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# Examining the Impact and Implementation of Protected Administrative Time on Provider Well-Being and Service Delivery Indicators Within a Multi-State Network of Primary Care Medical Practices

Lauren Junge-Maughan

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EXAMINING THE IMPACT AND IMPLEMENTATION OF PROTECTED  
ADMINISTRATIVE TIME ON PROVIDER WELL-BEING AND SERVICE DELIVERY  
INDICATORS WITHIN A MULTI-STATE NETWORK OF PRIMARY CARE MEDICAL  
PRACTICES

by

LAUREN JUNGE-MAUGHAN

(Under the direction of Bettye Apenteng)

ABSTRACT

Background:

Primary care is integral to achieving high-quality health outcomes for the population and decreasing healthcare costs. However, primary care clinicians suffer from conflicting demands, impossible expectations, and burdensome processes. With burnout and mental fatigue increasing, leadership must find innovative programs to implement in their organizations. This mixed-methods research study assessed the impact of one such intervention, protected administrative time (PRAT), on improving provider well-being.

Purpose:

The first aim was to evaluate the association of PRAT on the service delivery indicators of primary care clinicians' productivity, average appointments per day, patient satisfaction (likelihood to recommend), clinician time to the next available appointment for new patients, established sick patients, and established patient physicals. The second aim was to describe the implementation of PRAT using the Consolidation Framework for Implementation Research (CFIR).

## Methods:

Multivariable linear and Poisson regressions were used within a difference-in-difference framework to analyze the intervention's impact on chosen service delivery indicators. The CFIR framework analyzed qualitative data from interviews and open-ended surveys collected from three stakeholders: leaders, managers, and providers.

## Results:

The PRAT intervention did not result in statistically significant differences in productivity measured in wRVUS ( $\beta = 2.96$ , [CI] -4.75, 10.67), access measured in average appointments per day ( $\beta = -0.47$ , [CI] -1.37, 0.42) and new patient sick visits ( $\beta = 2.24$ , [CI] -4.64, 9.12), or patient experience measured by likelihood to recommend ( $\beta = -0.49$ , [CI] -2.99, 2.02). There was a significant increase in two access measures: time to next available appointment for new patients ( $\beta = 18.24$ , [CI] -0.17, 36.65) and established patient physicals ( $\beta = 36.55$ , [CI] 12.33, 60.76). The CFIR analysis showed one implementation barrier, one neutral construct, and numerous implementation facilitators. Respondents felt the intervention was associated with positive actual and anticipated implementation outcomes, and respondents reported overwhelmingly positive innovation recipient impact.

## Conclusion:

This study showed that implementing PRAT was not statistically associated with worsening productivity, patient satisfaction, and reduced access to sick visits. Results of the qualitative analysis showed that providers were satisfied with the implementation of PRAT and that there

were numerous facilitators to the implementation that management could use when implementing similar programs.

Index Words: Primary care, Burnout, Patient access, Protected administrative time, Clinician well-being, Mixed methods, Consolidated framework for implementation science research

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B.A. Michigan State University, 2015

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DOCTOR OF PUBLIC HEALTH

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## CHAPTER ONE INTRODUCTION

Primary care is the cornerstone for improving the health of the United States population and achieving the triple aim of health care: improved population health, enhanced patient experience, and reduced costs (McCauley et al., 2021). Not only can primary care help us to achieve the triple aim, but it can also help to address the numerous inequities that plague the American healthcare system (McCauley et al., 2021). Many in academic and professional communities agree that primary care is, at the very least, reaching a crossroads or, even more urgent, a breaking point (Farmer et al., 2014; McCauley et al., 2021; Phillips et al., 2022). The cause of this impending breakdown can be attributed to many distinct factors, such as a lack of investment in primary care and diminishing reimbursements. Still, this paper focuses heavily on two of the biggest challenges facing primary care today: clinician burnout and patient access to primary care (Greenway, 2022). While the triple aim is a widely accepted benchmark for health system performance, some have argued for a fourth aim: improving the work life of healthcare providers (Bodenheimer et al., 2014).

The issues of burnout and access are intrinsically linked with primary care, which is projected to have a shortage of 21,100 to 55,200 physicians by 2032 (AAMC, 2019). This shortage is primarily due to individuals leaving the profession before retirement because of burnout and fewer medical students pursuing primary care (Knight, 2019). The departure of primary care clinicians will lead to fewer providers serving a growing aging population. By 2040, there are expected to be eighty million people over 65, more than twice as many as in 2000 (ACL, 2020). Adding to the complexity, a 2010 study showed that one-third of seniors have

three or more chronic medication conditions and take three or more medications (Linzer et al., 2015). This disproportionate supply vs. demand for primary care services will lead to widespread patient access issues.

Unfortunately, this problem is not just one for 10 – 15 years. The issue of access and burnout in primary care is an already growing threat, exacerbated by the COVID-19 pandemic, with 79% of primary care clinicians reporting symptoms of burnout and one-fifth reporting that they plan to leave their practices in the next two years and one-third intending to reduce hours (MD P.G, 2022). With short-term and long-term difficulties looming, health systems must prioritize implementing strategic programs to alleviate stressors and systemic issues within their primary care practices.

One health system that is working on improving this vital issue is Nuvance Health. Nuvance Health is a non-profit healthcare system from the New York State Hudson Valley into Western Connecticut. Nuvance Health has thirty primary care practices within Connecticut and New York. Nuvance Health was created when two organizations merged in 2019: Western Connecticut Medical Group (WCMG) and HealthQuest. WCMG managed the practices in western CT, and HealthQuest managed the practice in Hudson Valley, NY (except for one that is a HealthQuest-owned practice in CT and a WCMG-owned practice in NY). In line with national trends, Nuvance Health is experiencing challenges with patient access and provider burnout, which are critical areas of improvement and development for fiscal year 2023. Patient access is defined as the ability for the patient to get an acute care visit the same or the next day and a chronic care visit within 60 days of the request. Currently, for many providers, these numbers can be closer to one week for acute care appointments and 120+ days for chronic care

appointments such as a physical. Another issue is provider turnover and burnout- with MD/DO turnover at 22% (benchmark is 11%) and APP turnover at 17% (benchmark is 10%).

To combat these issues, Nuvance Health instituted protected administrative time (PRAT) for primary care providers. Protected administrative time refers to providing a standardized schedule for primary care providers to complete administrative work. Administrative work refers to activities that could be patient-facing, such as creating and documenting notes/encounters, answering patient messages, or other behind-the-scenes provider tasks. PRAT privileges are given to providers with leadership duties, such as medical or residency program directors. A significant difference in the Nuvance PRAT time is that it is available to all physicians with a 0.6 FTE or greater. For this proposal, a standard workweek schedule for a full-time (1.0) FTE clinician is 40 hours per week, with 37.5 hours of patient interaction and 2.5 hours of administrative time. The new PRAT schedule is that full-time providers work 40 hours per week, with 34 hours of patient-facing time and 6 hours of protected administrative time.

*Purpose Statement:*

This applied doctoral project examined the implementation and outcome of protected administrative time on patient access and service delivery indicators within a multi-state primary care medical practice network.

*Research Questions/Hypothesis:*

*Specific Aim #1:* To evaluate the effect of PRAT on the service delivery indicators: a) primary care clinicians' productivity (wRVUs), b) average appointments per day, c) patient



satisfaction (likelihood to recommend), and d) clinician time to the next available appointment for new patients, established sick patients and established patient physicals.

*Specific Aim #2:* To describe the implementation of protected administrative time (PRAT) using the Consolidation Framework for Implementation Research (CFIR).

*Hypotheses for Aim #1:*

H1: PRAT participation is negatively associated with primary care clinicians' productivity (wRVUs).

H2: Average appointments per day not associated with PRAT participation.

H3: PRAT participation is negatively associated with patient satisfaction (likelihood to recommend)

H4: PRAT participation is positively associated with the clinician's time to the next available appointment for new patients, established sick patients, and established patient physicals.

*Delimitations:*

The quantitative data used in this study was derived from seventy-one primary care providers employed at Nuvance Health and practice in primary care offices within New York and Connecticut. The PRAT initiative began in October 2022, and 83% of primary care clinicians opted to participate. The baseline data collected on these providers were broken down into quarters from fiscal years 2020, 2021 and 2022. The intervention data period was the fiscal year 2023 and the first quarter of fiscal year 2024. There were seventeen quarters in total.

*Significance:*

There is a growing threat of clinician shortages and burnout in primary care. Health systems need to find innovative ways to address these issues and keep providers wanting to work in primary care. To date, there has been limited research on the impact of protected administrative time on provider-level outcomes. Only one small study with nineteen residents was found during the literature review process, which showed improved burnout rates. The findings of this study will add to the literature related to this initiative and contribute new knowledge for other health systems to consider when looking to implement similar programs. The surveys and interviews conducted using the Consolidated Framework for Implementation Research (CFIR) address the human impacts of these work/life balance projects on burnout and provider satisfaction.

*Outline of the Remaining Chapters:*

The remaining chapters of this dissertation will be as follows:

Chapter 2 will review the current literature on primary care in the United States, patient access to primary care, primary care provider burnout, and protected administrative time. The chapter will also discuss the two frameworks used for this study: the Consolidated Framework for Implementation Research (CFIR) and the Framework for Primary Care Organizations. The study design and methodology that describes the recruitment and data analysis will be discussed in Chapter 3. The results of the study will be discussed in chapter 4. Chapter 5 discusses the results compared to the current literature and the recommendations to leadership, researchers, and practitioners.

*Definitions of Important/Technical Terms:*

**Advanced Practice Providers** – Nurse Practitioners or Physician Assistants

**PRAT:** Protected Administrative Time. – protected time allotted for clinicians to address patient needs

**Face-to-face time:** bookable patient slots, excluding lunch.

**Administrative Time:** time allotted for clinicians to address messages, clinical questions, inbox, paperwork, and contact patients.

**wRVUs** – Work Relative Value Units – a measure of provider productivity.

**Likelihood to recommend** - % of patient satisfaction scores that are 9-10 or excellent for the provider.

**Time to Next Available Appointment** – the days from when a patient calls the provider's office to request an appointment to when the provider sees them

## CHAPTER TWO

### REVIEW OF THE LITERATURE

#### Chapter Summary

This literature review included peer-reviewed journals and articles. A comprehensive literature review was conducted using multiple medical, administration, and business databases, including PubMed and Google Scholar. The literature review was limited to published information from 2013 – present and English language publications. The keywords for this search were *state of primary care and primary care providers in the United States, primary care burnout, primary care patient access, protected administrative time, protected time, and service delivery indicators*. This chapter comprises six sections: 1. State of Primary Care Providers in the United States; 2. Primary care Burnout; 3. Service Delivery Indicators 4. Primary care patient access; and 5. Protected administrative time.

#### *State of Primary Care and Primary Care Providers in the United States*

In the United States, primary care is the foundation for comprehensive healthcare delivery and service (Levine et al., 2018). Primary care providers are typically responsible for managing various conditions and illnesses, acute and chronic, from children to the elderly (Basu et al., 2019). Primary care providers include physicians, medical doctors (MDs) or Doctor of Osteopathic Medicine (DO), and advanced practice providers (APPs), who can be either nurse practitioners or physician assistants. It is agreed that primary care includes those who practice family medicine, internal medicine, general pediatrics, and geriatrics (McCauley et al., 2021). Routine and comprehensive primary care has been associated with lower costs, reduced

disparities, and better patient outcomes (Levine et al., 2018). More primary care physicians in a community have been associated with lower mortality rates within the population, with every ten additional primary care physicians per 100,000 people seeing a 51.5-day increase in life expectancy (Basu et al., 2019). Specifically, this increase in mortality was seen in reduced cardiovascular, cancer, and respiratory mortality (Basu et al., 2019). Unfortunately, the mean density of primary care physicians decreased from 46.6 per 100,000 people in 2005 to 41.4 per 100,00 people in 2015, with the hardest hit being rural areas (Basu et al., 2019). Despite these positive outcomes associated with primary care, expenditures only accounted for 5.4% of U.S. healthcare expenditures in 2016 (Martin et al., 2020), even though 35% of all healthcare visits are to a primary care provider (McCauley et al., 2021). In contrast, inpatient spending was 25.7%, and specialty expenditures were 16.5% of US healthcare expenditures (Martin et al., 2020). Due to this lack of spending on primary care, the United States has fallen behind the rest of the developed world in health outcomes, even though it has the most expensive and advanced healthcare system in the world (Ellner et al., 2017).

This general lack of investment in primary care cascades throughout the system, creating a supply and demand imbalance due to too few providers available to service a growing and complex patient population. In 2030, primary care is expected to have only a 6% increase in family physicians and a 13% increase in demand for family physicians (HRSA, 2021). On a more positive note, the number of nurse practitioners and physician assistants is expected to have a 107% increase and a 42% increase, respectively; however, this increase will not be able to make up for the demand for physicians with only 15.5% of the population wanting the services of an NP or PA (HRSA, 2021). The coming shortage of providers also appears to vary by region, with Mississippi, New Mexico, and Louisiana being projected as having the most severe

physician shortage ratios at 120 (Mississippi), 101 (New Mexico), and 100 (Louisiana) physicians per 100,000 people in 2030 (Zhang et al.,2020). Massachusetts and Vermont are projected to have a surplus of physicians at -145 and -95 per 100,000 people (Zhang et al.,2020). Although the United States now has more physicians per capita than at any other time, this has not eased the shortage of primary care physicians (Hackey et al., 2018). This issue has been attributed to a few key factors. First, the level of debt when leaving medical school is ever-growing, with debt rising from \$46,500 in 1978 to \$161,300 in 2011 and median 4-year cost for private and public schools being \$306,000 and \$233,000, respectively (Hackey et al., 2018). These higher education costs often push medical students to choose non-primary care specialties because they need to pay down their financial burden once they enter the workforce. A study by Faber et al. 2016 showed a strong correlation between medical students filling a residency program and the competitiveness of a specialty and the physician's salary within that specialty. Their study showed that primary care specialties had a lower median salary rate vs. specialty (\$228,684 vs. \$413,915) and a lower competitive rate (53% vs. 73%) (Faber et al., 2016). These disparities in salary and competitiveness for primary care vs. specialty drive many medical students away from primary care as a career. To combat this issue, some medical schools, such as the New York University School of Medicine, have announced that they would eliminate tuition to encourage enrollment (Zhang et al.,2020). Still, programs that opt for such a drastic measure are scarce.

The second factor in the low turn-out of medical students entering the primary care pipeline is the perceived workload and stress of the primary care physician (Zabar et al., 2019). In a recent survey, 29% of primary care physicians reported being overworked, with (52.5%) reporting that they are at capacity in their current patient load (Hackey et al., 2018).

Additionally, in the 2022 Survey of America's Physicians, administered by the Physician's Foundation, 85% of primary care doctors described administrative burdens as the number one challenge impacting primary care. This overextension of the primary care provider workforce pushes medical students to choose a more competitive specialty, pay a better salary, and have a better work/life balance, a decision often heavily influenced by the sizable portion of debt they take on when attending medical school.

The second area that primary care needs to improve is the retention of current providers and staff. On the provider side, some of this is due to retirements, with the number of primary care physicians over the age of 65 increasing by more than 274% (Sabety et al., 2020) and with the median age of retirement at 66.1 years of age (Peterson et al., 2016). However, in other cases, it is due to providers leaving their current organization or the profession. In a 2015 study, it was estimated that 6.8% of primary care clinicians leave their practice each year, with 30% aged 35-49 stating that they would go in the next five years (Reddy et al., 2015). Another study showed that 1 in 5 physicians intended to reduce clinical hours in the next year, and 1 in 50 intended to leave medicine altogether to pursue a different career (Sinsky et al., 2017). A more recent 2022 survey by CHG Healthcare of over 500 primary care clinicians found that 43% of them had changed jobs in the last two years, and 35.2% stated that work-life balance was the biggest motivator for the change. We will cover physician burnout in more detail in the next section. It is not just the turnover of providers that negatively impacts primary care but also clinical and clerical staff turnover. In a 2022 survey of over 1500 primary care providers, 29% said that they had experienced a reduction in staff, with most experiencing a decrease in staff in positions such as nursing (90%) or medical assistant (86%) (Physician Foundation, 2022). The turnover rate varies across different sectors of the country, with the Department of Veteran Affairs reporting

turnover rates at 15% across its U.S. practices, a study in Ohio stating 53% over two years, and a study in Oklahoma reporting 46% in the preceding year (Baron et al., 2020). Turnover in primary care impacts many different areas. First, it is highly detrimental to the continuity of care for patients, with one study showing an increase in emergency, specialty, and urgent care use up to two years after the loss of a primary care physician (Sabety et al., 2020). Second, it is costly to organizations and the country at large, with studies estimating the cost of turnover and hours reduction of physicians to be \$4.6 billion per year (Shasha et al., 2019).

The COVID-19 pandemic has amplified many of the challenges that primary care faces and heavily disrupted the delivery of care (Sirkin et al., 2023). A scoping review found three main change areas within primary care (Khan et al., 2023). First, a rapid shift occurred to video telemedicine or telephone visits vs. in-person visits, with one study finding that to manage patients safely, practices quickly modified their operations by seeing over 81% of patients with respiratory symptoms to a telemedicine appointment with over 80% of those same clinics never having used a telehealth platform before March 2020 (Keppel et al., 2022) and 40% stating that they did not receive training for virtual delivery (Donnelly et al., 2021). Second, on the patient's side, this shift to telemedicine meant that many patients did not have face-to-face contact with their providers for months, which led to a delay in treatment for chronic conditions such as cancer, heart disease, and mental health concerns (Khan et al., 2023). In more recent times, with things opening again, this has shifted to many people seeing their primary care clinician's in-person and being diagnosed with a new condition or illness potentially preventable had it been caught earlier (Khan et al., 2023).

