. This causes problems in the efficient scheduling of clinic hours. Using private sector practices, VHA can measure staffing gaps or provider cancelled clinics. These gaps can be compared monthly with how many clinics a provider cancelled against the clinic target (<8 percent). This is helpful to also link targeted direct clinic hours to actual direct clinic hours. Provisions to the policy governing gaps would include a clause that states, for example, every cancelled clinic, the provider needs to make up the clinic within a month, for example.

D.4 Mitigating Space Shortages

VA Leading Practice

At the Boston VA Health care System in Massachusetts, clinic space is at a premium. An average room at the facility is 500 square feet, whereas the industry standard is 1,000 square feet. Outpatient space is small and inpatient areas have four-bed wards. To work around the space shortage, the Boston VA has expanded clinic hours to provide care in the evening and weekends, a strategy rarely used by VA medical facilities to alleviate space shortages for specialty clinics. This is highlighted as a best practice because many VA facilities face a similar space shortage. Since VHA construction projects can take a prolonged amount of time to be planned, designed, and constructed, extending clinic hours is a feasible solution. This best practice can be leveraged across facilities, but successful implementation depends on providers' availability and willingness to take on non-traditional work hours.

External Leading Practices

At the Kaiser Permanente Northern California Region, outpatient specialty clinics have implemented care models that use multiple modes to deliver patient care (face-to-face, telephone, and direct messaging). These multiple modes are important to make the most efficient use of clinic space and to maximize access to face-to-face appointments for first-time patients. Kaiser Permanente has in the past implemented standards where every provider had one office and two exam rooms. However, with the growing use of other modes for delivering care, especially for follow-up patient appointments, they experienced too many underutilized rooms.[289] Kaiser Permanente found that many clinics can achieve exam room rations of two rooms per provider if call centers are used effectively and technology, such as eConsults or direct messaging, is used to provide existing patients with alternate ways to communicate with their provider. For example, today Orthopedics clinics typically have two rooms per provider to

[289] Interview with Mary Ann Mason, Dr. Stephen Thomson, and Jeff Schnell, March 24, 2015.

reflect a need for more procedures requiring face-to-face appointments, whereas endocrinology often has room ratios below 1.5 rooms per provider due to the greater use of eConsults and direct messaging.[290]

The Mayo Clinic in Rochester, Minnesota has addressed space utilization by moving away from standard room ratios to a utilization standard (percentage of the day that a clinic uses a room). Based upon the utilization metric, rooms can be given to a clinic and taken away based on this standard.[291] Mayo uses a hoteling concept for clinic areas; exam rooms are clustered by hallways and clinics may be in hallway A one day and hallway B the next day. Typically, there are 4 exam rooms per cluster, and providers move back and forth.[292] Physicians have academic offices, APPs and RNs have shared office spaces, LPNs and CAs have workstations in the clinical area, and residents use work rooms in the clinical space.[293] Since the hotel model means that you may be in a different area on any given day, clinical teams work in the centrally located and shared clinical space, and physicians may go to their academic offices when not seeing patients.

D.5 Improving Accuracy of Workload Capture

VA Leading Practices

At the Detroit VAMC in Michigan, facility leaders found productivity within the Nephrology clinic was 12 percent off the national median. They investigated and found that workload within the Nephrology clinic was not being captured accurately. The Section Chief worked with the providers to address the coding issue and productivity increased from 12 to 94 percent. The facility highlighted this success and other clinics, as a result, became more aware of the importance of accurate coding.

This is highlighted as a best practice because many facilities we visited may not be capturing workload accurately, thus inadequately (and negatively) representing their productivity. It is important that clinic leadership and providers participate in understanding the workload capture process, whether or not it represents their true workload, and take an active role in ensuring workload is accurately documented in coding.