Third, providers and staff experienced the same social isolation and anxieties as the general population with the added pressure of trying to care for those in the community, with



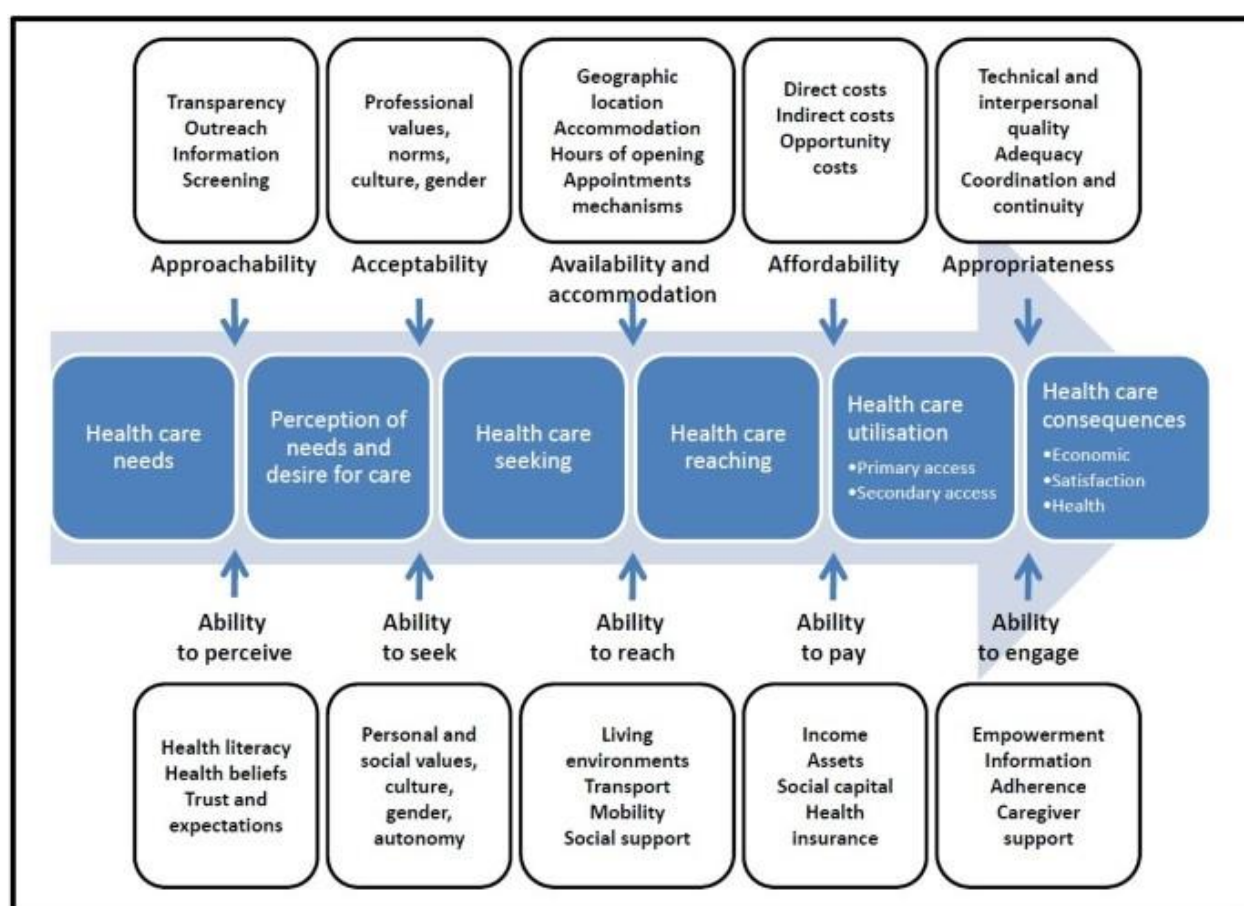
studies finding that the pandemic disrupted teamwork, connectedness, and communication within practices (DePuccio et al., 2022). There were increases in anxiety, depression, stress, and physical health effects such as sleep problems, exhaustion, and headaches (Khan et al., 2023). These concerns highlight the importance of management adopting supportive strategies for staff and clinician wellbeing (Khan et al., 2023). These rapid changes to workflow, operations, and processes are still ongoing today. They are leading to a decline in patient volumes and reimbursements, causing layoffs, furloughs, and practice closures in some cases (Sirkin et al., 2023).

#### *Patient Access to Primary Care*

Despite the significant challenges that primary care faces in the United States, it remains “the largest platform for continuous, person-centered, relationship-based care that considers the needs and preferences of individual family and communities “(McCauley et al., 2021, page 1). Access to primary care is a cornerstone of improved health outcomes, with a lack of access being associated with an increase in more expensive services such as the emergency room or specialists (Selby et al., 2018). Access to primary care is a complex topic, and patient, practice, and system factors affect the outcome (Selby et al., 2018). Access is broadly defined as the right or opportunity to enter a location or the ability to use the services that are in proportion to their needs (Jean-Frederic et al., 2013). Patients often report difficulty accessing services for acute needs, with fewer than half of acute visits involving a primary care physician and an increasing number occurring within other venues, such as urgent care or the emergency room (Vogel et al., 2019). Jean-Frederic et al. 2013 suggested five dimensions of accessibility: approachability (people facing health needs can identify the existence of a service that could help), acceptability (cultural and social factors that determine if a person could accept the service), availability

(services can be reached physically and timely), affordability (people can spend resources and time on services) and appropriateness (denotes fit between services and client's needs). These five dimensions corresponded to five abilities of populations: the ability to perceive, the ability to seek, the ability to reach, the ability to pay, and the ability to engage (Figure 1) (Jean-Frederic et al., 2013). This framework helps us conceptualize access that relies on practice-based and social determinant-based factors to describe and improve.

*Figure 2.1 – Five Dimensions of Access (Jean-Frederic et al., 2013).*



### *Approachability*

Approachability refers to the ability of patients facing a health need to identify a needed service. This relies on the practice's ability to effectively communicate information to the patient about their services and for the patient to understand which services are for them. In practice,

health systems often use strategic marketing to get information about their services using the four Ps of marketing: product, price, place, and promotion (Berkowitz et al., 2022). Product refers to items such as a specific medical procedure the facility performs or a device they use (Berkowitz et al., 2022). Price refers to the transparency with which a company advertises the cost of services (Berkowitz et al., 2022). Many people, due to high deductible health plans or lack of insurance coverage, may be sensitive to the cost of healthcare, and thus, it may behoove practices to advertise their prices. Indeed, in some states, it is a requirement for health systems to display the prices of services (Berkowitz et al., 2022). Place refers to advertising the location and hours of service, with many healthcare systems having a more strategic mindset regarding where a practice location is placed (Berkowitz et al., 2022). Finally, promotion refers to “informing the marketplace that the organization has developed a response that meets its needs and that the exchange should be consummated” (Berkowitz et al., 2022, page 1). Promotion in today’s world is traditional billboard advertisement, strategic social media campaigns, and targeted online ads to get the information out to specific geographic or demographic populations (Berkowitz et al., 2022).

On the patient side, the concept of health literacy plays an essential role in the approachability of health care. Health literacy is how individuals can obtain and understand information about health and health services (Hersh et al., 2015). It is estimated that one-third of U.S. adults have limited health literacy. While, on average, adults read at an eighth-grade level, more than 75% of patient education materials are at high-school or college reading levels (Hersh et al., 2015). Promoting health literacy includes using plain language, easy-to-read materials, visual aids, and printed materials (Hersh et al., 2015). These strategies can help improve the approachability of healthcare services and improve access.

### *Acceptability*

The challenge of acceptability in healthcare is to ensure that the needs of patients from diverse cultures and backgrounds are met (Jean-Frederic et al., 2013). For example, in some societies, it is forbidden for a woman to seek care from a man, so it would reduce the acceptability of care if all the providers within the patient's service area were men (Jean-Frederic et al., 2013). Practices must be able to accommodate patients with distinct cultural backgrounds to have services that meet the acceptability requirement.

### *Availability*

Timeliness has been recognized as critical in improving healthcare outcomes and overall system performance. Delays in care can negatively affect morbidity, mortality, and quality of life (Kaplan, 2015). Department of Veterans Affairs data has shown that new primary care appointment wait times can range from 2 to 122 days across all VA facilities (Institute of Medicine, 2015). In 2017, in a survey of physician wait times in major metropolitan areas, family medicine physicians recorded some of the highest levels at an average of 29.3 days, up from 20.3 days in 2009 (Merrit Hawkins, 2017). Many health insurance plans have standards that practices are contractually obligated to meet for timeliness of care. For example, Anthem of Connecticut requires that preventative care appointments be available to patients within 45 days, urgent care be available within 24 hours, routine care with symptoms be available within five days, and the ability for members to access their clinician after-hours 24/7 and 365 days per year (Anthem, 2023).

### *Affordability*

The concept of affordability has been heavily studied in economic studies and is seen as a central tenant of patient access. The ability of a patient to pay for services without fear of catastrophic consequences is paramount to a patient's feeling comfortable enough to see care (Jean-Frederic et al., 2013). As stated above, healthcare in the United States is expensive, with healthcare spending growing at an unsustainable rate and the number of uninsured reaching 10.6% by 2028 (Shrank et al., 2021). These issues threaten the patient's ability to pay for services and may restrict access by disincentivizing patients to seek the care they may need.

### *Appropriateness*

The quality of the healthcare received by an individual relates to the idea of appropriateness of care. Patients who have less economic means may be limited in the types of services available to them, and those services may result in reduced outcomes (Jean-Frederic et al., 2013). All patients should be able to receive appropriate care for their conditions regardless of geographic, cultural, or socioeconomic factors (Jean-Frederic et al., 2013).

### *Burnout in Primary Care*

Burnout is a long-term stress response to chronic personal and professional issues on the job (Maslach et al., 2016). The three over-arching dimensions of burnout are a feeling of overwhelming exhaustion, cynicism or detachment, and a sense that you are ineffective or lack accomplishment in your role (Maslach et al., 2016). Primary care physicians have some of the

highest rates of burnout, with rates even before the pandemic at 48% (Abraham et al.,2018). The pandemic has escalated the problem of burnout, with data from 2021 showing that provider burnout is now at 55% (Bhardwaj, 2022). Primary care providers have often been overlooked during the pandemic because of the focus on inpatient doctors treating admitted patients (Nishimura, 2022). However, as stated before, primary care experienced massive shifts in treatment delivery during the pandemic, such as the increased use of telemedicine and the need to rapidly share ever-changing information with patients (Nichimura, 2022). Primary care clinicians tend to be some of the most trusted sources of information for patients, families, and communities (Erickson et al., 2022). As such, during the pandemic, they were often tasked with treating disease and providing much-needed information to patients regarding vaccines, returning to work, and other public health-related duties (Erickson et al., 2022). They were also tasked with dealing with an increase in visits related to mental health concerns and social isolation (Donnelly et al., 2021). Primary care also had to be adaptable to new guidelines around masking, physical distancing, and testing to keep its staff and patients safe (Krist et al.,2020). As the pandemic de-escalates, primary care practices are now reeling with the consequences of the pandemic: patients with COVID-19 complications missed treatment for acute or chronic conditions, uncontrolled chronic disease, mental illness, and the more significant social needs and expectations of patients (Krist et al.,2020).

These past three years have magnified deep-rooted issues within healthcare and caused many clinicians to show more significant signs of stress. A 2020 survey indicated that 29.8% of respondents reported feeling stress, 24.1% reported experiencing anxiety, and 13.5% reported experiencing depression (Scheffler et al.,2020). Several risk factors associated with burnout include long working hours, excessive workloads, the need for comprehensive documentation in

electronic medical records, and decreased control over the work environment (Patel et al.,2018). The workload is a specific area for concern, considering that primary care providers can have a panel size (number of patients under their care) of anywhere from 400-2959, with an average of 1546 and a median of 1350 patients (Mayo-Smith, 2022). Person-level factors involved are whether an individual is very self-critical, has sleep deprivation, engages in harmful coping mechanisms, has perfectionism, and lacks a support system (Patel et al., 2018). Female providers are 2-3x more likely to experience symptoms of burnout (Scheffler et al.,2020). Although these person-level factors are pertinent, they are not as crucial as organizational-level factors; a respondent from a survey of primary care providers said that no matter how positive you are, the work environment in primary care will eventually become a problem (Dillon et al., 2019).

From an organizational standpoint, physicians who work full-time, work more than 40 hours per week, work extended hours on the weekend, or have elevated levels of staff turnover in the practices are more likely to experience burnout (Abraham et al.,2018). Additionally, burnout rates were higher for physicians in nonsolo practices vs. solo practitioners or those who work for practices owned by large healthcare systems vs. those who work in physician-owned practices (Abraham et al.,2018). In a survey of primary care providers, several reasons were cited for burnout in practices: first, primary care provides less revenue to the organization and typically receives less staffing resources; second, since everything is linked to primary care and they oversee care coordination, they tend to have a higher burden of in-basket messaging from patients, colleagues, labs, pharmacies, and others (Dillon et al., 2019). Focusing on needing face-to-face visits for organizational revenue also drives burnout (Dillon et al., 2019). From the provider's perspective, organizations are increasingly focused on the business of healthcare and

are putting increasing pressure on clinicians to meet their productivity or performance metrics (Dillon et al., 2019).

In addition to person-level and organization-level factors, the seed of burnout can be introduced by the culture of medicine. Many providers are drawn to the career by a calling or wanting to be in service to others (Nedrow et al., 2013). They want to influence people's lives and begin valuing other needs above their own (Nedrow et al., 2013). This is all reinforced in school and training, where expectations of duty, service, excellence, and compassion are touted and taught (Nedrow et al., 2013). While these characteristics are admirable, there can be a dark side if not balanced appropriately. Figure 2 shows how positive values can contribute to burnout symptoms when not managed appropriately (Nedrow et al., 2013). While the areas of service, excellence, curative competence, and compassion are vital to the value and culture of medicine, they can lead to issues of deprivation, invincibility, omnipotence, and isolation, which can cycle into compassion fatigue, emotional exhaustion, ineffectiveness, and depersonalization (Nedrow et al., 2013). These characteristics of medicine are not disappearing anytime soon and were only exacerbated by the COVID-19 pandemic.



Figure 2.2 – Framework for linking culture norms in medicine to burnout factors

(Nedrow et al., 2013).

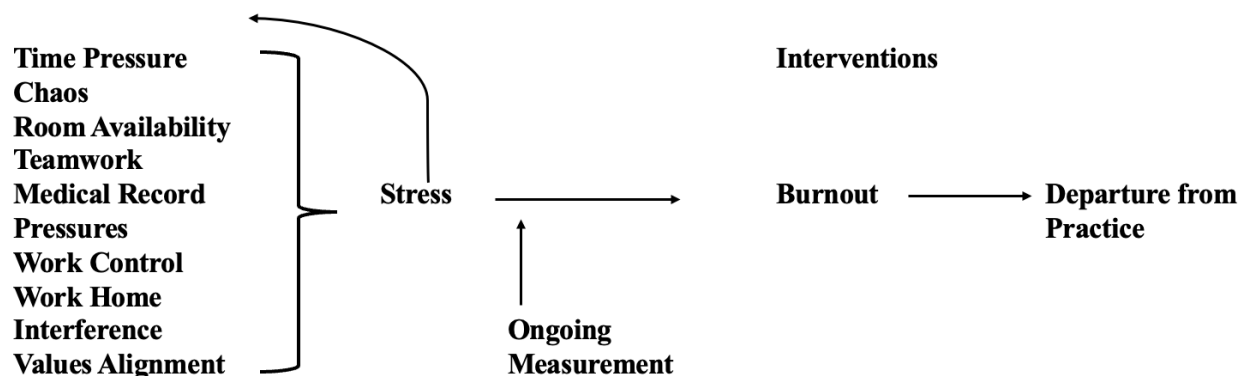
Framework for linking cultural norms in medicine with burnout factors and potential interventions			
Positive Value	Negative Potential	Burnout Factors	Potential mental training interventions
Service	Deprivation	Compassion Fatigue entitlement	Reframing appreciation and gratitude
Excellence	Invincibility	Emotional Exhaustion	Mindful self-compassion inner critic awareness
Curative Competence	Omnipotence	Ineffectiveness cynicism	Self- awareness General listening
Compassion	Isolation	Depersonalization	Connection and community Silence as energizing

The outcomes associated with physician burnout are mixed, with some studies touting a connection between burnout and increased patient safety incidents, reduced patient satisfaction, and poorer quality of care (Panagioti et al., 2018). Others find no significant impact on the quality of care or medical errors (Rabatin et al., 2016). Organizational outcomes are more apparent; a provider who experiences symptoms of burnout is less satisfied with their work and more likely to leave the practice (Rabatin et al., 2016). One study showed that burnout contributed to turnover

for primary care clinicians but not among staff and that burnout clinicians reported low work engagement (Willard-Grace et al., 2019). Burnout also adversely affects patient-provider communication (Chung et al., 2020).

Research on interventions to improve clinician burnout has been conducted but with mixed results (Melynk et al., 2020). Most of these studies focused on a few areas of fostering wellness, such as mindfulness interventions, work-life balance, stress reduction, resilience, and lifestyles (Melynk et al., 2020). The studies with the most substantial results centered around using a mindfulness session as the intervention, with a statistically significant decrease in reported stress and anxiety for those who participated (Melynk et al., 2020). Few studies look at burnout interventions at the organizational and personal levels. One study looked at embedding a pharmacist on the care team to help ease the burden of medication management on the physician, with providers reporting improved work-life balance (White et al., 2020). A clinician survey provided some suggestions for improving burnout on the system level, such as reducing the emphasis on productivity and metrics, limiting panel sizes, spending more time discussing medicine vs. business, celebrating accomplishments, and reallocating support staff (Dillon et al., 2019). Another survey showed that physicians enjoyed working in a more flexible environment, with blended schedules of in-person and telehealth visits (Sullivan et al., 2022). Linzer et al. 2014 proposed one conceptual model for quality improvement at the organizational level for self-care and burnout reduction. Figure 3 shows a feedback loop for stress, burnout, and turnover on the managerial level and some contributors to these issues, such as time pressure, chaos, room availability, teamwork, EHR pressure, work control, work-home interference, and values alignment.

Figure 2.3 – Feedback Loop for Burnout on Organizational Level (Linzer et al., 2014)



Linzer et al., 2014 also proposed some potential interventions that could improve burnout on the organizational level, such as ensuring that metrics for institutional success include physician satisfaction and well-being, incorporating mindfulness, decreasing stress from EHRs, and addressing adverse work conditions. It also has a pool of providers that can cover a provider out of the office. These developing models allow physicians to control their work schedule, supporting manageable panel sizes, lengthening visits, and improving staffing ratios. These interventions allow for the reduction of numerous systematic and operational concerns that exacerbate burnout in primary care.

### *Service Delivery Indicators*

An increasing concern within healthcare is the quality and performance of our delivery systems. Many healthcare organizations now regularly measure and track quality and performance metrics to drive improvement efforts and create accountability for achieving goals

(Smith et al., 2014). When evaluating the success of any initiative in the healthcare space, it is imperative to consider the merits from the perspective of healthcare leadership, which rarely implements programs that decrease financial performance or productivity. The goal of any initiative would be to improve economic status or productivity, or at worst, have no impact on them. In this light, the following measures were heavily relied on in this study and are looked at regularly by healthcare leadership:

*Work Relative Value Units (wRVUs)* provide economic value for a clinician's medical care and are an approach to accessing the value of medical services. Half of the wRVU comprises the physician's work, which means the time it takes to perform the service, physical effort, technical skill, mental effort, judgment, and stress. The other half comprises the cost of services, practice expenses, and liability (Nurok et al., 2019). The wRVU for a particular service is maintained and updated by the American Medical Association's "Relative Value Scale Update Committee," which periodically updates the value of services as the environment evolves (Nurok et al., 2019). For example, services that once required an overnight hospitalization but are now outpatient procedures would have their wRVU reduced because the time needed to perform the procedure has decreased (Nurok et al., 2019). WRVUs were never intended to measure physician performance primarily. Still, they have become the dominant domain for measuring how well a provider is producing and are often linked to financial incentives such as compensation and bonuses (Nurok et al., 2019). wRVUs are not without controversy, as they usually value specialist care over primary care services and incentivize clinicians to produce more services vs. quality services (Nurok et al., 2019). Many healthcare organizations want to move away from using wRVUs to value performance as they attempt to move away from a fee-for-service model and towards value-based care, but that is currently out of reach for many health systems as the

fee-for-service model is still very much ubiquitous in the United States (Nurok et al., 2019). At Nuvance Health, wRVU goals are set yearly for all providers with the expectation that they will meet or exceed these goals. A provider who exceeds the wRVU goals set receives a bonus for each additional RVU. The guidelines for new clinicians are 3500 wRVUs per year for APPs and 4500 RVUs per year for doctors. By the third year of employment, APPs and doctors should be hitting 5000 and 6000 wRVUs yearly, respectively.

*Time to Next Available Appointment* tells leadership the time between a patient contacting an office for an office and when the patient can get in to see the provider. It is used to understand patient access to care and to quantify if a provider is hitting certain healthcare insurance thresholds for access. This domain is expanded upon in the patient access section below.

*Patients Seen Per Day* shows management how many patients a provider can see daily. This measure is essential because it shows how efficiently providers use their slots and time during the day. A national survey showed that, on average, doctors see twenty patients daily (Weber, 2022). At Nuvance Health, the guidelines state that internal medicine physicians should see 16-20 patients per day, family medicine should see 18 -22 patients per day, and APPs should see 14 -20 patients per day.

*Patient Experience* is defined as receiving feedback about a patient's care experience and is a pillar of healthcare quality (Benson et al., 2023). It encompasses people's interactions with their healthcare system and providers (AHRQ, 2023). Patient experience is most widely measured using surveys. The primary survey system in the United States is the Consumer Assessment of Healthcare Providers and Systems (CAHPS), founded by the Agency for Healthcare Research and Quality in 1995 (AHRQ, 2023). CAHPS surveys are given to each patient after interacting with Nuvance Health. The responses are aggregated into composite

measures in each entity (such as provider explanations or helpfulness of staff). Percentile rankings are published and reported annually for the top ten patient experience measures. The goal is to have a high top-box score, which means the percentage of patients who selected the most positive response category for that measure (HCAPSONline.org, 2022). At Nuvance Health, patient experience goals are established annually, considering past performance and national percentile rankings. The main domain measured for primary care is the likelihood of recommending the practice. The three drivers of likelihood to recommend are timely access to appointments, provider explaining things appropriately, and staff being caring and understanding. The target for patient experience in FY22 for primary care was 81.9% likelihood to recommend, meaning that 81.9% of patients strongly agreed to recommend the practice.

### *Protected Administrative Time*

As mentioned in the section on burnout, the administrative burden of healthcare is a significant issue for primary care providers. A 2014 study quantified the time spent on administrative tasks by type of provider, with internists and family practitioners having some of the highest percentage of working hours spent on administrative work (17.3%) (Woolhandler et al., 2014). This is over nine hours per week spent on administrative tasks (Woolhandler et al., 2014). Protected administrative time refers to providing a standardized schedule for primary care providers to complete administrative work. Providers who worked in large practices or health systems reported higher rates of administrative work (Woolhandler et al., 2014). Even after controlling income and other factors, doctors with more administrative work reported less job

satisfaction (Woolhandler et al., 2014). Administrative work refers to activities that are not patient-facing, such as creating and documenting notes/encounters in the electronic medical record (EHR), answering patient messages, filling prescriptions, sending communications, and other behind-the-scenes provider tasks. Regulatory and policy oversight committees and laws require many of these tasks.

A 2019 study showed that physicians spend a significant amount of time (ranging from 17-83 minutes) daily working after hours and weekends in their EHRs (Saag et al., 2019). For every hour spent with a patient, two hours are consumed by administrative and clerical work (Reith, 2018). Providers spend so much time outside of work doing administrative work that there is a specific and widely used terminology: pajama time (Dillon et al., 2019). The most significant contributors to this EHR workload are in-basket messages and progress notes (Dillon et al., 2019). In-basket messages were described as a “nightmare” and like a “firehose” that never turns off in primary care (Dillon et al., 2019, page 2). This administrative burden leads providers to quit fractionally, either reducing hours or giving up leadership roles to focus on patient care and well-being (Dillon et al., 2019).

Previous solutions suggested to combat the ever-increasing administrative tasks providers must perform include decreasing or compensating work in the EHR and ensuring adequate staffing levels and provider autonomy (Dillon et al., 2019). A solution discussed to a lesser degree in literature is protected administrative time (PRAT). PRAT refers to the time set aside to perform administrative tasks within the confines of a typical work week, thus reducing the need for providers to take work home with them or use pajama time. PRAT privileges are commonly given to providers with leadership duties, such as medical or residency program directors, with guidelines stating that core faculty should get about four hours per week for administrative time

(Chapman, 2022). Protected time is also often a benefit of specific residency programs, giving residents time to pursue research or other educational projects (Yale School of Medicine, 2023). However, providers outside of academic or leadership roles are rarely given the option of protected time.

Only one study discusses the outcomes associated with PRAT. One prospective non-randomized crossover study of nineteen otolaryngology residents consisted of participants being assigned two hours per week of protected non-clinical time, alternating with a control period of no intervention at 6-weeks intervals (Stevens et al., 2020). Participant burnout was measured by the Maslach Burnout Inventory and Mini-Z survey (Stevens et al., 2020). After 32 weeks, the intervention showed a statistically significant decrease in physician burnout and increased physician well-being (Stevens et al., 2020). Although there has been limited research on the impacts of PRAT, a few health systems and organizations within the U.S. view it as a benefit for their physicians, such as John Hopkins University (JHU, 2023) and OneMedical (2023).

### *Justification*

Many past interventions aimed at improving primary care burnout and access focused on individual-level changes and additions, such as asking providers to participate in a mindfulness session (Melynk et al., 2020). While these studies showed statistically significant findings, we also know that a large contributor to burnout is pajama time, administrative burdens, and lack of control over the work environment (Patel et al., 2018), (Dillon et al., 2019). These issues lend themselves to something other than an individual-level approach. We also know from the Melynk study that one of the barriers to mindfulness and individualized approaches was that it took a lot of work for clinicians to add these to their already busy schedules (Melynk et al., 2020). Thus, addressing these underlying operational issues contributing to burnout and access



issues is paramount. PRAT, while not extensively studied, does not add any significant burden to a clinician's schedule and, on the contrary, is specifically designed to give the provider more control and freedom over their schedule.

### *Framework*

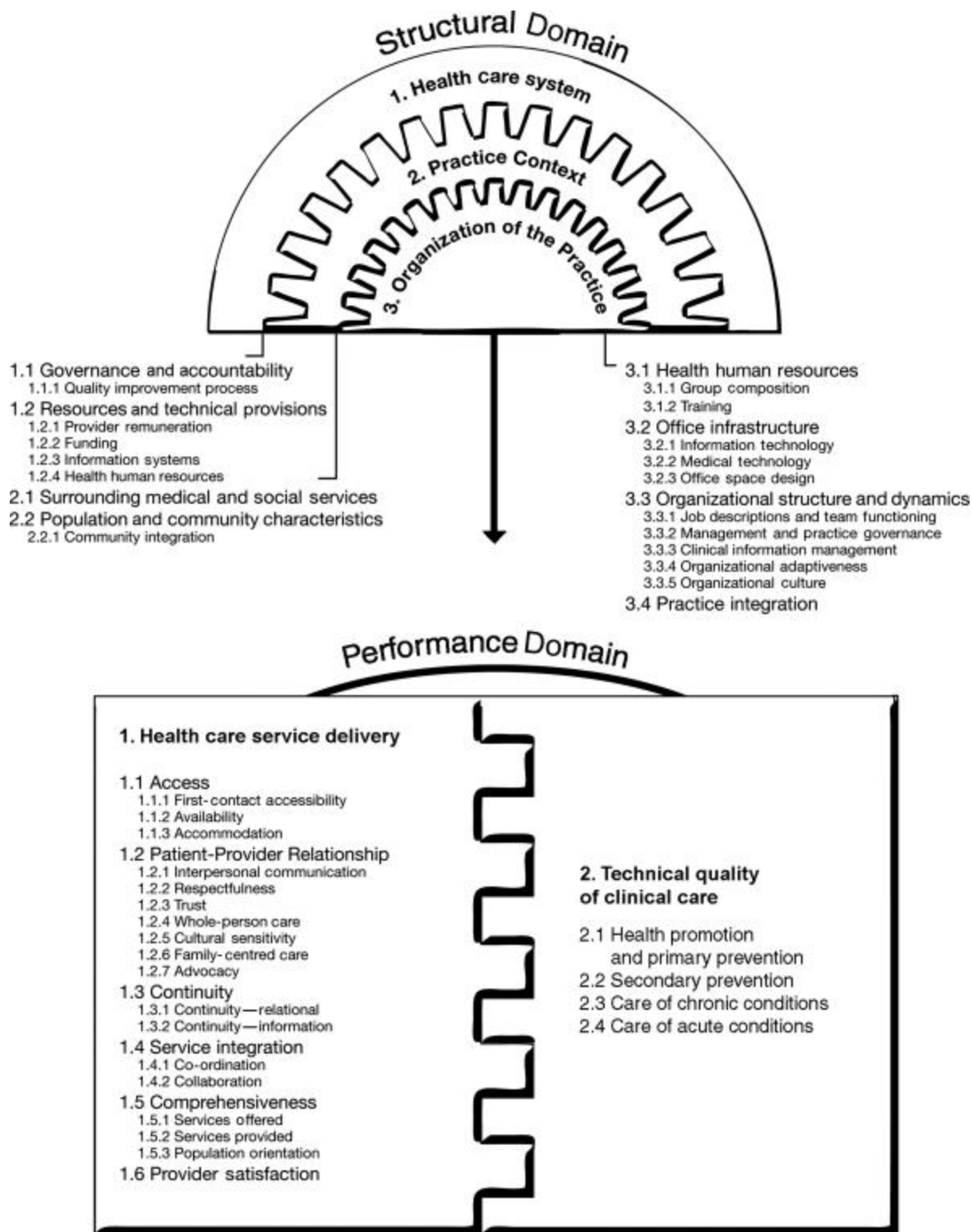
The two frameworks being used for this project are the Conceptual Framework for Primary Care and the Consolidated Framework for Implementation Research (CFIR) to study the factors in implementing the intervention.

The Conceptual Framework for Primary Care was born from the Comparison of the Model of Primary Health Care in the Ontario Project (COMP-PC), a mixed methods evaluation of thirty-five practices in Ontario, Canada (Hogg et al., 2008). From the COMP-PC study, an interdisciplinary team of social scientists, researchers, primary care physicians, and health program evaluators created this framework using an interactive process of face-to-face meetings with diverse groups, literature review, and continuous review of the model (Hogg et al., 2008). The framework focuses on structural and performance domains (Hogg et al., 2008). The structured domain comprises three main components most likely influencing primary care service delivery: the healthcare system, the practice context, and the practice organization (Hogg et al., 2008). The healthcare system refers to the influence of government or professional bodies and how these entities define the care experience for patients and providers (Hogg et al., 2008). The practice context refers to the characteristics of the communities served, medical resource availability, and health network involvement (Hogg et al., 2008). The practice component's organization involves health and human resources, office infrastructure, organizational structure and dynamics, and practice integration (Hogg et al., 2008).

The second domain is performance, broken down into the components of healthcare service delivery and technical quality of clinical care (Hogg et al., 2008). Healthcare service delivery includes access, patient-provider relationship, continuity, service integration, comprehensiveness, and provider satisfaction (Hogg et al., 2008). Technical quality of clinical care includes health promotion and primary prevention, secondary prevention, care of chronic conditions, and care of acute conditions (Hogg et al., 2008).

This framework influenced this study in a few critical ways. First, structural domains were explored in the qualitative sections using the CFIR framework to examine the internal and external factors related to the implementation and impact of PRAT. These qualitative interviews addressed how the governance, communications, training, context, and systems affected how providers perceived the PRAT initiative and whether it reduced burnout. These structural domains were ascertained by interviewing and analyzing data from multiple stakeholders such as leaders, managers, and providers. This gives a multi-faceted view of the impact of these structural domains on PRAT implementation. Second, the quantitative sections explored the performance domains by understanding PRATs impact on access, accessibility, patient-provider relationships, provider satisfaction, comprehensiveness, and efficiency. The figure below shows the Conceptual Framework for Primary Care in greater detail.

Figure 2.4 – Hogg Et.al, 2008 - Framework for primary care organizations: the importance of a structural domain



The second framework was the Consolidated Framework for Implementation Research (CFIR), an implementation science framework. Implementation Science was born from the idea that while establishing the effectiveness of an intervention is paramount, even the most effective innovation can fail due to how it is implemented into clinical practice (Bauer et al., 2019). Studies indicate that it can take 17-20 years to get an innovation into routine usage in the clinical setting, with an estimated 80% of medical research dollars not making any public health impact in the community (Bauer et al., 2019). While numerous implementation science frameworks are available, the CFIR was selected because it is the most highly cited implementation science framework used in literature since its initial publication in 2009 (Damschroder et al., 2022). CFIR explicitly embraces the complexity and reality of real-world intervention implementation and seeks to understand the active and dynamic forces working for or against implementation (Damschroder et al., 2022). CFIR aims to explain the barriers or facilitators to an intervention's effectiveness, which can help inform future strategies and projects. (Damschroder et al., 2022). Implementation scientists are poised to engage in theory-building, which means that with every application of the intervention and assessment using CFIR, the theory is improved and becomes an iterative process (Damschroder et al., 2022). CFIR offers thirty factors to consider when it comes to the implementation of innovations (Curran, 2020).

CFIR was used to conduct and guide the qualitative portion of this project. The CFIR Guide tool was used to create the survey and interview tools used in this study. This tool creates survey questions based on the five primary domains for CFIR. These questions were asked during the stakeholder interviews and surveys. The results were then analyzed based on the CFIR rating matrix (addressed in Chapter 3), and patterns were identified using established CFIR

methodology. Figure 5 shows a diagram explaining the individual variables explored in the CFIR.