Nurses at Fargo and Palo Alto defined an optimal staffing mix by establishing a process to promote nurses to work at the top of their licensure. The first process step was to identify all tasks/patient care interventions conducted per unit/clinic based on patient population. They then mapped tasks to role (e.g. RN, LPN, support staff) and calculated staff mix based on HPPD or task time. Additionally, the nurse managers updated job descriptions to include specific tasks with functional statements. Finally, the nurses conduct education sessions to teach staff how to delegate tasks mapped to non-licensed staff. The value of this process optimized nurse and support staff roles/responsibilities, clarifies delineation of tasks between licensed and non-licensed staff, reduces costs by hiring more support staff, and promoted nurses working at the

[290] Ibid.

[291] Ibid

[292] Interview with Mary Ann Mason, Dr. Stephen Thomson, and Jeff Schnell, March 24, 2015.

[293] Ibid

top of their license, which results in increased provider productivity by alleviating the provider workload.

External Leading Practices

CACs are increasingly being used by the private sector to improve coding consistency and reduce errors. The AHIMA Foundation and Cleveland Clinic reported the results of a 2013 study of the impacts of implementing CAC software in the Journal of AHIMA.[294] The study found that CAC software, when paired with professional coders, reduced coding time, improved coding consistency, and resulted in fewer missed or incorrect codes over time.

At the Kaiser Permanente Northern California Region, coding is not used for the purposes of billing. Kaiser Permanente uses coding to improve outcomes, track what has been done consistently, generate information about patient care practices that can be correlated to outcomes, drive performance improvements, and accurately report the risk profile/acuity of their patient population to Centers for Medicare and Medicaid Services. Kaiser Permanente does not employ professional coders; physicians code their own patient encounters. Kaiser physicians, for the last five years, have been coding using a proprietary software application, sometimes referred to as "their secret weapon." This application prompts physicians on how to code an encounter, and physicians together decide what they will title each of the operations.

In a recent study, a hospital utilized a clinical database to track and calculate nurse workload measures such as total treated patients, midnight census, and admission, discharges, and transfers. These measures were tracked as a unit activity index to identify nursing workload. These indexes were compared over time, by shift, day of week, and month within the intensive care and medical-surgical units. Between 1994 and 2006, the unit activity indexes increased, which required additional staffing needs. This study showed how using technology can help capture nurse workload to facilitate staffing decisions.[295]

Appropriate skill mix allows nursing staff to work at the top of their licensure, which provides efficiency and optimal leveraging of overhead. Nurses delegating tasks to support staff can streamline their workload to expand their roles and accept added responsibilities and help lighten the providers' workload.[296]

[294] Crawford, M. (2013). Truth about Computer Assisted Coding: A Consultant, HIM Professional and Vendor Weigh in on the Real CAC Impact. *Journal of AHIMA*. 84, 7, 24-27. Retrieved from http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_050225.hcsp

[295] Baernholdt, M., Cox, K., & Scully K., (2010). Using clinical data to capture nurse workload: implications for staffing and safety. *Computers Informatics Nursing*. 2010 Jul-Aug; 28 (4):229-34. doi: 10.1097/NCN.0b013e3181e1e57d.

[296] The Advisory Board Company. (2015). For Prospective Members: Achieving "Top-of-License" Nursing Practice. Retrieved from: http://www.advisory.com/research/nursing-executive-center/events/webconferences/complimentary-webconferences/achieving-top-of-license-nursing-practice

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Appendix E Prior Report, Assessments, and Recommendations

The Assessment G team reviewed prior reports, assessments, studies, recommendations, and investigations related to VHA provider staffing and productivity to make informed decisions for this report's research, findings, and recommendations. Unique VA mission impacts on productivity were surveyed, to include medical research, medical student education, and patient care of the Veteran population.

Reports and recommendations for nationwide VHA physician staffing methodology and physician productivity standards date back to 1981.[297] In 1991, the Institute of Medicine published a report that suggested a methodology for calculating the number of physicians required, by specialty grouping, to meet VA's mission and responsibilities for patient care, education and research,[298] but it was not until January of 2002 that Section 124 of Public Law 107-135 mandated VHA establish nationwide policy to ensure that medical facilities had adequate staff to provide quality care to Veterans.[299] Each VAMC was and still is responsible for its own staffing and productivity measurements based on its facility complexity, local Veteran population, and staffing needs. Specific staffing requirements and standards exist in some settings, namely the inpatient setting, where quality dictates the number of nurses and other clinical support staff required to staff patient beds, and in the ED. In January of 2003, the Deputy Under Secretary of Health for Operations and Management charged a VHA Advisory Group on Physician Productivity with developing productivity models for physicians in VHA.[300] Staying consistent with external benchmark data from the MGMA, this advisory group developed an RVU-based model for measuring the productivity of VHA physicians. In 2007, VHA established the Office of Productivity, Efficiency, and Staffing (OPES) and began using a new, Specialty Productivity-Access Report and Quadrant (SPARQ) tool, developed to serve as a decision support tool for VAMCs to manage staffing by demonstrating possible efficiencies and inefficiencies when access measures and productivity measures are combined. The tool was designed to capture physician productivity workload for physician specialties by measuring workload by work Relative Value Units (wRVUs), number of encounters, and number of

[297] GAO. (1981). *VA Needs a Single System to Measure Hospital Productivity*. Report No. AFMD-81-23. Retrieved from http://www.gao.gov/products/AFMD-81-23

[298] IOM. 1991. *Physician Staffing for the VA: Volume I*. Lipscomb, J., editor. , ed. Washington, D.C.: National Academy Press.

[299] U.S. Department of Veterans Affairs Health Care Programs Enhancement Act of 2001. P.L No. 107-135, § 124 (2002).

[300] U. S. Department of Veteran Affairs. (2013). VHA Directive 1161 Productivity and Staffing in Outpatient Clinical Encounters for Mental Health Providers. Background information. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2891

individual patients.[301] The PACT model was formally created in 2009, dictating staffing requirements for primary care clinics.[302] At this time, there still is no standard staffing requirements or models for specialty outpatient clinics.

As physician productivity relies heavily on the support staff (includes clinical, nurses, and non-clinical, such as schedulers and other clerical support) surrounding each physician, it was important for the team to assess the nurse staffing methodology currently in place in VHA. VHA describes its nurse staffing methodology as the process for determining staffing levels based on an analysis of multiple variables to include patient or resident needs, environmental and organizational supports, and professional judgement to recommend safe and effective staffing levels at various points of care. A principal policy document for nurse staffing is VHA Directive 2010-034 Staffing Methodology for VHA Nursing Personnel.[303] It addresses staffing levels at all points of care, including inpatient units, ambulatory clinics, specialty treatment and diagnostic areas, CLCs, home care, and within the telehealth medium.

Within the last decade, the release of reports from the OIG and GAO, a Congressional mandate, and an internal Office of Nursing Services (ONS) study, has prompted the ONS to develop a standardized nurse staffing methodology. To address nurse staffing concerns, VHA Directive 2010-034 was issued in 2010 by the ONS, directing VAMCs to implement a nationally standardized nurse staffing methodology. The intent of VHA Directive 2010-034 is to standardize information data management strategies that facilitate analyses of relationships among staffing numbers, skill mix, care delivery models, and patient outcomes for multiple points of care. The ONS's plan is for each facility to utilize VHA directive 2010-034 to develop their nurse staffing plan(s).

Historically, VHA facilities have received little guidance on staffing for their facilities and have had flexibility to develop local staffing plans, as long as plans fit within their budget requirements. VHA Directive 2009-055, which expired in November of 2014, provided general directions and national assistance for medical facilities on the development, implementation, and review of staffing plans using a combination of "evidence –based professional judgment, critical thinking, and flexibility"(U.S. Dept. of Veteran Affairs Health Admin. 2009, p.1).[304] In June of 2012, a Specialty Care Physician Productivity and Staffing Plan Task Force was asked to further refine the methodology for specialty care physician productivity and staffing. At that