Figure 2.5 – Center for Implementation – March 2023

## Consolidated Framework for Implementation Research (CFIR) 2.0

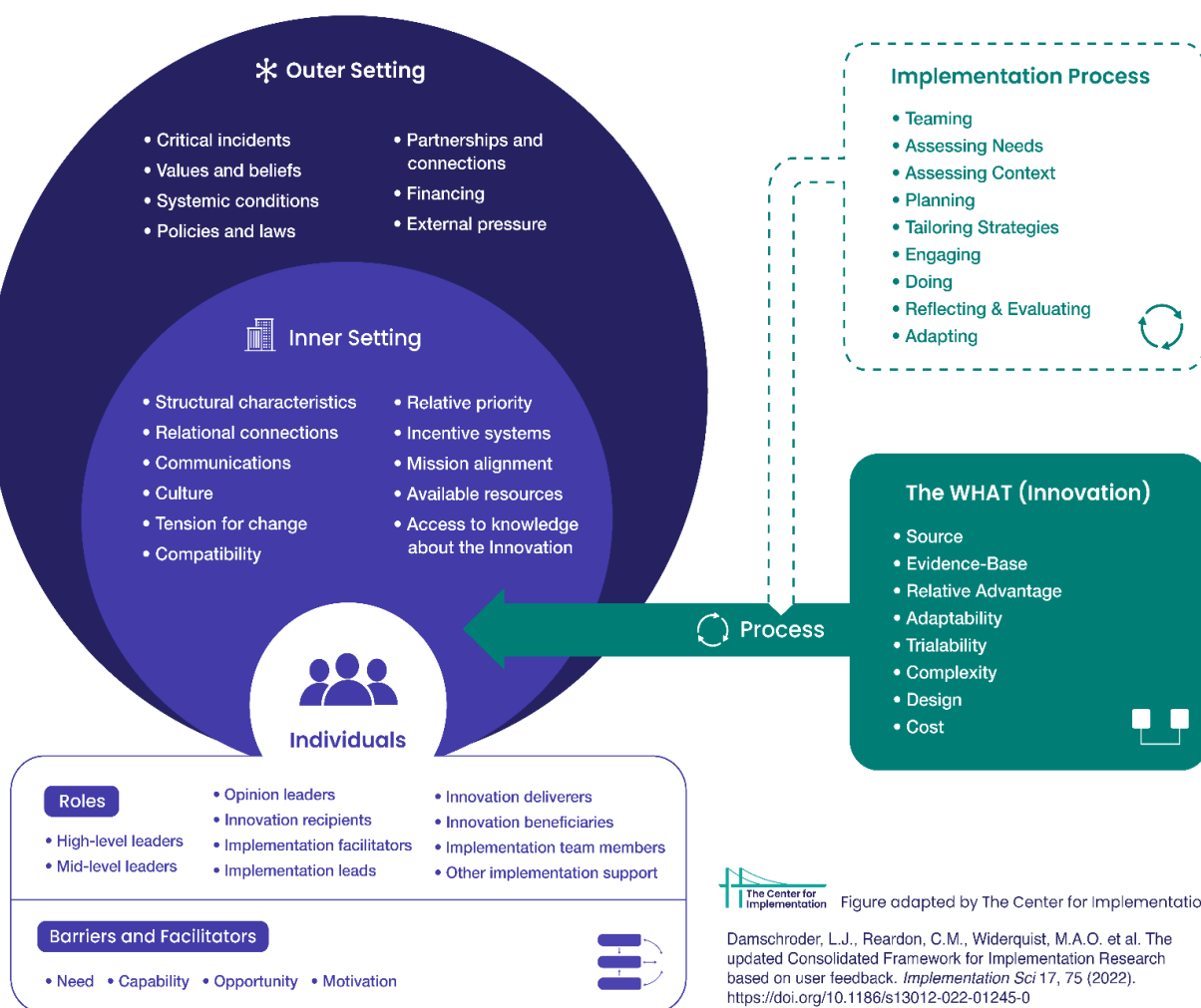


Figure adapted by The Center for Implementation

Damschroder, L.J., Reardon, C.M., Widerquist, M.A.O. et al. The updated Consolidated Framework for Implementation Research based on user feedback. *Implementation Sci* 17, 75 (2022). <https://doi.org/10.1186/s13012-022-01245-0>

## CHAPTER THREE

### METHODOLOGY

This chapter describes the methodology for this mixed methods study, which aims to examine the implementation and outcome of the PRAT initiative on improving patient access and provider burnout within a multi-state network of primary care medical practice. The research design, including the data sources, study sample, analysis methods for qualitative and quantitative sections, ethical concerns, and methodological limitations, are discussed in this chapter.

#### *Research Questions/Hypothesis:*

*Specific Aim #1:* To evaluate the effect of PRAT on the service delivery indicators: a) primary care clinicians' productivity (wRVUs), b) average appointments per day, c) patient satisfaction (likelihood to recommend), and d) clinician time to the next available appointment for new patients, established sick patients and established patient physicals.

*Specific Aim #2:* To describe the implementation and impact of protected administrative time (PRAT) using the Consolidation Framework for Implementation Research (CFIR).

#### *Hypothesis for Aim #1:*

H1: PRAT participation is negatively associated with primary care clinicians' productivity (wRVUs).

H2: Average appointments per day are unaffected by PRAT participation.

H3: PRAT participation is negatively associated with patient satisfaction (likelihood to recommend)

H4: PRAT participation is positively associated with the clinician's time to the next available appointment for new patients, established sick patients, and established patient physicals

#### *Research Design:*

This study utilizes a mixed-methods longitudinal retrospective design that employs a difference-in-difference framework. Data were obtained using primary data collection.

#### *Overview and Exclusion/Inclusion of PRAT:*

The idea for PRAT at Nuvance Health was conceived in July of 2022 due to the need for improved work/life balance for Nuvance clinicians and to recruit new providers to the system. The standard schedule before the implementation of PRAT was that a 1.0 FTE clinician would work a 40-hour week with 37.5 face-to-face hours (bookable patient hours) and 2.5 administrative time hours. After implementing PRAT, the standard schedule for a 1.0 clinician was 34 hours of face-to-face and six hours of administrative time.

Planning for implementing PRAT began in September 2022, and clinicians were invited to opt into PRAT in October 2022. In total, 83% of clinicians opted for PRAT. Meetings were held from August 2022 to September 2022, with each practice discussing the implementation of PRAT in that specific office. The meeting was attended by the practice manager, physician lead, senior project manager, senior vice president for primary care, and vice president for primary care. During these discussions, a document was shared showing the breakdown of each practice situation, such as the number of clinicians who opted into PRAT and the specific situation of

each provider. A policy was developed to help communicate the change and minimize the impact on office operations. Clinicians were eligible for PRAT if they were 0.6 FTE or greater. Face-to-face time was prorated based on FTE status (example below).

Table 3.2 – Face-to-Face Time Prorated by FTE status.

<b>FTE Status</b>	<b>Standard Schedule</b>	<b>PRAT Schedule</b>
<b><i>1.0</i></b>	<b>37.5 face-to-face hours and 2.5 hours administrative time</b>	<b>34 hours face-to-face hours and six hours administrative time</b>
<b><i>0.8</i></b>	<b>30 face-to-face hours and 2 hours administrative time</b>	<b>27.2 face-to-face hours and 4.8 hours administrative time</b>
<b><i>0.6</i></b>	<b>22.5 face-to-face hours and 1.5 hours administrative time</b>	<b>20.4 face-to-face hours and 3.6 hours administrative time</b>

Clinicians could opt in or out of PRAT at the beginning of each fiscal year, but clinicians could not opt-in after the enrollment period ended. Clinicians could opt out of PRAT at any point throughout the fiscal year. The practice dyads (lead physician and practice manager) and regional directors must approve PRAT for each clinician. PRAT time in each office must follow the 50% rule, which states that a practice must always be staffed with 50% bookable clinicians.

Administrative time cannot vary weekly and must remain consistent for at least six months.

Changes to administrative time must be made with a minimum of 6 months' notice to minimize the impact on patient care, and administrative time can be taken all at once on a single weekday or divided amongst multiple days of the week but still cannot vary. Administrative time can be altered at the discretion of the practice dyad to ensure that the 50% rule is maintained due to PTO, CME, leaves of absence, etc. Clinicians were not explicitly prohibited from adding more patients during their PRAT if they could accommodate them. Administrative time can be taken off-site (outside of practice); however, the following applied: clinician must be in a reachable area with adequate cellular service, Wi-Fi, etc., must have remote EHR access, and have laptop/tablet available, must cover their inbox, and if they have patient issues and questions, they



cannot rely on coverage from another clinician in the office. Clinicians can indicate a preferred method of contact. Still, the technique must be HIPAA compliant, and patient complaints or issues that are deemed life-threatening emergencies by the triage team should be addressed by another clinician on-site, including but not limited to chest pain, stroke symptoms, vision changes, sudden limb pain/numbness, anaphylaxis, or sudden shortness of breath.

As part of PRAT, there was an initiative to standardize the appointment lengths for several types of appointments to give guidance to schedulers and front desk staff. The following are the different appointment type categories:

*Table 3.3 – Appointment Types & Lengths:*

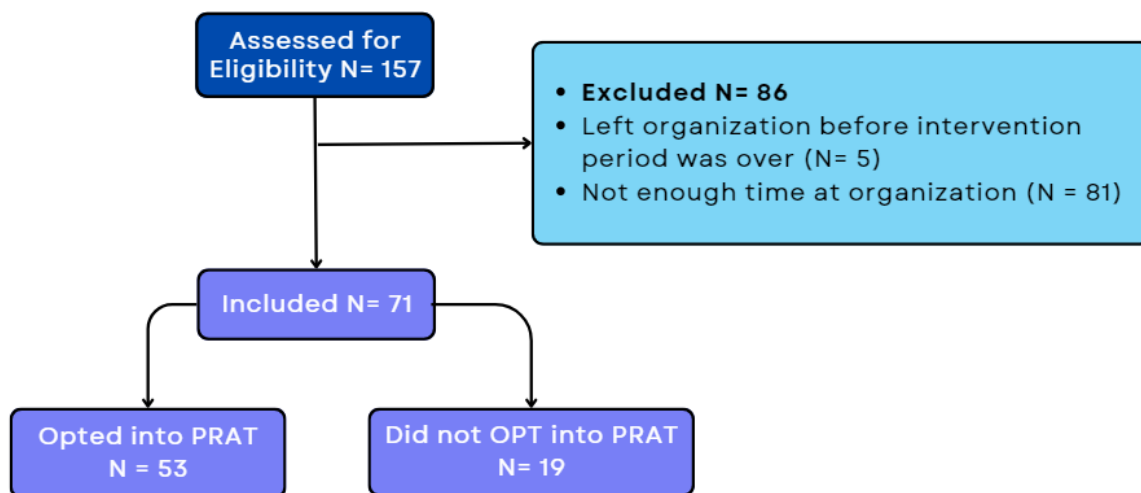
<b>NEW PATIENT TO NUVANCE HEALTH</b>	<b>30 minutes</b>
<b>NEW PATIENT ACUTE VISIT</b>	<b>15 or 30 minutes – clinician discretion</b>
<b>ESTABLISH CARE WITHIN NHPC W/ NEW PCP</b>	<b>1<sup>st</sup> visit = 30 minutes; subsequent visits = 15 minutes</b>
<b>ESTABLISHED PATIENT - ACUTE VISIT</b>	<b>15 minutes</b>
<b>ESTABLISHED PATIENT - FOLLOW UP VISIT</b>	<b>15 minutes</b>
<b>FOLLOW UP FOR PATIENT OVER 75 YEARS OLD WITH MULTIPLE ISSUES</b>	<b>15 or 30 minutes – clinician discretion</b>
<b>NURSE TRIAGE</b>	<b>Nurse discretion</b>
<b>TOCS (ER F/U)</b>	<b>15 or 30 minutes – clinician discretion</b>
<b>TCMS (DISCHARGE FROM INPATIENT OR REHAB)</b>	<b>30 minutes</b>
<b>PRE-OPS</b>	<b>30 minutes</b>
<b>AWV/PHYSICAL</b>	<b>30 minutes</b>

The above table was sent out to each practice in February 2023 to be taught and used by the front desk scheduling staff.

*Sample and Data Collection:*

The population for this study includes primary care providers employed by Nuvance Health Medical Practices in Connecticut and New York. The unit of analysis is the provider. These providers are employed in one of thirty primary care practices in suburban, community, and rural settings. One hundred fifty-seven clinicians are practicing in these practices - MDs, DOs, and Advanced Practice Providers (APPS) such as Physician Assistants and Nurse Practitioners. Of the 157 clinicians – 71 were eligible for study inclusion due to a few factors: time employed at Nuvance Health, ineligibility for PRAT, and leaving the health system before the end of fiscal year 2023. The inclusion criteria for this study were used by Nuvance Health primary care as a medical doctor or advanced practice provider between 2020 and 2023. The chart below shows the breakdown of provider inclusion.

Figure 3.1 - Consort Diagram – Provider Inclusion



Data was obtained in a few ways. First, the study utilized an internal operational dashboard maintained through BRG, an external consulting firm. BRG utilizes Nuvance Health’s electronic medical record data to create dashboards of various operational measures used by executive leadership to make decisions and track progress throughout the year. Data from these dashboards includes information about patient access (provider time to appointment and appointments per day). The second avenue for data collection was corporate services data, which is used for wRVUs and patient experience. Data was collected by quarter from the first quarter of 2020 through the first quarter of 2024, meaning there were seventeen quarters of data for each provider and variable.

### *Variables*

#### Dependent Variables

*Primary care clinicians’ productivity (waves)*

The primary care clinician productivity variable was operationalized by quarter-end work relative value unit (wRVU) percent variance for FY 2020, 2021, 2022, 2023, and the first quarter of 2024.

*Average appointments per day*

The average appointments per day variable was operationalized using internal operational dashboard metrics expressed in the number of appointments per day by quarter for FY 2020, 2021, 2022, 2023, and the first quarter of 2024.

*Patient satisfaction (likelihood to recommend)*

The variable of patient satisfaction was operationalized using internal corporate services measures expressed as the percent of patients who scored the providers as a 9 or 10 on satisfaction surveys on average over a year by quarter for FY 2021, 2022, 2023, and the first quarter of 2024.

*Clinician time to the next available appointment for new patients, established sick patients and established patient physicals.*

The time variable to the next available appointment was operationalized using internal operational dashboard metrics expressed in days until the next available appointment on average for the year by quarter for FY 2020, 2021, 2022, 2023, and the first quarter of 2024.

*Independent Variable*

*Participation in Protected Administrative Time (PRAT)*

The variable of PRAT was operationalized by using participation information obtained from an opt-in/opt-out survey given to providers in August 2022. The response categories were coded at 0 for those who did not opt into PRAT and 1 for those who did.

### *Control Variables*

Demographics variables assessed included sex (male, female), age (below or above 50 years old), years with the organization, State (NY, CT), Legacy Organization (WCMG, HealthQuest), Specialty (IM, FM, peds)

### *Analysis:*

#### *Mixed Methods Design:*

The mixed methods design most appropriate for this analysis was the concurrent triangulation design. Concurrent triangulation was chosen for this study because the qualitative and quantitative data were collected during the same time frame, and the results were compared against one another (Halley, 2024). Additionally, the analysis of both types of data was completed separately and integrated to understand the impact of the intervention on the established outcome measures (Halley, 2024).

#### *Quantitative Analysis:*

Data analysis used primary data from internal operational dashboards, corporate service metrics, and surveys/interviews. Variables were recorded, and depending on the dependent variable, various regression models were used to assess the relationship between measures. The

statistical significance was set at  $p \leq 0.05$ , and the STATA statistical software was used in the analysis.

A pre-post-controlled difference-in-difference (DID) framework design was used for this study. DID is best used when randomization cannot be used, as in this study (Columbia University, 2024). A parallel trends analysis is the most critical test to determine if a DID design can be used (Columbia University, 2024). A formal study of the parallel trend was conducted by evaluating the interaction between the intervention and time (quarter) in the pre-intervention period. This revealed consistent differences between the two groups over time before the intervention, suggesting an absence of a violation of the parallel trend's assumption. These results can be found in the appendix of this report.

A descriptive analysis was conducted to describe provider characteristics, including frequencies, mean, and percentage calculations which define the demographics of the study population such as gender, age (below or above 50 years old), years with the organization, State (NY, CT), Legacy Organization (WCMG, HealthQuest), Specialty (IM, FM, peds), and whether the provider opted into PRAT (yes/no). Following this, a t-test was run on each dependent variable to ensure that the pre-intervention population did not have significantly distinct characteristics at baseline. The t-test showed no significant differences between population characteristics at baseline.

Multivariate linear and Poisson regression models assessed the study's quantitative research aim (aim 1) depending on the distribution of the outcome variables. Appropriate tests of assumptions were conducted. Notably, the repeated measurement structure of the data set violates the independence assumption for linear regression. Robust standard errors help address independence violations (Huang et al., 2022).

### *Qualitative Data Collection*

The qualitative portion of this study focused primarily on research aim two - to describe the implementation and impact of protected administrative time (PRAT). The questionnaire was finalized after the Institutional Review Board (IRB) approval. Interviews and open-ended surveys were conducted with three distinct stakeholders: executive leaders, practice management, and providers who participated or did not participate in PRAT. The open-ended survey and interview guide used for this study were created using the cfirguide.org interview creation tool. This tool allows researchers to develop a draft interview tool using verified CFIR concepts and constructs. The questions are then modified and adapted to the evaluation as needed. According to CFIR guidelines, questions can be reworded, reordered, and removed as the researcher sees fit. Surveys and interviews were tailored to the role of those being assessed (providers, practice managers, and executive leadership).

The qualitative data collection and analysis were completed from December 2023 – to January 2024. All eligible providers (71) and practice managers (20) were sent an open-ended survey. Executive leaders were included if they had significant oversight or decision-making capacity for the PRAT initiative. The sample size goal was 30- 40 open-ended surveys. All stakeholders were sent an open-ended study via email, administered using the internal Nuance Health teams' software, allowing for added protection for open-ended survey data. The email explained the study purpose, that the survey was optional, and included the informed consent information. All participants were asked to confirm informed consent to use their responses and data. The survey was open for completion for two weeks. At the end of the study, participants were allowed to opt for the virtual semi-structured interview. These participants were contacted

individually with the information they provided. The sample size goal for semi-structured interviews was ten interviews. It was anticipated that saturation would be reached by then. The interviews lasted 15-20 minutes maximum via Microsoft Teams, Microsoft Corporation, 2024. All were recorded, and hand-written notes were taken. The table below shows the breakdown of surveys and interviews sent, received, and completed.

Table 3.4 – Survey & Interview Data Collection Results

	Providers	Practice Managers	Executive Leadership	Totals
<b>Survey Sent</b>	71	20	5	96
<b>Consented</b>	30 (42%)	4 (20%)	3 (60%)	37 (38%)
<b>Survey's Completed</b>	19 (26%)	4 (20%)	3 (60%)	26 (27%)
<b>Opted into Interview</b>	10 (52%)	3 (75%)	2 (67%)	15 (57%)
<b>Interview Completed</b>	4 (40%)	3 (100%)	2 (100%)	9 (60%)

### *Qualitative Analysis*

An analysis of these responses was carried out using (CFIR) methodology and thematic analysis. The analysis was coded deductively in the following manner. The survey and interview results were analyzed together due to the small sample size. First, data was stripped of identifying information to reduce bias and coded by stakeholder type (provider, practice manager, or executive leadership). The data was coded based on the Microsoft Office CFIR codebook template, pre-populated with CFIR definitions and coding guidelines to help code data. Data was rated using the CFIR rating matrix designed to compare ratings across or within the unit of analysis with an added summary for rationale. Ratings were based on valence and



strength (cifrguide.org, 2023). Valence refers to the positive or negative influence of the factor on implementation.

It is comprised of X, 0, +, -.