[301] Witness Testimony of Madhulika Aggarwal M.D., MPH, Deputy Under Secretary for Health for Policy and Services, Veterans Health Administration, U.S. Department of Veterans Affairs. (2013) Retrieved from https://veterans.house.gov/witness-testimony/madhulika-agarwal-md-mph-5

[302] U.S. Department of Veterans Affairs Health Department. (2014) *VHA Handbook 1101.10: Patient Aligned Care Team (PACT) Handbook*. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2977

[303] U.S. Department of Veterans Affairs Veterans Health Administration. (2010). VHA Directive 2010-034 Staffing Methodology for VHA Nursing Personnel. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2274.

[304] U.S. Department of Veterans Affairs Veterans Health Administration (2009).VHA Directive 2009-055 Staffing Plans. Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2107.

time, focus was given to specialties without developed staffing methods. VHA reported, as of March 2013, 54 percent of specialties had standards in place to measure their productivity and efficiency.[305] As of July 2015, 34 of VHA's 35 aggregate specialties have established standards. The standards were based on the median productivity for those practices, by complexity grouping, for the prior year. The only specialty outstanding is anesthesiology, for which a standard is being developed using the American Society of Anesthesiologists Physical Status classification system.[306]

Previous Assessments

To ensure that the Assessment G recommendations are supported by additional reviews, we reviewed several prior reports s related to provider and nurse staffing and productivity in VHA. The reports date back to 1981. Out of the 18 reports, 15 of the reports had direct research and findings on VHA providers, while the remaining contained valuable information for nursing. Recommendations stemming from these previous assessments include 1) establish a uniform method for productivity measurement, 2) create workload and productivity standards for individual specialties, and 3) provide guidance on development and review of staffing models. These provide additional support to the Assessment G findings and recommendations.

Pre 2010-2015: Provider Staffing

Past recommendations:

- Expand and implement staffing models
- Improve the human resources and recruiting process
- Improve organizational structure and alignment

[305] Witness testimony of Robert Petzel M.D. (2014). Under Secretary for Health, Veterans Health Administration. VA Accountability: Assessing Actions Taken in Response to Subcommittee Oversight. U.S. Department of Veterans Affairs to the House Committee on Veteran Affairs. Retrieved from http://veterans.house.gov/witness-testimony/robert-petzel-md

[306] Choice Act 201G Section – Data Validation Follow-Up, OPES Deliverables from Conference Call, July 27, 2015, provided by VHA OPES, July 28, 2015

Organizations:

(Pre-2010) Ind Org.[307], (2010) OIG[308], (2011) OIG[309], (2011) OIG[310], (2012) Internal VA[311], (2012) OIG[312], (2014) GAO[313], (2014) Internal VA[314], (2015) OIG[315], (2015) White House[316]

Pre 2010-2015: Provider Productivity

Past recommendations:

- Maintain agency-wide productivity measurements
- Ensure providers understand the processes
- Implement productivity standards across specialties

[307] IOM. (1991). *Physician Staffing for the VA: Volume I*. Lipscomb, J., editor. , ed. Washington, D.C.: National Academy Press.

[308] VA OIG (2011). Audit of Retention Incentives for Veterans Health Administration and VA Central Office Employees. Retrieved from http://www.va.gov/oig/publications/report-summary.asp?id=2550

[309] VA OIG. (2011) Audit of Retention Incentives for Veterans Health Administration and VA Central Office Employees. Retrieved from http://www.va.gov/oig/publications/report-summary.asp?id=2550

[310] VA OIG. (2014). Follow-Up Audit of VHA's Part-Time Physician Time and Attendance. Retrieved from http://www.va.gov/oig/publications/report-summary.asp?id=2534

[311] VA Office of the Assistant Deputy Under Secretary for Health for Policy and Planning. (2013). 2012 Patient Aligned Care Team (PACT) Recognition Survey

[312] VA OIG. (2012) Audit of VHA's Physician Staffing Levels for Specialty Care Services. Retrieved from http://www.va.gov/oig/publications/report-summary.asp?id=2806

[313] GAO. (2014). VA Health Care: Actions Needed to Ensure Adequate and Qualified Nurse Staffing. Report No. GAO-13-536. Retrieved from http://www.gao.gov/products/GAO-15-61

[314] VHA. (2014) Blueprint for Excellence. Retrieved from http://www.va.gov/HEALTH/docs/VHA_Blueprint_for_Excellence.pdf

[315] VA OIG. (2015). OIG Determination of Veterans Health Administration's Occupational Staffing Shortages Retrieved from http://www.va.gov/oig/pubs/VAOIG-15-00430-103.pdf

[316] White House. (2014). Issues Impacting Access to Timely Care at VA Medical Facilities. Retrieved from https://www.whitehouse.gov/sites/default/files/docs/va_review.pdf

Organizations:

(Pre-2010) GAO[317], (pre-2010) Ind. Org[318], (2011) Ind. Org[319], (2011) Internal VA[320], (2012) OIG[321], (2013) Ind. Org[322], (2013) GAO[323]

Pre -2010-2015: Nursing

Past Recommendations:

- Implement nurse staffing methodology
- Measure nurse staffing on patient outcomes
- Evaluate and improve recruitment and retention

Organizations:

(Pre-2010) OIG[324], (pre-2010) GAO[325], (2013) GAO[326], (2014) GAO[327], (2015) OIG[328]

[317] GAO. (1981). VA Needs a Single System to Measure Hospital Productivity. Retrieved from http://www.gao.gov/products/AFMD-81-23

[318] Hsiao W.C., Braun, P., Yntema, D., Becker, E.R. (1988). Estimating physicians' work for a resource-based relative-value scale. *N. Engl. J. Med*. 319 (13). pp. 835–41

[319] Merritt Hawkins. (2011). RVU Based Physician Compensation and Productivity. Retrieved from http://www.merritthawkins.com/pdf/mharvuword.pdf

[320] VA. (2011) Mental Health Workload and Productivity Guidance in VHA: A Brief History and Current Status. Retrieved from http://www.conference.avapl.org/pubs/2011%20Conference%20Presentations/Gresen%20Presentation--VA%20Psychology%20Leadership%202011%20final%20Part%201.pdf

[321] VA OIG. (2012) Audit of VHA's Physician Staffing Levels for Specialty Care Services. Retrieved from http://www.va.gov/oig/publications/report-summary.asp?id=2806

[322] MGMA (2014) MGMA Academic Practice Compensation and Production Survey for Faculty and Management: 2014 Report Based on 2013 Data. Retrieved from http://www.mgma.com/Libraries/Assets/Store/Surveys/8743-2014-Key-Findings-Academic-Practice.pdf

[323] GAO. (2013). Actions Needed to Improve Administration of the Provider Performance Pay and Award Systems. Report No. GAOGAO-15-61. Retrieved from http://www.gao.gov/assets/660/656185.pdf

[324] VA OIG. (2004). Evaluation of Nurse Staffing in Veterans Health Administration Facilities. Retrieved from http://www.va.gov/oig/54/reports/VAOIG-03-00079-183.pdf

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[326] VA OIG. (2014) Combined Assessment Program Summary Report Evaluation of Nurse Staffing in Veterans Health Administration Facilities April–September 2013. Retrieved from http://www.va.gov/oig/pubs/VAOIG-14-01072-140.pdf

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Appendix F Reviewed Policies, Procedures, and Directives