+ = factor had a positive influence on implementation based on overwhelmingly positive feedback/comments (facilitator)

- = factor had a negative influence on implementation based on overwhelmingly negative feedback/comments (barrier)

X = comments were equally positive and negative

0 = construct had no bearing on implementation

The strength factors refer to how weakly or strongly a factor influences implementation. The components are a 1 or 2. The 1 or 2 rating is determined by items such as level of agreement among participants, strength of language, and use of concrete examples (cifrguide.org, 2023). Data interpretation was completed by distinguishing factors that have a weak or strong influence on the implementation and comparing those with a negative or positive impact. Analysis was completed using NVivo 12 qualitative data analysis software. The qualitative data was uploaded into NVivo, along with the associated CFIR codes. The researcher reviewed data, and comments were coded into the appropriate sections. After coding was complete, each section was scored by whether that factor negatively or positively impacted the implementation (- or +) and how strong the rating was (1 or 2). Four categories were used for this coding process, and each participant's comment was coded into the following categories:

*very positive = valence is positive; strength is a two*

*moderately positive = valence is positive, strength is a one*

*moderately negative = valence is negative; strength is a one*

*very negative = valence is negative, strength is a two*

Implementation factors were added to ascertain participant agreement on whether the factor was a barrier or facilitator. Table 4.9 shows the results of this analysis.

#### *Trustworthiness*

The credibility of the qualitative design was maintained by ensuring that the interview protocol was followed for each participant, all interviews were recorded, and notes cataloged, and the multi-tiered system of open-ended surveys and interviews allowed for increased engagement and feedback with the stakeholders. Additionally, credibility was shown by using participants' words in the report. The transferability and dependability of the research were upheld by documenting the process and population so that the reader understands the boundaries of this study. Confirmability of the study was maintained by documenting any personal feelings, biases, or insights after the interviews and reviewing open-ended survey data. It was maintained by following the direction of the interviews and asking for clarification when needed.

#### *Limitations:*

The limitations of this study design include the inability to determine causality, as this analysis can only tell us if the pre-post outcomes have significant correlations.

#### *Institutional Review Board*

The Georgia Southern IRB and Nuvance Health IRB reviewed and approved all open-ended survey instruments and tools.

*Summary of Chapter*

This chapter describes the study methodology and data analytical plan. The next chapter presents the study's results.

## CHAPTER FOUR

## RESULTS

This chapter presents the results from the data analysis, including descriptive statistics, regression models, and qualitative analysis. The outcomes of the qualitative research component are discussed using the Consolidated Framework for Implementation Research (CFIR).

*Descriptive Statistics*

Table 4.1 presents the demographic characteristics of the providers who participated in the PRAT initiative for fiscal year 2023. N = 71

Demographics	Count	Percentage
<b>Gender</b>		
Female	37	52.11
Male	34	47.89
<b>Age</b>		
Greater than 50	44	61.97
Less than 50	27	38.03
<b>Specialty</b>		
Internal Medicine	33	46.48
Family Medicine	38	53.52
<b>Years at Nuvance</b>		
0 - 5 years	23	32.48
5 - 10 years	24	34.47
10 - 15 years	12	16.65
15 - 20 years	5	7.87
20+	7	8.53
<b>Doctor vs. Advanced Practice Provider (APP)</b>		
Doctor	54	76.06
APP	17	23.94
<b>State</b>		
Connecticut	38	53.52
New York	33	46.48
<b>Legacy Organization</b>		
Western Connecticut Medical Group (WCMG)	38	53.52
HealthQuest	33	46.48
<b>PRAT participation</b>		
Participated in PRAT	51	71.83
Did not participate in PRAT	20	28.17

### *Demographic Characteristics of Participants:*

More than half of the providers participating in PRAT were female (52.11%). Most providers were older than 50 years old (61.97%). Most providers had a family medicine specialty (53.52%), meaning they could see pediatric patients vs. internal medicine, which only saw adult patients. Most providers were physicians (76.06%) – either Medical Doctors (MD) (66.20%) or Doctor of Osteopathic Medicine (DO) (9.86%). The other providers were advanced practice providers (APPs, 23.94%) – either Physician Assistant (14.08%) or Nurse Practitioner (9.86%). In terms of time at the organization, most providers had less than ten years in the system (66.95%). For those over ten years, the majority had no more than 15 years (16.65%) and the longest-tenured providers of 20+ years were at 8.53%. Most providers (53.52%) practiced in Connecticut and were a part of the legacy organization of Western Connecticut Medical Group (WCMG). Almost three-quarters (71.38%) opted to participate in PRAT.

### *Outcome of Linear Regressions*

#### *Primary care clinicians' productivity (wRVUs)*

The interaction between the PRAT indicator and the post-intervention period was not statistically associated with a change in productivity, measured in wRVUs ( $\beta = 2.96$ , [CI] -4.75, 10.67). The main effects of the post-intervention variable and PRAT indicator were also not statistically significant. None of the individual characteristics were significant.

Table 4.2 Linear Regression of Work Relative Value Units

Work Relative Value Units (wRVU)						
	Coefficient	Standard Error	z	P- Value	[95% conf. interval]	
Post intervention (ref = pre)	-4.52	6.51	-0.69	0.490	-17.51	8.47
PRAT Participation (ref = No PRAT)	-6.98	3.7	-1.89	0.063	-14.36	0.4
Interaction - Post Intervention/PRAT	2.96	3.87	0.77	0.447	-4.75	10.67
Female (ref = male)	-1.65	2.27	-0.73	0.469	-6.18	2.88
Specialty (ref = internal medicine)	-3.87	2.3	-1.68	0.097	-8.45	0.72
Advanced Practice Providers (ref = MD)	4.75	3.26	1.46	0.149	-1.75	11.26
Age less than 50 (ref = 50 years or greater)	-0.36	3.07	-0.12	0.906	-6.49	5.76
Years at Nuvance (ref = 0-4 years)						
5 - 9 years	2.86	3.34	0.86	0.395	-3.81	9.52
10 - 14 years	-3.13	2.82	-1.11	0.270	-8.75	2.49
15 - 19 years	2.73	5.09	0.54	0.593	-7.43	12.89
20+ years	0.21	4.46	0.05	0.963	-8.69	9.11
State Of Practice (Ref = Connecticut)	3.23	3.46	0.93	0.354	-3.68	10.13
Legacy Organization (Ref = WCMG)	2.05	3.56	0.58	0.565	-5.04	9.15

### Average appointments per day

The PRAT intervention was not associated with average daily appointments, as evidenced by the lack of statistical significance for the interaction term. The main effect of the intervention period was statistically significant. Specifically, the post-intervention quarters, compared to the preintervention period, were associated with an increment of 1.6 appointments per day ( $\beta = 1.6$ , [CI] 0.43, 2.76).

Interestingly, female providers saw, on average, 1.29 fewer appointments per day than males ( $\beta = -1.29$ , [CI] -2.35, -0.22). Family Medicine providers were statistically more likely to have lower average appointments per day compared to internal medicine ( $\beta = -1.2$ , [CI] -2.20, -0.19). Providers < 50 years were statistically more likely to have higher appointments ( $\beta = 1.38$ , [CI] 0.25, 2.52) than those 50 years or older. Finally, providers who had been at Nuvance for 10

– 15 years were statistically likely to have higher average appointments per day ( $\beta = 1.51$ , [CI], 0.20 2.82) than those who had been at Nuvance for 0-5 years.

*Table 4.3 Linear Regression of Average Appointments per Day*

Average Appointments per Day						
	Coefficient	Standard Error	Z	P- Value	[95% Conf. Interval]	
Post intervention (ref = pre)	1.6	0.59	2.72	0.008	0.43	2.76
PRAT Participation (ref = No PRAT)	0.08	0.74	0.11	0.915	-1.4	1.56
Interaction - POST Intervention/PRAT	-0.47	0.45	-1.05	0.296	-1.37	0.42
Female (ref = male)	-1.29	0.54	-2.4	0.019	-2.35	-0.22
Specialty (ref = internal medicine)	-1.2	0.5	-2.37	0.002	-2.2	-0.19
Advanced Practice Providers (ref = MD)	-0.21	0.58	-0.36	0.718	-1.36	0.94
Age less than 50 (ref = 50 years or greater)	1.38	0.57	2.44	0.017	0.25	2.52
Years at Nuvance (ref = 0- 4 years)						
5 - 9 years	1.09	0.61	1.8	0.076	-0.12	2.3
10 - 14 years	1.51	0.66	2.3	0.024	0.2	2.82
15 - 19 years	0.17	1.07	0.16	0.877	-1.97	2.31
20+ years	0.26	0.89	0.29	0.771	-1.52	2.05
State Of Practice (Ref = Connecticut)	0.21	1.54	0.14	0.892	-2.85	3.27
Legacy Organization (Ref = WCMG)	-0.4	1.56	-0.26	0.798	-3.52	2.71

#### *Patient Experience (likelihood to recommend)*

No statistically significant differences were noted when assessing whether the PRAT intervention was associated with patient experience (measured by likelihood to recommend). ( $\beta = -0.49$ , [CI] -2.99, 2.02). The post-intervention period (main effect) was statistically associated with an average increase of 4.66 percentage points in likelihood to recommend compared to the pre-intervention period ( $\beta = 4.66$  [CI] 1.47, 7.84).

Female providers had a statistically significant increase in likelihood to recommend scores compared to male providers ( $\beta = 3.17$  [CI] -0.05, 6.48). However, this was not significant at the  $p < 0.05$  level ( $p = 0.054$ ). Family medicine providers had a statistically significant decrease

in the likelihood of recommending by 5.35 percentage points on average ( $\beta = -5.35$ , [CI] -8.44, -2.26) compared to Internal medicine providers. Advanced Practice Providers were associated with a statistically significant decrease in the likelihood to recommend by 4.42 percentage points ( $\beta = -4.42$ , [CI] -8.37, -0.48), compared to physicians. Providers younger than 50 had a statistically significant decrease of 4.4 percentage points in likelihood to recommend compared to those older than 50 ( $\beta = -4.40$ , [CI] -7.86, -0.94). Provider years at Nuvance were also associated with the likelihood to recommend. Providers that had been at the organization for 10 – 15 years ( $\beta = 4.41$ , [CI] 0.18, 8.63) and 20+ years ( $\beta = 4.39$ , [CI] -0.73, 9.51) had a statistically significant increase in their likelihood to recommend compared to those who had been with the organization less than five years. Finally, a provider's affiliation with HealthQuest legacy organization before the merger was statistically associated with a decrease in the likelihood to recommend compared to WCMG providers ( $\beta = -7.08$ , [CI] -14.29, 0.13).

*Table 4.4 Linear Regression of Patient Experience*

Patient Experience - Likelihood to Recommend						
	Coefficient	Standard Error	Z	P- Value	[95% Conf. Interval]	
Post intervention (ref = pre)	4.66	1.6	2.92	0.005	1.47	7.84
PRAT Participation (ref = No PRAT)	-0.83	1.7	-0.48	0.634	-4.29	2.63
Interaction - POST Intervention/PRAT	-0.49	1.26	-0.39	0.698	-2.99	2.02
Female (ref = male)	3.17	1.61	1.96	0.054	-0.05	6.38
Specialty (ref = internal medicine)	-5.35	1.55	-3.45	0.001	-8.44	-2.26
Advanced Practice Providers (ref = MD)	-4.42	1.98	-2.24	0.028	-8.37	-0.48
Age less than 50 (ref = 50 years or greater)	-4.4	1.74	-2.54	0.013	-7.86	-0.94
Years at Nuvance (ref = 0- 4 years)						
5 - 9 years	3.1	1.91	1.63	0.108	-0.7	6.91
10 - 14 years	4.41	2.12	2.08	0.041	0.18	8.63
15 - 19 years	4.99	2.97	1.68	0.097	-0.92	10.91
20+ years	4.39	2.57	1.71	0.091	-0.73	9.51
State Of Practice (Ref = Connecticut)	4.51	3.64	1.24	0.219	-2.74	11.76
Legacy Organization (Ref = WCMG)	-7.08	3.62	-1.96	0.054	-14.29	0.13



*Clinician time to the next available appointment for new patients*

The PRAT intervention (assessed with the interaction term) was positively associated with time to the next available appointment for new patients. However, this was not statistically significant at the  $p < 0.05$  level ( $\beta = 18.24$ , [CI] -0.17, 36.65;  $p = 0.052$ ). The main effects were statistically significant. Specifically, the post-intervention period was also associated with a longer time (more days) to the next available appointment for new patients compared to the pre-intervention period ( $\beta = 65.34$ , [CI] 45.05, 85.64). In addition, providers who opted into PRAT were generally associated with a longer time to the next available appointment ( $\beta = 12.97$ , [CI] 1.64, 24.30) for new patients compared to those who did not.

Other covariates were associated with the time to the next available appointment for new patients. Female providers were associated with a longer time to the next available appointment for new patients than males ( $\beta = 11.90$ , [CI] 0.39, 23.41). Advanced Practice providers were associated with a shorter time to the next available appointment for new patients ( $\beta = -20.89$ , [CI] -37.59, -4.20) compared to physicians. The provider's tenure at Nuvance was associated with the next available appointment for new visits. Compared to providers who had been with the organization for less than five years, the time to the next available appointment for new patients was longer for providers who had been with the organization for 5 to 10 years ( $\beta = 20.99$ , [CI] 5.06, 36.91), 10 to 15 years ( $\beta = 31.99$ , [CI] 16.74, 47.24) and at 20+ years ( $\beta = 54.99$ , [CI] 30.36, 79.61).

Table 4.5 Poisson Regression for Time to Next Available Appointments New Patients

Time to Next Available Appointment - New Patient Visits						
	Coefficient	Standard Error	Z	P- Value	[95% Conf. Interval]	
Post intervention (ref = pre)	65.34	10.18	6.42	< 0.001	45.05	85.64
PRAT Participation (ref = No PRAT)	12.92	5.68	2.28	0.025	1.64	24.3
Interaction - POST Intervention/PRAT	18.24	9.23	1.98	0.052	-0.17	36.65
Female (ref = male)	11.9	5.77	2.06	0.043	0.39	23.41
Specialty (ref = internal medicine)	-11.35	7.34	-1.55	0.126	-25.99	3.28
Advanced Practice Providers (ref = MD)	-20.89	8.37	-2.5	0.015	-37.59	-4.2
Age less than 50 (ref = 50 years or greater)	-8.42	7.63	-1.1	0.273	-23.64	6.79
Years at Nuvance (ref = 0- 4 years)						
5 - 9 years	20.99	7.98	2.63	0.011	5.06	36.91
10 - 14 years	31.99	7.65	4.18	< 0.001	16.74	47.24
15 - 19 years	12.23	13.07	0.94	0.352	-13.83	38.3
20+ years	54.99	12.35	4.45	< 0.001	30.36	79.61
State Of Practice (Ref = Connecticut)	-3.95	18.47	-0.21	0.831	-40.78	32.88
Legacy Organization (Ref = WCMG)	2.81	18.44	0.15	0.879	-33.97	39.59

*Clinician time to the next available appointment established sick patients:*

The interaction between the PRAT indicator and the post-intervention period (a measure assessing the impact of the PRAT intervention) was not statistically associated with a change in time to the next available appointment for sick patients ( $\beta = 2.24$ , [CI] -.4.64, 9.12). Providers who opted into PRAT were associated with a statistically significant longer time to the next available appointment for sick patients ( $\beta = 5.93$ , [CI] 1.96, 9.90).

Advanced Practice Providers were associated with a shorter time to the next available appointment for sick patients ( $\beta = < 0.001$ , [CI] -12.55, -5.87) compared to physicians. Compared to providers who had been with organization for fewer than five years, providers who had been at Nuvance for 5 -10 years ( $\beta = 4.99$ , [CI] 1.26, 8.72), 10 – 15 years ( $\beta = 8.32$ , [CI] 5.02, 11.62) and 20+ years ( $\beta = 12.58$ , [CI] 2.62, 22.54) were associated with longer time to the next available appointment for sick patients.

*Table 4.6 Poisson Regression for Time to Next Available Appointments Sick Patients*

Time to Next Available Appointment - Sick Patient Visits						
	Coefficient	Standard Error	Z	P- Value	[95% Conf. Interval]	
Post intervention (ref = pre)	6.39	3.74	1.71	0.092	-1.08	13.85
PRAT Participation (ref = No PRAT)	5.93	1.99	2.98	<0.001	1.96	9.9
Interaction - POST Intervention/PRAT	2.24	3.45	0.65	0.518	-4.64	9.12
Female (ref = male)	-0.28	1.81	-0.15	0.878	-3.88	3.32
Specialty (ref = internal medicine)	-1.69	1.96	-0.86	0.393	-5.6	2.23
Advanced Practice Providers (ref = MD)	-9.21	1.67	-5.51	<0.001	-12.55	-5.87
Age less than 50 (ref = 50 years or greater)	1.35	1.95	0.69	0.49	-2.54	5.24
Years at Nuvance (ref = 0- 4 years)						
5 - 9 years	4.99	1.87	2.67	0.009	1.26	8.72
10 - 14 years	8.32	1.66	5.03	<0.001	5.02	11.62
15 - 19 years	3.92	3.89	1.01	0.317	-3.83	11.68
20+ years	12.58	4.99	2.52	0.014	2.62	22.54
State Of Practice (Ref = Connecticut)	-3.89	6.37	-0.61	0.544	-16.6	8.82
Legacy Organization (Ref = WCMG)	9.1	6.37	1.43	0.158	-3.61	21.81

*Clinician time to the next available appointment established patient physicals.*

The interaction between the PRAT indicator and the post-intervention period was statistically associated with increased time to the next available appointment for established patients ( $\beta = 36.55$ , [CI] 12.33, 60.76), indicating an intervention effect. The post-intervention period (main effect) was also associated with an increase in time to the next available visit for established patients compared to the pre-intervention period ( $\beta = 89.45$  [CI] 62.53, 113.66).

Compared to physicians, the time to the next available visit for established patients was shorter for Advance Practice Providers ( $\beta = -32.09$ , [CI] -56.33, -7.86). Conversely, compared to providers who had been at Nuvance for less than five years, the time to the next available visit for established patients was longer for those who had been with the organization for 5-10 years ( $\beta = 43.17$ , [CI] 12.94, 75.40), 10 – 15 years ( $\beta = 43.98$ , [CI] 22.62, 65.33) and 20+ years ( $\beta = 88.49$ , [CI] 45.23, 131.74).

*Table 4.7 Poisson Regression for Time to Next Available Appointments Established Patient*

*Physicals*

Time to Next Available Appointment - Established Patient Visits						
	Coefficient	Standard Error	Z	P- Value	[95% Conf. Interval]	
Post intervention (ref = pre)	89.45	12.14	7.37	<0.001	65.23	113.66
PRAT Participation (ref = No PRAT)	1.27	17.75	0.07	0.943	-34.12	36.67
Interaction - POST Intervention/PRAT	36.55	12.14	3.01	0.004	12.33	60.76
Female (ref = male)	22.81	12.69	1.8	0.077	-2.5	48.13
Specialty (ref = internal medicine)	-7.45	10.42	-0.71	0.477	-28.24	13.33
Advanced Practice Providers (ref = MD)	-32.09	12.15	-2.64	0.011	-56.33	-7.86
Age less than 50 (ref = 50 years or greater)	-18.21	15.82	-1.15	0.254	-49.76	13.35
Years at Nuvance (ref = 0- 4 years)						
5 - 9 years	44.17	15.66	2.82	0.006	12.94	75.4
10 - 14 years	43.98	10.71	4.11	<0.001	22.62	65.33
15 - 19 years	23.84	19.00	1.25	0.214	-14.06	61.74
20+ years	88.49	21.69	4.08	<0.001	45.23	131.74
State Of Practice (Ref = Connecticut)	13.63	24.07	0.57	0.573	-34.38	61.64
Legacy Organization (Ref = WCMG)	21.55	24.93	0.86	0.39	-28.17	71.27

*Qualitative Results:*

The following section discusses the results from the second aim, which was to describe the implementation barriers and facilitators using the Consolidated Framework for Implementation Research. This analysis will explain the scoring for each domain and associated participant quotations denoted as “P” and the participant number or “S” and the survey number. Table 4.8 shows the construct names and definitions, and Table 4.9 shows the results of the CFIR analysis.

Table 4.8 Consolidated Framework for Implementation Science Framework Codebook

*Outcome Codes and Constructs Discussed in this Study:*

INNOVATION DOMAIN	
Construct Name	Construct Definition
A. Innovation Source	The degree to which the group that developed and/or visibly sponsored use of the innovation is reputable, credible, and/or trustable.
B. Innovation Evidence-Base	The degree to which the innovation has robust evidence supporting its effectiveness.
C. Innovation Relative Advantage	The degree to which the innovation is better than other available innovations or current practice.
D. Innovation Adaptability	The degree to which the innovation can be modified, tailored, or refined to fit local context or needs.
E. Innovation Trialability	The degree to which the innovation can be tested or piloted on a small scale and undone.
OUTER SETTING DOMAIN	
Construct Name	Construct Definition
A. Market Pressure	The degree to which competing with and/or imitating peer entities drives implementation and/or delivery of the innovation.
B. Performance-Measurement Pressure	The degree to which quality or benchmarking metrics or established service goals drive implementation and/or delivery of the innovation.
INNER SETTING DOMAIN	
Construct Name	Construct Definition
A. Relational Connections	The degree to which there are high quality formal and informal relationships, networks, and teams within and across Inner Setting boundaries (e.g., structural, professional).
B. Communications	The degree to which there are high quality formal and informal information sharing practices within and across Inner Setting boundaries (e.g., structural, professional).
C. Implementation Climate	The extent to which the Inner Setting has a climate for implementation.
D. Implementation Readiness	The extent to which the Inner Setting is ready for implementation.
E. Culture	The degree to which there are shared values, beliefs, and norms across the Inner Setting. Note: Use this construct to capture themes related to Culture that are not included in the subconstructs below.
F. Tension for Change	The degree to which the current situation is intolerable and needs to change.
INDIVIDUALS DOMAIN	
Construct Name	Construct Definition
A. High-level Leaders	Individuals with a high level of authority, including key decision-makers, executive leaders, or directors.

B. Implementation Facilitators	Individuals with subject matter expertise who assist, coach, or support implementation.
C. Implementation Leads	Individuals who lead efforts to implement the innovation.
<b>IMPLEMENTATION PROCESS DOMAIN</b>	
<b>Construct Name</b>	<b>Construct Definition</b>
A. Planning	The degree to which individuals identify roles and responsibilities, outline specific steps and milestones, and define goals and measures for implementation success in advance.
B. Doing	The degree to which individuals implement in small steps, tests, or cycles of change to trial and cumulatively optimize delivery of the innovation.
<b>IMPLEMENTATION OUTCOMES</b>	
<b>Construct Name</b>	<b>Construct Definition</b>
A. Anticipated Implementation Outcomes	The likelihood of future implementation success or failure, i.e., implementation outcomes that have not yet occurred. These outcomes are forward-looking; constellations of CFIR determinants across domains predict these outcomes.
B. Actual Implementation Outcomes	Current (or past) implementation success or failure, i.e., implementation outcomes that have occurred. These outcomes are backward-looking; constellations of CFIR determinants across domains explain these outcomes.
<b>INNOVATION OUTCOMES</b>	
<b>Construct Name</b>	<b>Construct Definition</b>
A. Innovation Recipient Impact	Recipient Reach (number of individuals who are willing to participate) x Innovation Effectiveness (impact on important outcomes)

Table 4.9 CFIR Results

Domain	Construct	Very Positive	Moderately Positive	Moderately Negative	Very Negative	Barrier or Facilitator	CFIR Score
Innovation Domain	Innovation Adaptability	1	0	0	0	Facilitator	+1
	Innovation Evidence Base	1	0	1	0	Neutral	0
	Innovation Relative Advantage	0	3	1	0	Facilitator	+1
	Innovation Source	3	0	0	0	Facilitator	+2
	Innovation Trialability	2	0	0	0	Facilitator	+1
Outer Settings Domain	Market Pressure	3	2	0	0	Facilitator	+1
	Performance Measurement Pressure	0	1	2	0	Barrier	-1
Inner Setting	Relational Connections	21	19	3	0	Facilitator	+2
	Communications	5	7	1	0	Facilitator	+2
	Implementation Climate	1	2	2	0	Facilitator	+1
	Tension for Change	12	5	0	1	Facilitator	+2
	Culture	9	9	6	0	Facilitator	+1
	Implementation Readiness	13	6	2	0	Facilitator	+2
Individuals Domain	High Level leaders	0	1	0	0	Facilitator	+1
	Implementation Facilitators	0	1	0	0	Facilitator	+1
	Implementation leads	1	0	0	0	Facilitator	+1
Implementation Process Domain	Doing	0	3	1	0	Facilitator	+1
	Planning	2	3	0	1	Facilitator	+1
Implementation Outcomes	Actual Implementation	12	18	7	1	Facilitator	+2
	Actual Implementation Outcome	0	4	0	0	Facilitator	+1
Innovation Outcomes	Innovation Recipient Impact	22	7	1	1	Facilitator	+2

### *Barrier Characteristics:*

#### Innovation Domain – Evidence Base

The participants identified no substantial barriers. However, a neutral characteristic was identified. Innovation Evidence Base, which resides under the Innovation Domain, was recognized as a neutral characteristic by leadership participants. Participants were split on the evidence base for the PRAT intervention, with one participant stating:

“National data shows that having a protected time actually decreases physician burnout and helps to address the administration burden and actually help with provider retention and recruitment” (P3).

However, another participant did not discuss or agree that there was any evidence for the PRAT intervention, stating: “We implemented it without having a study, just with a theory and some hopes. We did not really have any idea what the outcome would be, it was a trial” (P5). Due to this difference in attitude towards the evidence base for the intervention, this characteristic was coded as a barrier; however, this was not unanimous among all participants.

#### Outer Setting Domain - Performance Measurement Pressure

One of the longstanding themes that all participants discussed was the concern that PRAT would affect clinician productivity and access. Productivity expressed in wRVUs is critical from the perspectives of all participants: leaders must maintain the organization’s financial viability,



managers must keep the productivity of their practice, and providers must meet productivity requirements in their contracts to receive their full salary or a bonus.

Before implementation, there were fears of how implementing PRAT would impact wRVUs, with one leader saying, “There were concerns about how it would affect productivity but overall promising” (P2). The pilot phase put some of those fears to rest, as participants stated that productivity was not affected much in the three pilot practices. These findings, coupled with the increased satisfaction of providers, drove the leaders to continue to push for implementation. Even as it was being implemented, the manager was concerned about the effect on their practices, saying, “We did not want to miss our productivity targets even though clinicians had less face-to-face time. We wanted to use it for recruitment and retention” (S2).

Post-implementation participants were split as to whether productivity was affected. One manager stated, “increased satisfaction but decreased productivity. The APPs have been learning to increase productivity and are resistant to it” (S4). Other participants were surprised that wRVUs did not decrease. One surveyed provider said, “I managed to maintain my productivity over the year, which was good” (S19). Managers agreed: “[PRAT has been] somewhat successful. I think it is a recruitment tool, and I think that the clinicians appreciate the effort. Volume/Productivity has not been significantly affected by the implementation” (S2).

The more significant overall concern for participants was the impact of PRAT on patient access to care. No one wanted to negatively impact the patient’s ability to receive care promptly due to decreased face-to-face provider time. One leader stated, “We had to look at our 15 min vs. 30 min [appointment lengths] and see, as we were cutting back on face-to-face time, we wanted to make sure that we didn’t put back access” (P5).

After the implementation, some providers and managers felt that access had been negatively affected: “[PRAT] was disruptive, limited patient access, and allowed some to take advantage of the program” (S12). Another said, “It is a good idea, but it is tough to use. Reducing time with patients affects access.” (S26). Others acknowledged the access issue: “Access has been limited – add a patient here and there, but this negates the impact of PRAT” (P2).

Others felt that although PRAT limits access in some ways, access to care for patients is limited at baseline. With all the care happening outside of the visit and turnover affecting access, providers need an intervention like PRAT that can help address their well-being first. One said, “The modern primary care is based significantly on managing patients outside the office visit—the lack of access, large panels, and coordination required dedication time, often only after hours. PRAT recognizes the complex work of coordination” (S8).

### *Qualitative Results - Facilitators*

#### **Innovation Domain – Adaptability:**

Two participants touched on the adaptability of the intervention as a facilitator to the implementation. Participants stated that the intervention could be adapted to each provider and used in the best ways for them. For example, one manager participant said, “I have one [provider] that uses [PRAT time] all at once. I have multiple that will spread it out over half an hour 4x per week, and I have a provider that uses 2.5-hour chunks per week” (P1). Another manager said they “worked with individual providers to adjust schedules based on their needs”

(P8). These comments suggest that the PRAT intervention could be tailored to each provider and practice.

*Innovation Domain – Trialability:*

The leadership participants discussed the intervention's ability to be piloted on a smaller scale before the full-scale rollout. The participants described a pilot involving three practices on the Connecticut side, stating they decided to "Adjust [providers] to x number of hours and then see how the providers responded. We put some KPIs around this: wRVUs, patient experience, and provider satisfaction. Within a three-month period, we saw that it was effective and had not changed outcomes; the volumes didn't drop, even though we changed the hours. We did this in a relatively stable practice, a less stable practice, and a disgruntled practice to see what happens" (P3). The other leader also positively described the pilot phase: "We took three practices and looked at several messages, pajama time, and how they worked. We listened. Once we were done, we rolled out the general practice population" (P5). The ability to pilot this intervention on a small scale facilitated the implementation of the PRAT intervention.

*Innovation Domain – Innovation Source:*

The leader participants unanimously pointed to providing feedback as one of the primary sources of motivation for implementing PRAT. When asked why they decided to implement PRAT, one leader stated, "Provider feedback indicated that the vast majority were burnt out and spending their evenings and weekends doing pajama time" (S1). Another leader also stated that

they implemented PRAT “to assist the clinicians in balancing their work-life. Give them time to attend to administrative tasks during the day so they have less pajama time in the evening” (S2).

Still, another leader stated that while PRAT’s source mainly came from the motivation to improve provider wellbeing and work/life balance, there was also motivation from leadership to implement this due to the impact it could have on physician recruitment, stating, “given the increase in physician/APP burnout, staffing shortages and need to create a value proposition when recruiting in PC [primary care], PRAT made perfect sense” (S3). These responses point to the source of the PRAT intervention as a trustable and credible source, as the leaders did not implement PRAT for selfish reasons but because they genuinely wanted to improve provider wellness.

#### *Innovation Domain – Relative Advantage:*

Numerous provider participants discussed other well-being initiatives implemented in the past and the advantages of PRAT over those other initiatives. For example, participants discussed scribes, night nurses, and inbox management as other well-being initiatives impacting their well-being. Scribes are virtual assistants that assist providers in completing notes using dictation software and allowing them to speak their notes vs. write them. A night nurse is a service implemented in 2019 that provides a non-nuance nurse provider who will take patient calls overnight, thus reducing the need for providers to be on-call. Finally, inbox management

was a program implemented in 2019, which meant that when a provider took a leave of absence or vacation, their inbox was managed by another provider whose sole responsibility was inbox coverage. This coverage reduced the stress on the provider upon their return from leave or vacation but reduced the number of messages within their inboxes.

Providers stated that these programs were an improvement from the status quo, with one commenting, “Yes, scribes have been helpful. The night nurse service intercepts calls, reducing the on-call burden. Inbox management has streamlined processes” (P6). Another provider said, “two significant initiatives from the last couple of years are the night nurse program, which reduced call stress and scribe service, which has been beneficial for primary care clinicians” (P9).

However, while interventions were well received by participants, there were still comments from participants describing that these interventions did not get to the root cause of the issue. As one provider put it, “multiple processes are going on because we had the virtual scribe and were trying to build up some simple order sets to help improve the clicking time and working on optimization, but none of them showed any significant improvement because you cannot make time from when there is no time” (P4).

Similarly, a provider said, “[VP and Chief of PC] have moved the dial, tons of promise, but no one is able to do anything. The physician wellbeing committee – not going to go anywhere, takes up people’s time and is uncompensated, will not implement anything” (P2). These comments suggest that while additional interventions have occurred in primary care practices in the past few years, they may have yet to address the perceived root cause of provider burnout, which was a lack of time to accomplish the numerous tasks needed in the primary care environment.

## **Outer Setting Domain**

### *Market Pressure*

Participants, especially leadership, agreed that market pressure was a key factor in facilitating the implementation. For example, one leader stated, “Whether it’s Hartford Healthcare or Westchester Medical, they are all changing their primary care, clinical FTE, face-to-face time, etc., to be more competitive in the market” (P3). Another leader said, “It is a good recruitment tool, and we were falling behind in recruiting” (S2).

Even those not in high-level leadership positions discussed how previous employers had already used PRAT time; one participant stated that she had “surgeons at Yale who, as part of their contract, would get a certain amount of administrative time” (P7). Another discussed how PRAT was happening in her previous role at an FQHC (Federally Qualified Health Center), saying, “I worked in an FQHC for years, as a medical director, and they used PRAT time. Due to the high volume of psycho-social-financial patient needs, it was too short but needed for the team to work efficiently” (P8). These comments suggest that PRAT time was utilized throughout the market in academic medical centers, such as Hartford Healthcare and Westchester, smaller entities like the FQHC, and other contexts, such as surgery. The presence of PRAT in all these contexts played a role in facilitating its implementation in Nuvance.

## **Inner Setting Domain**

### *Implementation Climate*

Participants agreed that the climate in the primary care service line facilitated the implementation of PRAT. One provider commented on how COVID and advancements in the

technological communication abilities of patients had affected the service line and how that made providers and leaders more willing to try new things: “Patients come in with long lists of things and especially after COVID a lot of patients move to portal messages. That was a bad combination of patients becoming more complicated and complex due to aging and having more work to do after hours with all those portal messages. So, suddenly, the base work became much more, took much longer, and was much less manageable. Adding that PRAT time was extremely helpful for returning to where I was in 2020 before COVID started” (P4).

Another provider agreed, stating, “Healthcare provider’s sanity is more important than filling schedules with the maximum number of patients. The administration knows that providers already spend too many unpaid hours at home catching up on charting and addressing results, messages, and refills” (S25). Leadership participants also noted the general working environment as a driver of the decision to implement PRAT: “Yes, provider burnout was at an all-time high, and this was one solution to address that” (S1).

### *Communications*

The communication regarding the PRAT intervention was another facilitator for the implementation. First, participants described that, in general, communication was streamlined at Nuvance. There were established channels for communication such as a regional (east and west) monthly provider meeting, monthly practice meetings, and monthly “PCMC” meeting (Primary Care Management Committee), which was a meeting attended by the manager and lead physician from each practice. Many participants espoused these meetings as central to discovering the latest information when asked how they usually find out about different initiatives or organizational announcements. The other standard communication methods were

through emails or a daily huddle that occurs in every practice with all available staff, and there is also a daily virtual manager huddle for each region (east and west).

These established communication channels enabled leadership and implementation leads to widely distribute information about PRAT. One respondent said, “The rollout of PRAT was well- communicated and implemented in a timely fashion. It was discussed at the PCMC meeting and then effectively pushed out to the sites and site supervisors” (P9). Another participant discussed how crucial verbal and 1:1 communication was for the diffusion of PRAT throughout the practices. “[PRAT] was discussed with the manager and lead physician. The manager distributed it to the front and clinical staff at staff meetings. This was all verbal communication and not only an email because [PRAT] required a lot. We needed to pair the nurses with the physicians and change schedules; we did not want too many nurses staying around whenever we had too many physicians being gone. You want to be efficient “(P4).

### *Tension for Change*

Most provider participants discussed the tension undercutting the primary care service line and primary care in general before the implementation of PRAT. From participant responses, there seems to be a desperation for change so that they could improve the sustainability of their careers and decrease burnout.

“There has been a strong surge in burnout over the last five years in primary care because of the ever-increasing administrative burden. Then, COVID and the explosion of the patient portal both added more to our plates. This change needed to happen, or we would have lost many more providers to retirement or moving away to jobs with better work-life balance” (S20).



“There is an absolute need for PRAT time. The administrative burden of caring for large primary care patients has become onerous and unsustainable. PRAT time helps us to accomplish those tasks during the workday, rather than staying late or doing them at home, both of which are quality of life killers and can contribute to burnout” (S21).