1. VHA Directive 1063 – Utilization of Physician Assistants (PAs)
2. VHA Directive 1065 – Productivity and Staffing Guidance for Specialty Provider Group Practice
3. VHA Directive 1066 – Requirements for National Provider Identifier (NPI) and Taxonomy Codes
4. VHA Directive 1161 – Productivity and Staffing in Outpatient Clinical Encounters for Mental Health Providers
5. VHA Directive 1663 – Health Care Resources Contracting – Buying
6. VHA Directive 1761.1 – Standardization of Supplies and Equipment
7. VHA Directive 1082 – Patient Care Data Capture
8. VHA Directive 2004-066 – Education Affiliation Agreements
9. VHA Directive 2007-015 – Inter-facility Transfer Policy
10. VHA Directive 2008-056 – VHA Consult Policy
11. VHA Directive 2009-002 – Patient Care Data Capture
12. VHA Directive 2009-038 – VHA National Dual Care Policy
13. VHA Directive 2009-055 – Staffing Plans
14. VHA Directive 2010–010 – Standards for Emergency Department and Urgent Care Clinic Staffing Needs in VHA Facilities
15. VHA Directive 2010-018 – Facility Infrastructure Requirements to Perform Standard, Intermediate, or Complex Surgical Procedures
16. VHA Directive 2010-024 – Changes in Compensation and Pension Examination Reports
17. VHA Directive 2010-027 – VHA Outpatient Scheduling Processes and Procedures
18. VHA Directive 2010-034 – Staffing Methodology for VHA Nursing Personnel
19. VHA Directive 2010-040 – Health Care Resources Sharing with the Department of Defense
20. VHA Directive 2011-005 – Radiology Picture Archiving and Communication System (PACS)

21. VHA Directive 2011–009 – Physician and Dentist Labor Mapping
22. VHA Directive 2011-025 – Closeout of VHA Corporate Patient Data Files Including Quarterly Inpatient Census
23. VHA Directive 2011-029 – Emergency Department Integration Software for Tracking Patient Activity in VHA Emergency Departments and Urgent Care Clinics
24. VHA Directive 2011-032 – Availability of Medical and Surgical Supply Products for Veterans with Spinal Cord Injury/Disorder
25. VHA Directive 2011–037 – Facility Infrastructure Requirements to Perform Invasive Procedures in an Ambulatory Surgery Center
26. VHA Directive 2012-003 – Person Class File Taxonomy
27. VHA Directive 2013-001 – Extended Hours Access for Veterans Requiring Primary Care Including Women's Health and Mental Health Services at Department of Veteran's Affairs Medical Centers and Selected Community Based Outpatient Clinics
28. VHA Directive 2013-006 – The Use of Unlicensed Assistive Personnel in Administering Medication
29. VHA Directive 2014-001 – General Pay Increase and Special Rates Approved Under Title 38 U.S.C. 7455

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Appendix I Glossary

Ambulatory Care Sensitive Conditions:	Age standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for admission to the hospital per 100,000 population younger ha age 75 years.
Business service metrics	Measures of the availability or performance of a business service as provided by an application
Clinic stop	One encounter of a patient with a health care provider. The clinic stop is the workload unit of measure for space planning. One individual patient can have multiple procedures/suite stops in a single visit or in one day.
Complexity level	VA groups its 151 medical facilities into highly complex - level 1a, 1b and 1c, moderate complexity - level 2, and low complexity - level 3, facilities
labor mapping	Each VA provider's time is captured in the DSS system based on the time they spend in each activity. Clinical time, administrative time, education time, training time are all tracked through the DSS system and "mapped" back to the employee.
model of care	A "model of care" broadly defines how health services are delivered, outlining best practice care delivery by applying service principles across identified clinical streams and patient flow continuums.
provider	VA provider, for the purposes of this assessment, is defined as an independent licensed practitioner (Physician Assistants [PA], Nurse Practitioners [NP], Doctor of Medicine [MD], Physical Therapists, Psychologists, Social Workers), taking the Health Resources and Services Administration's [HRSA] definition of independent licensed practitioner to be "a physician, dentist, NP, nurse midwife, or any other individual permitted by law and the organization to provide care and services without direction or supervision, within the scope of the individual's license and consistent with individually granted clinical privileges." Clinical Nurse Specialists are excluded from this definition. The definition of a VA provider includes providers employed full-time by VA. The scope of VHA providers includes inpatient and outpatient care, Primary Care, specialty care, dentists, and mental health care providers. Although contract and fee providers are, in some facilities, a significant proportion of care delivery teams; they are deemed out of the scope of this assessment, due to an inability to quantify staffing levels (full time equivalent [FTE]), or hours worked, as VA does not track this information.