“Without PRAT, primary care would be set to fail. PRAT is essential to addressing various tasks, finishing charts, reviewing labs, documents, and addressing patient messaging without office visits” (S23).

“PRAT was desperately needed to offset the challenges [in primary care]. This, coupled with increased physicians/APPs requesting a decrease in FTE to keep their heads above water, made PRAT a must rather than an option” (S3).

These and other similarities point to the idea that primary care at Nuvance was critical post-COVID, with providers considering making significant work-life changes before implementing PRAT time.

#### *Implementation Readiness:*

Due to the above conditions, respondents felt that the clinicians were ready for PRAT and were receptive to it being implemented in their practice. Most provider participants reported that the practice was “highly receptive” or receptive to PRAT. Other providers expanded on these

remarks by saying, “Well received by all providers. There was a sense of it being too good to be true, and it must be a trick, or it would be snatched away just as we got used to it” (S20).

However, not all providers were interested in participating in PRAT, some for financial reasons: “Some of us were interested and others not. There was no financial incentive, only potential loss, so it was difficult. It was agreeing to a >10% cut in patient time and therefore pay. But I managed to maintain my productivity over the year, which was good” (S19). Managers also reported various responses from their providers, with one stating, “100% of my providers were on board with the idea” (S21). Others said, “I asked all providers if they were interested in PRAT time to determine their interest. We did not have a lot of interest in this office” (S6). Practice managers also responded that they felt ready and supported to implement the intervention: “I did not feel significantly affected by the implementation and found it to be a low-stress project” (P8). These responses indicate that while PRAT time was well received, some specific providers or practices were not as widely implemented.

#### *Culture:*

The discussion of culture was distributed into two distinct categories by many participants: culture in their practice and culture in the organization. Many respondents stated that they felt that the practice culture was overall positive, with a few participants feeling that there were still systemic issues:

“I think the culture of my practice is very team-oriented, and we communicate very effectively” (S5).

“We have a great culture in our practice. Everyone gets along for the most part. All the providers are approachable and willing to teach anyone” (S6).

“For my practice, they are very detailed and want to provide the best care for patients. They are flexible, realize that change happens, and are good with making changes on the go. The staff here are very receptive to ideas and give feedback on opportunities regularly” (S7).

“Our office culture is overall good, but we have had a lot of upheaval in provider, management, and staff in the past few years, so sometimes there is a lack of cohesion, but I am sure we are not unique. We lost fifteen providers in just over five years and have had five medical directors and four office managers. None of the clerical staff have been with us more than three years” (S19).

Participant responses regarding the culture at Nuvance as an organization were more nuanced, with some describing a gradual improvement over the past few years and others not looking at it as favorably:

“Very good. I find them responsive but understand that I work for an organization, and that change is slow or nonexistent. Providers feel at the bottom of the totem pole even though we drive revenue and are the face of the organization. The initiatives put in place over the past couple of years have been helpful: PRAT, virtual scribes, vacation coverage” (S19).

“Culture of the organization is corporate” (S20).

“Fairly middle of the road. Positive changes have happened over the past few years, but not all have been excellent. Limited engagement from higher leadership of primary care service” (S24).

“The organization has a top-down culture which mandates coming from on high that often are not realistic on a day-to-day basis when trying to see a large volume of patients. The practice is more of a cooperative culture, everyone pulling together to care for patients” (S21).

These responses paint a picture of the organization’s stronger culture at the practice level than at the organizational level. While higher-level leadership created and passed down PRAT to the practice, the practice’s responses to it could have been impacted by their practice cultures, customs, and norms.

#### *Relational Connections:*

The most overwhelmingly positive characteristic of the inner setting was relationships among colleagues in primary care practices. This was a large facilitator for the intervention, as most respondents described collegial, supportive, friendly, and collaborative relationships. This was felt whether the relations described were provider to provider, manager to manager, or provider to manager. However, relationships between practice staff and senior-level leadership were more strained.

“I have a very close working relationship with the other doctors in my practice. We support each other, which can involve clinical help with patients and administrative help, such as IT or scheduling issues. I have an excellent relationship with the administrative leadership in my office. The practice administrator is responsive to issues and proactive in helping to fulfill our needs. I do not have much of a relationship with senior leadership” (S21).

“We have a collegial relationship amongst providers. Their offices are always open for suggestions and discussion of new ideas” (S23).

“I would say we care about our providers and staff the most in the primary care service line. We always aim to communicate effectively and provide support” (S1).

“The organization can be out of touch with the ins and outs of practice primary care medicine on a daily basis” (S25).

Like culture, most participants felt closest to those they interacted with daily in their practices rather than those within the organization or in high-level leadership roles.

### **Individuals Domain:**

#### *High-Level Leaders:*

A few participants mentioned that engagement from high-level leadership was necessary to implement PRAT. PRAT was initially the idea of the VP and SVP of primary care, who piloted the idea first to see if it would work on a practical level and to understand the effect it would have on a few key performance indicators (wRVUs, patient experience, provider feedback, access).

After the pilot, they brought the intervention to the medical group's Chief Operations Officer, who approved it. Then, it went to the chief physician executive at Nuvance, and ultimately, it was presented to the chief executive officer, chief development officer, and chief strategy officer. As one participant said, “We got the thumbs up because of the need for more investment in primary care” (P3).

#### *Implementation Facilitators:*

In this case, the implementation facilitators were the practice managers. Each practice has a dedicated practice manager unless it is a very small practice with two or fewer providers; in this case, one practice manager may cover multiple practices in the same geographic region. Practice managers have administrative expertise in running a practice, including staffing, scheduling, finances, patient experience, and patient relations. For PRAT implementation, many managers discussed their role as shepherding the intervention through their practices and ensuring that it was rolled out smoothly for their providers and staff. The practice manager did such tasks as:

Schedule auditing - to understand how far in advance a provider was booking out and when they could begin PRAT if they chose to participate.

Template building—Once a go-live date for PRAT was decided, a new provider template would need to be built to ensure that providers always had their PRAT time blocked off from patients.

Provider & Staff Communication – practice managers were integral in communicating information from leadership to providers in the office.

*Implementation Leads:*

The implementation leads discussed during the interviews were the senior vice president (SVP) for primary care and the senior project manager (SPM) for primary care. The SVP originated the idea of trying PRAT in the primary care service line. They were integral in setting the goals for the intervention, creating KPIs, rolling out the pilot phase, and selling the idea to senior leadership at Nuvance. The SVP also communicated with PRAT during PCMC calls and joined every individual practice meeting to discuss the roll-out.

The primary care service line also employs its dedicated project manager, overseeing the implementation of the intervention in all practices. The SPM created an interest survey for PRAT, where providers could decide whether to participate. They helped make the official policies for PRAT. They held meetings with each practice manager and physician lead to discuss every provider interested in participating and when they could go live. They served as a crucial

point of contact for any questions and helped procure the data needed to understand PRAT's impacts in the pilot phase.

### **Implementation Process:**

#### *Planning:*

The participants had overall positive views of the planning for PRAT. On the leadership level, the roll-out was described as “methodical,” and the leader discussed that due to the size and span of the organization, anything less than a methodically planned implementation would not have been successful. “I think the rollout went very well overall because it’s a big organization spanning two states with lots of different primary care practices. So, to implement it, it was done very methodically. We had a timeline where practices were going live [on PRAT]. We looked at the implications from the 50,000 level. We were not in the operations front line, but I think it was a data-driven, timeline-driven, provider-driven operation “(P3).

Leadership participants described the process of planning for implementation as the following:

1. “Ensure system leadership supported the program.
2. Engaged primary care stakeholder to define what hours would be reasonable (32, 36, or 24) vs. their existing 37.5 for full-time FTE.
3. I did a gap analysis to define who would decrease hours, who would increase hours, and who would stay the same.
4. Modeled potential budgetary impact.
5. Gained final approval and then implemented rollout in a systematic way across primary care “(S3).



The planning process then trickled down to the practice and manager level, which had to plan the rollout according to the needs of their specific practice. Managers described the tasks needed to prepare for PRAT:

“I helped gather all the provider’s FTE statuses and their original face-to-face hours and calculated how many hours each would need after PRAT implementation” (S1).

“I edited templates to block protected time off for the provider and adjusted appointments” (S5).

“Worked with the provider to adjust their schedule to what they felt would give relief” (S7).

From the providers’ perspective, the planning for PRAT was generally positive, with most stating that it was well communicated, planned, and executed.

#### *Doing:*

Participants described how the intervention could easily lead to a trial and incremental change phases within the wider implementation rollout. The trial phase was completed in three practices with different environments and challenges. The pilot was conducted for three months in these practices to assess the impacts of PRAT on established KPIs. The success of this pilot allowed the intervention to be diffused throughout the organization. However, this diffusion did not occur simultaneously but incrementally through the practices.

For example, some practices had no providers interested in PRAT, so those practices never had to partake in any intervention. Other practices had a mix of providers doing PRAT and

others not, so those managers had to meet with leadership and discuss the rollout at the provider level. Still, other practices had a 100% participation rate of PRAT. So, the manager had to juggle patients and priorities to align the appropriate go-live schedule for each provider in their practice. This incremental rollout allowed leadership to learn from the mistakes and challenges faced in some practices and apply those lessons to practices and providers starting later.

One aspect of the “doing” phase covered by some participants was the challenge of the time of day the providers take PRAT and how that affects the way it is used. Participants felt that more guidance and policies should have been set around how PRAT time could be taken: “I have a provider that uses it all at once, multiple that spread it out over half an hour four times per week, and I have a provider that uses 2.5-hour chunks. I am finding that the provider who takes it all at once is not using it correctly. I am not noticing that they are caught up on things or that anything is addressed in a timelier manner” (P1).

## **Implementation Outcomes**

### *Anticipated Implementation Outcomes:*

On all levels, participants discussed the possible outcomes of implementing PRAT, both positive and negative. On the positive side, many were excited about the prospect of the intervention helping providers with their well-being. “I hoped they would see it as a relief for them and “the grind.” And that they would appreciate that we as leaders saw them struggling with the demands of the practice and responded” (S2).

Similarly, another leader anticipated the outcomes:

- “1. Decrease need [from providers] to reduce FTE status to meet administrative demands.
2. Reduce pajama time and help to drive physician/APP retention
3. Drive staff retention by enabling better ability to keep up with inbox/pools as they were not constantly rooming patients for their physicians/APPs
4. Drive recruitment of additional physicians/APPs and staff for the above reasons, which could reduce the workload on existing physicians/APPs and staff” (S3).

On the provider and manager level, the anticipated outcomes were more mixed. Some participants felt optimistic that the intervention would improve provider wellbeing and satisfaction with their work. However, others anticipated it could negatively impact productivity and access, stating that “initial concern was about spending less time patient-facing” (P8). Similarly, another participant was concerned about the existing patients who were booked for appointments and whether patients would need to have their appointments moved and experience dissatisfaction in the practice. This concern was diminished when the stepwise provider-by-provider rollout was described, but patient access was always high in the minds of all staff.

#### *Actual Implementation Outcomes:*

Actual implementation outcomes were discussed at both the leadership and manager levels. For leadership, they expressed being pleased that there was such an uptake and interest in PRAT from the providers. They enjoyed feeling like the providers expressed increased satisfaction with the workplace. Some leaders felt that there was still work to make PRAT

successful and improve provider wellbeing on a larger scale. “On a scale of 1 to 10, I think we are about a 6.5. We could have done things differently and should have done differently” (P5).

Managers express seeing a difference in the morale of their clinicians.

“PRAT has been successful; the doctors appear happier having that time rather than working late or from home” (S21).

“Physicians/APPs commented that it made a big difference in their quality of life” (S3).

“Yes, in general, it is successful. It has given overflow time and time for providers and staff to catch up on pools and patient callbacks” (S5).

Managers also discussed some of the drawbacks and negative impacts of PRAT:

“[PRAT] is somewhat successful. It is viewed as a luxury and is not respected or valued like patient-facing hours. There is an underlying sense that PRAT time interferes with seeing more patients and takes away from the company goals” (S18).

“Somewhat successful. It is a recruitment tool, and I think the clinicians appreciate the effort. Volume/Productivity have not been significantly affected by the implementation” (S2).

“It has reduced some of the APP’s productivity but leads to more satisfaction. No one is speaking about leaving to my knowledge” (S4).

Overall, managers and leaders were happy about the improvement in morale and satisfaction but expressed lingering concern regarding the impact on productivity and alignment with organizational goals.

### *Innovation Recipient Impact*

Clinicians expressed positive feelings towards the personal and professional impacts of PRAT. Many felt they were “back in control” of their time and schedules. A few stated that they

were now able to make it “home for dinner” or spend more time with family, which was not something that had not been the norm in past years, and that alone was making a hectic workday psychologically more satisfying. “You begin to lose autonomy, the autonomy of how many patients you see, your schedules. It is basically what jail is, right? Losing autonomy to leave whenever you want and come whenever you want. I almost did not want to do [PRAT] because I was worried about my schedule and everything, but when it began, I decided I would do it, and I was thrilled. I do not see fewer patients; I’m not less busy, but psychologically, somehow, I feel less busy. It is psychological, and the fact that I can be home for dinner for me” (P4).

“Great tool to have. I thought I would not participate as I would like to maximize my access, but then I realized that a medical career is a marathon and not a sprint. This is something that can be done to improve my mental health and resilience. My RVU productivity has not dipped, which is even more interesting” (S8).

“PRAT is successful in giving me a chance to address unfinished messages, paperwork, charting, and more” (S23).

“Improved significantly my satisfaction as a provider and my relationship with patients. Especially if they could not come to the office on a particular day, get their results, and have their provider review and discuss them” (S10).

“Before I implemented this, I was up at 5:30 am most mornings to prepare notes and completing work after hours at night, leaving inadequate time for personal matters” (S14).

While a small percentage of innovation recipients did not feel that PRAT affected their professional or personal lives, the overwhelming majority were optimistic about the changes they’d seen in their working and personal lives.

## CHAPTER FIVE

### DISCUSSION

This applied doctoral project examined the implementation and outcome of protected administrative time on patient access and provider burnout within a multi-state primary care medical practice network.

#### *Interpretation of Findings:*

This study had two main objectives. First, to evaluate the association of PRAT on the following service delivery indicators: a) primary care clinicians' productivity (wRVUs), b) average appointments per day, c) patient satisfaction (likelihood to recommend), and d) clinician time to the next available appointment for new patients, established sick patients and established patient physicals and second to describe the implementation of protected administrative time (PRAT) using the Consolidation Framework for Implementation Research (CFIR).

The study first hypothesized that PRAT participation would negatively affect primary care clinicians' productivity (wRVUs). The regression analysis results were not supported by this hypothesis, with the analysis showing no significant changes for any characteristic in the PRAT group. Thus, we fail to reject the null hypothesis. This was further bolstered by the comments made by the open-ended survey and interview participants, many of whom reported little to no change in their productivity at the end of the year. Productivity was one of the main potential barriers to implementation because there was a fear that the implementation of PRAT would decrease productivity to the point where the intervention did not make financial sense to implement. Productivity and funding are also two of the main structural domains of the conceptual framework of primary care organizations (Hogg Et.al, 2008). Many providers also

felt concerned about their productivity and almost chose not to participate in PRAT due to the decreased productivity they thought was imminent. However, like the results of the pilot described above, the analysis did not show a statistically significant change in productivity between the intervention group and control group. The reasons for this finding could be two-fold. First, the standardization of appointment times and types was implemented concurrently with PRAT-directed managers to convert 30-minute appointments into 15-minute appointments if it made sense from a patient care perspective. This could have stabilized productivity and average daily appointments, even with decreased patient-facing hours. Second, providers described in their interviews that they continued to “add on” patients during PRAT time, whether because they felt that they needed to or due to feeling like they now had the choice and if they were caught up on tasks, could see a patient during their schedule admin time. The five dimensions of access, as described by Jean-Frederic et al. 2013, approachability, acceptability, availability, affordability, and appropriateness, impacted the provider’s behavior when it decided to take on patients during their PRAT time. Providers often favored increased access and patient satisfaction vs. their protected, sacred administrative time. This sacrifice could be called back to the idea that the culture of medicine plays into burnout, with providers valuing service and compassion over self (Nedrow et al., 2013). This should be monitored by leadership and management to ensure that the ideals behind the implementation of PRAT time are respected. As an operational measure, productivity is one of the most critical outcomes for leaders looking to implement PRAT. The outcome of this study shows that PRAT can be implemented without negatively impacting provider productivity or financial standing.

The study’s second hypothesis was that average appointments per day would be unaffected by PRAT participation. The regression analysis results supported this hypothesis,



which showed no significant changes in average daily appointments for the PRAT group. Thus, we fail to reject the null hypothesis. This outcome was also supported by comments made by provider participants who espoused that their productivity had not dipped (which is directly correlated with average appointments per day) and that although they were doing PRAT, they did not necessarily feel that they were “less busy.” Access and availability are two of the main performance domains of healthcare service delivery of the conceptual framework for primary care organizations (Hogg Et.al, 2008). Productivity measured in wRVUs and appointments per day goes hand in hand with ensuring the organization's financial viability. This outcome shows that PRAT is not associated with decreased appointments per day vs. providers that did not participate in PRAT.

The third hypothesis was that PRAT participation would be negatively associated with patient satisfaction (likelihood to recommend). The regression analysis did not prove this hypothesis, as the study showed no significant differences between the intervention groups. Thus, we fail to reject the null hypothesis. The likelihood to recommend is vital for leadership as patient satisfaction and experience are among the cornerstones of healthcare quality and outcome measures. Provider–patient relationships are one of the leading performance domains of healthcare service delivery in the conceptual framework of primary care organizations (Hogg et al., 2008). The interview and open-ended survey participants discussed the fear that PRAT would limit access and decrease patient satisfaction. The analysis did not substantiate this concern. While access was negatively impacted, it did not have an associated impact on patient experience scores. This could be because the only significant findings for the time to the next available appointment were for new and established patient appointments. As discussed in participant interviews and open-ended surveys, sick patient appointments are an area where providers can

lose patient satisfaction if patients cannot be seen promptly when sick. Since the analysis did not show a statistically significant decrease in the next available appointment for sick visits, patient satisfaction may have remained the same as that of those who did not participate in PRAT.