Space gap	Space needed based on the 2023 projected workloads
Space gap as a % of need	space gap / total projected 2023 need
Telehealth	The use of electronic information and telecommunications technologies to support long distance clinical health care, patient and professional health-related education, public health and health administration. *www.hrsa.gov/**telehealth***
Total projected inventory	Total adjusted inventory + total planned new space
Total projected 2023 need	Total projected 2023 need – total projected inventory

Appendix J Acronyms

AAFP	American Academy of Family Physicians
ACO	Accountable Care Organization
ADA	American Dental Association
ALBCC	Account Level Budgeting Cost Center
AMGA	American Medical Group Association
AMGMA	American Medical Group Management Association
APP	Advanced Practice Provider
BHIP	Behavioral Health Interdisciplinary Program
CA	Clinical Assistant
CAC	computer assisted coding
CAMH	CMS Alliance to Modernize Health Care
CBOC	Community Based Outreach Clinic
CDI	Clinical Documentation Initiative
CDW	Computer data warehouse
cFTE	clinical full time equivalent
CLC	Community Living Center
CMS	Centers for Medicare & Medicaid Services
CNA	Certified Nurse Assistant
CNE	Chief Nursing Executive
CPRS	Computerized Patient Record System
CPT	current procedural terminology
ED	Emergency Department
EHR	Electronic Health Record
FFRDC	Federally Funded Research and Development Center
FTE	full time equivalent
FY	fiscal year
GAO	Government Accountability Office
GMENAC	Graduate Medical Education National Advisory Committee
HAPU	hospital acquired pressure ulcers
HBPC	Home-based Primary Care
HHS	Department of Health and Human Services
HMO	Health Maintenance Organization
HRSA	Health Resources and Services Administration
HT	Home telehealth

ICU	Intensive care unit
ID	infectious disease
LMI	Labor Management Institute
LPN	Licensed Practical Nurse
LVN	Licensed Vocational Nurse
MCAO	Managerial Cost Accounting Office
MD	Doctor of medicine
Med-Surg	Medical surgery
MGMA	Medical Group Management Association
MH	Mental Health
MHS	Military Health System
MSA	Medical Support Assistant
NA	Nursing Assistant
NCLEX	National Council Licensure Examination
NDNQI®	National Database of Nursing Quality Indicators
NHPPD	Nursing Hours per Patient Day
NIH	National Institutes of Health
NLC	Nurse Licensure Compact
NP	Nurse Practitioner
NSI	Nursing Sensitive Indicators
OIG	Office of Inspector General
ONS	Office of Nursing Services
OPES	Office of Productivity, Efficiency, and Staffing
OR	Operating Room
ORD	Office of Research and Development
OT	Occupational Therapist
PA	Physician Assistant
PACT	Patient Aligned Care Team
PAID	Personnel and Accounting Integrated Data
PC	Primary Care
PCM	Primary Care Manager
PCMH	patient-centered medical home
PCMM	Primary Care Management Module
PCP	Primary Care Provider
PD	Post deployment
PI	Principal Investigator

PT	Physical Therapist
RBRVS	resource-based relative value scale
RN	Registered nurse
R&D	Research and development
RVU	relative value unit
SAVAHCS	Southern Arizona VA Health Care System
SCI	Spinal Cord Injury
SME	subject matter expert
SPARQ	Special Productivity-Access Report and Quadrant
VA	Veterans Affairs
VACO	VA Central Office
VACI	VA Center for Innovation
VAMC	Veterans Administration Medical Center
VANOD	VA Nursing Outcomes Database
VISN	Veteran Integrated Service Network
WH	Women's Health
WHC	Women's Health Center
WOC	Without compensation
wRVU	work relative value unit