The final hypothesis for this study was that PRAT participation would be positively associated with clinicians' time to the next available appointment for new patients, established sick patients, and established patient physicals. The regression analysis did not show that this hypothesis was accurate. For sick visits, the regression showed no significant difference between the intervention and control groups. Thus, we fail to reject the null hypothesis. For established patient physicals, the analysis showed a negative association with an additional 36.55 days for PRAT providers. Thus, we reject the null hypothesis. Similarly, the PRAT provider saw an additional 18.24 days added to patient wait times for new patient appointments, and we can reject the null hypothesis.

First contact accessibility is one of the main performance domains of healthcare service delivery in the conceptual framework of primary care organizations (Hogg Et.al, 2008). From the leadership perspective, these three appointment types (sick, new patient, and established sick) are essential in the primary care setting. First, the outcomes of this analysis showed that access was not affected negatively when it came to sick patient appointments, which is one of the most important aspects of access to both the patient and leadership (Panagioti et al.,2018; Vogel et al.,2019). This is due to sick appointments' strong ties to patient satisfaction and the need to decrease emergency room utilization (Vogel et al.,2019). Second, the priority is time to next available for new patient visits because new patients are essential to achieving financial well-being for any healthcare organization, and providers should strive to add new patients to panels and practices as appropriate (Mayo-Smith, 2022). The final priority would be the time of the next

available appointment for new patient physicals. This appointment type is more heavily regulated by insurance, which often only allows for one annual physical per year, and it must be exactly a year or more from the last physical the patient received. Evidence also shows that while yearly physicals are a practice norm, they do not improve outcomes and are not recommended for asymptomatic adults (Bloomfield et al., 2011). Thus, an additional 30 days of waiting for PRAT provider patients may not harm patients' health.

The interview and open-ended survey data analysis using the Consolidated Framework for Implementation Science Research yielded numerous insights into barriers and facilitators to implementing an intervention such as PRAT. These insights also fit into this study's other conceptual framework for primary care organizations (Hogg Et al., 2008).

First, one of the most impactful impacts on the leadership, management, and provider levels was having open communication channels and strong interpersonal communication before launch. The organization had leadership-level communication (monthly CEO meetings), monthly primary care management committee meetings with the lead physician and practice manager, and monthly provider meetings involving all the staff and providers in each office. While studies have shown that the pandemic disrupted organizational communication (DePuccio et al., 2022), Nuvance appears to have bucked this trend. These tiered communication channels allowed discussions about the PRAT intervention to flow freely throughout all levels of the organization and allowed for a more streamlined distribution of information.

The second insight from this analysis was that the internal and external environment was primed for implementing this type of intervention. For example, the population and community characteristics described in the conceptual framework for primary care showed that following

national trends, Nuvance providers reported patients having more complex needs, coming in with more issues, and utilizing the portal messaging service more often (Linzer et al., 2015). Per the interview, before PRAT, clinicians felt that these complex needs and the increased expectations of patients were creating an untenable environment where there was not enough time in the day to accomplish everything that was needed. Many clinicians took work home, stayed late, came in early, etc. (Dillon et al., 2019). These conditions made the successful implementation of PRAT much more likely because clinicians were primed and ready for a change. They were willing to deal with a slight disruption in their workflow or schedule if it meant that their workload might become more bearable. The external environment also played a role in the market, with competitors turning to PRAT to attract new providers. This competitive environment gave the leadership a renewed sense of needing to undertake this project for the organization's well-being.

The third insight was that the culture of individual practice played the most significant role in the successful implementation of PRAT. Many providers described their relationships with those in the organization as weak at the top level and stronger at the local level. This aligns well with the structural domain within the conceptual framework for primary care organizations, where organizational structure and dynamics are critical factors in health service delivery (Hogg et al., 2008). There appeared to be some distrust and distance between executive leadership and providers. However, within the practice, interpersonal relationships appeared much stronger – those between the practice manager and clinicians and clinician to clinician.

These dynamics affected whether PRAT was successfully implemented in two key ways. First, practices with a more experienced manager have an associated increase in communication, information dissemination, support for PRAT implementation, and more providers participating in PRAT. This points to the importance of having a subject matter expert in each intervention

area who can serve as a facilitator and champion. Second, there were few practices where only a few providers partook in the intervention, while in most instances, providers either all did PRAT or did not. This speaks to clinicians relying on each other to inform practice norms. While some practices may have a culture of solely focusing on productivity, others may value work-life balance and well-being above production.

The final insight was the role of the pilot phase in the successful implementation of PRAT. The trialability of the intervention was hugely critical in its success for two main reasons. First, it allowed for understanding how to best roll out the intervention. Different methods could be tried and tested in the other practice environments before the general rollout for the total population. Choosing different practice contexts, a smaller practice, an extensive practice, a practice with a strong culture, and one with a weak culture, was paramount because it allowed for a deep understanding of how these characteristics would impact the intervention when rolled out to the general population. This pilot helped because it allowed leadership to understand the impact on outcomes and helped sell the program to executive leadership. There were many concerns and questions regarding the PRAT intervention. What effect would it have on patient's access to care? Would our productivity go down? How many providers would want to do it? These questions were all answered to some extent during the pilot phase because leadership could track how many providers were interested and what their outcomes were before and after. These results were the lynchpin for the successful launch of the program.

### *Limitations and Strengths*

The limitations of this study are as follows. First, the researcher manually entered some of the data for this study, meaning certain inaccuracies or mistakes were more probable. Second, some data, such as the likelihood to recommend for fiscal year 2020, was missing due to the organization's merger of systems that occurred in 2019 and took a while to implement fully. Third, the study design allows for the examination of correlation, but it cannot confirm causality. Fourth, the open-ended surveys and interviews were analyzed together instead of separately, precluding the exploration of potential differences. Fifth, there was an inherent bias due to the exclusion of the people in the sample who did not have complete data. Sixth, the small sample size may have resulted in an underpowered study, limiting the ability to detect small effect sizes.

Finally, the researcher was intimately familiar with the rollout of the PRAT intervention as she worked as a project manager for primary care during implementation. The researcher tried to reduce bias by only allowing verified participant quotations to be a part of the CFIR analysis and instructed participants to discuss their perspectives of the project as if they were outsiders and unaware of the intricacies of the implementation. The researcher also blinded participant responses to reduce the chance that personal relationships with participants could bias the researcher. However, while these steps were taken to minimize bias, this remains a significant limitation in this study.

The strengths of this study are that it is a novel, real-world study using primary care clinician participants. To this researcher's knowledge, this type of study has never been conducted on protected administrative time with the depth or breadth as was done in this study. While PRAT is widely used in organizations, its effects have not been studied. The other

strength of this study was the use of interviews and open-ended surveys to understand the impact of PRAT on providers within the organization. This type of qualitative data helps contextualize the quantitative findings and brings the effect of these types of interventions to life.

*Practice Implications and Recommendations:*

1. *A balance must be found within any organization between productivity, access, and clinician well-being.* While patients are the customers in any healthcare organization, leadership should also prioritize the needs of the clinicians and staff who service their patient populations. Productivity and patient access are critical indicators of an organization's financial well-being and patient satisfaction with the services provided (Dillon et al., 2019). However, clinician wellbeing should also be at the top of the list. Executive leadership should strive to find interventions that present a “win-win,” with PRAT as one example. Productivity and access were not negatively impacted in a significant way, but providers were hugely optimistic about the intervention's impact on their personal and professional lives. Leadership should focus energy on finding other “win-win” scenarios.
2. *A well-run pilot helps foster faith in the intervention for leadership and helps facilitators plan for widespread dissemination.* Choosing an intervention that can be piloted in a smaller area of the organization was crucial to the success of PRAT. Conducting a pilot course should be a best practice for any widespread organizational change because it allows leaders to understand the impact on outcomes and processes. These lessons are essential for promoting the program to high-level leadership who may be wary of these changes and help program leads understand how best to tailor the program to the rest of the organization.

3. *Leadership should seek to measure burnout within their organizations.* As we adapt to a post-pandemic world, it is increasingly important for leadership to focus on understanding how the organization's culture, communications, processes, and technology contribute to burnout. This study's qualitative findings revealed further areas of improvement in provider burnout. Leadership should take a more active role in finding the pain points within their organizations to facilitate continuous quality improvement.
4. Recommendations for future research include replicating this intervention in another organization to see if the results are similar. Additional data could also be collected, such as a pre-post PRAT intervention provider satisfaction survey to understand the impact on provider wellbeing and burnout. Researchers could also include an analysis of the effect of PRAT on turnover in the organization. An additional research area would be to evaluate non-PRAT burnout interventions further for impact on productivity, access, and satisfaction, as concerns can keep leadership from applying innovative techniques.

## Conclusion

Exacerbated by the COVID-19 pandemic, burnout in primary care clinicians has hit new heights. With the baby boomer population continuing to age and even younger patients having more complex needs and expectations, leaders in healthcare organizations nationwide need to be looking to implement interventions that aim to improve provider well-being. The healthcare system, public health, and the health of communities everywhere cannot endure more clinicians leaving the profession, cannot take more medical students not choosing primary care, and cannot tolerate our primary care providers suffering from the numerous symptoms of overwork.



The results of this study show that PRAT could become a legitimate option for more organizations and a best practice for healthcare systems. Providers feel a higher sense of well-being, autonomy, and ease in having the time to address the complexity they deal with every day, and it has a negligible impact on the KPIs that matter to leaders. Careful planning and best practices in implementation can lead to a successful roll-out. However, PRAT and interventions like it are just the beginning of what needs to be implemented in primary care to help stop the coming crisis. Deep-rooted issues like those facing primary care require intensive systematic and cultural change.

## REFERENCES

- Three challenges facing primary care* / *Greenway Health*. (n.d.). Retrieved November 26, 2022, from  
*2019 Update: The complexities of Physician Supply and Demand: Projections from 2017 to 2023*. (2019). Association of American Medical Colleges. [https://aamc-black.global.ssl.fastly.net/production/media/filer\\_public/31/13/3113ee5c-a038-4c16-89af-294a69826650/2019\\_update - the complexities of physician supply and demand - projections from 2017-2032.pdf](https://aamc-black.global.ssl.fastly.net/production/media/filer_public/31/13/3113ee5c-a038-4c16-89af-294a69826650/2019_update_-_the_complexities_of_physician_supply_and_demand_-_projections_from_2017-2032.pdf)
- 2020 Profile of Older Americans*. (n.d.).
- About CAHPS*. (n.d.). Retrieved August 8, 2023, from <https://www.ahrq.gov/cahps/about-cahps/index.html>
- AMA cost analysis examines primary care physician turnover*. (2022, February 28). American Medical Association. <https://www.ama-assn.org/press-center/press-releases/ama-cost-analysis-examines-primary-care-physician-turnover>
- Ambulatory Training*. (n.d.). Retrieved August 8, 2023, from  
<https://medicine.yale.edu/intmed/residency/pc/curriculum/ambulatory/training/>
- Ansell, D., Crispo, J. A. G., Simard, B., & Bjerre, L. M. (2017). Interventions to reduce wait times for primary care appointments: A systematic review. *BMC Health Services Research*, 17(1), 295.  
<https://doi.org/10.1186/s12913-017-2219-y>
- Apaydin, E. (2020). Administrative Work and Job Role Beliefs in Primary Care Physicians: An Analysis of Semi-Structured Interviews. *SAGE Open*, 10(1), 2158244019899092.  
<https://doi.org/10.1177/2158244019899092>

- Baron, A. N., Hemler, J. R., Sweeney, S. M., Tate Woodson, T., Cuthel, A., Crabtree, B. F., & Cohen, D. J. (2020). Effects of Practice Turnover on Primary Care Quality Improvement Implementation. *American Journal of Medical Quality*, 35(1), 16–22.  
<https://doi.org/10.1177/1062860619844001>
- Basu, S., Berkowitz, S. A., Phillips, R. L., Bitton, A., Landon, B. E., & Phillips, R. S. (2019). Association of Primary Care Physician Supply With Population Mortality in the United States, 2005-2015. *JAMA Internal Medicine*, 179(4), 506–514.  
<https://doi.org/10.1001/jamainternmed.2018.7624>
- Benson, T., & Benson, A. (2023). Routine measurement of patient experience. *BMJ Open Quality*, 12(1), e002073. <https://doi.org/10.1136/bmjopen-2022-002073>
- Berkowitz, E. N. (2021). *Essentials of Health Care Marketing*. Jones & Bartlett Learning.
- Bg, A., Jw, B., Md, W., Jl, T., Wj, T., Ca, S., & Vj, G. (2017). Tethered to the EHR: Primary Care Physician Workload Assessment Using EHR Event Log Data and Time-Motion Observations. *Annals of Family Medicine*, 15(5). <https://doi.org/10.1370/afm.2121>
- Bhardwaj, A. (2022). COVID-19 Pandemic and Physician Burnout: Ramifications for Healthcare Workforce in the United States. *Journal of Healthcare Leadership*, 14, 91–97.  
<https://doi.org/10.2147/JHL.S360163>
- Bloomfield, H. E., & Wilt, T. J. (2011). *Evidence Brief: Role of the Annual Comprehensive Physical Examination in the Asymptomatic Adult*. Department of Veterans Affairs (US).  
<http://www.ncbi.nlm.nih.gov/books/NBK82767/>
- Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: Care of the patient requires care of the provider. *Annals of Family Medicine*, 12(6), 573–576. <https://doi.org/10.1370/afm.1713>

- Bond, A. M., Casalino, L. P., Tai-Seale, M., Unruh, M. A., Zhang, M., Qian, Y., & Kronick, R. (2023). Physician Turnover in the United States. *Annals of Internal Medicine*, 176(7), 896–903. <https://doi.org/10.7326/M22-2504>
- Chapman, J., Wegman, M., Thompson, M., & Barrett, M. (2022). 216 Impact of Proposed Core Faculty Protected Time Requirements: National Survey of Emergency Medicine Faculty on Work Hours and Associated Job Satisfaction. *Annals of Emergency Medicine*, 80(4), S96. <https://doi.org/10.1016/j.annemergmed.2022.08.241>
- Chung, S., Dillon, E. C., Meehan, A. E., Nordgren, R., & Frosch, D. L. (2020). The Relationship Between Primary Care Physician Burnout and Patient-Reported Care Experiences: A Cross-sectional Study. *Journal of General Internal Medicine*, 35(8), 2357–2364. <https://doi.org/10.1007/s11606-020-05770-w>
- cskopecce. (2021, September 30). Is There a Shortage of Primary Care Physicians? Evaluating the Claims. *Medical Blog*. <https://www.sgu.edu/blog/medical/is-there-a-shortage-of-primary-care-physicians/>
- DePuccio, M. J., Sullivan, E. E., Breton, M., McKinstry, D., Gaughan, A. A., & McAlearney, A. S. (2022). The Impact of COVID-19 on Primary Care Teamwork: A Qualitative Study in Two States. *Journal of General Internal Medicine*, 37(8), 2003–2008. <https://doi.org/10.1007/s11606-022-07559-5>
- Dillon, E. C., Tai-Seale, M., Meehan, A., Martin, V., Nordgren, R., Lee, T., Nauenberg, T., & Frosch, D. L. (2020). Frontline Perspectives on Physician Burnout and Strategies to Improve Well-Being: Interviews with Physicians and Health System Leaders. *Journal of General Internal Medicine*, 35(1), 261–267. <https://doi.org/10.1007/s11606-019-05381-0>

*Doctor shortages are here—And they'll get worse if we don't act fast.* (n.d.). American Medical Association. Retrieved January 24, 2023, from [https://www.ama-assn.org/practice-](https://www.ama-assn.org/practice-management/sustainability/doctor-shortages-are-here-and-they-ll-get-worse-if-we-don-t-act)

[management/sustainability/doctor-shortages-are-here-and-they-ll-get-worse-if-we-don-t-act](https://www.ama-assn.org/practice-management/sustainability/doctor-shortages-are-here-and-they-ll-get-worse-if-we-don-t-act)

*Doctors need 27 hours a day to provide recommended care: Study.* (n.d.). Retrieved November 22, 2022, from <https://www.fiercehealthcare.com/providers/primary-care-docs-need-27-hours-day-provide-guideline-based-care-study-finds>

DoctorsManagement. (2022, July 14). Learn Why Analyzing Your Provider Utilization and Medical Practice Scheduling Process is Key to Maximizing Revenue. *DoctorsManagement*.

<https://www.doctorsmanagement.com/learn-why-analyzing-your-provider-utilization-and-medical-practice-scheduling-process-is-key-to-maximizing-revenue/>

Donnelly, C., Ashcroft, R., Bobbette, N., Mills, C., Mofina, A., Tran, T., Vader, K., Williams, A., Gill, S., & Miller, J. (2021). Interprofessional primary care during COVID-19: A survey of the provider perspective. *BMC Family Practice*, 22(1), 31. <https://doi.org/10.1186/s12875-020-01366-9>

Ellner, A. L., & Phillips, R. S. (2017). The Coming Primary Care Revolution. *Journal of General Internal Medicine*, 32(4), 380–386. <https://doi.org/10.1007/s11606-016-3944-3>

Elmore, N., Burt, J., Abel, G., Maratos, F. A., Montague, J., Campbell, J., & Roland, M. (2016). Investigating the relationship between consultation length and patient experience: A cross-sectional study in primary care. *British Journal of General Practice*, 66(653), e896–e903. <https://doi.org/10.3399/bjgp16X687733>

Erickson, R., Westfall, E., Chavez, A., Laabs, S., Thacher, T., & DeJesus, R. (2022). One year of COVID: Primary care learning experiences in a health system. *Annals of Family Medicine*, 20 Suppl 1. <https://doi.org/10.1370/afm.20.s1.2780>

- Erickson, S. M., Rockwern, B., Koltov, M., & McLean, R. M. (2017). Putting Patients First by Reducing Administrative Tasks in Health Care: A Position Paper of the American College of Physicians. *Annals of Internal Medicine*, 166(9), 659–661. <https://doi.org/10.7326/M16-2697>
- Faber, D. A., Joshi, S., & Ebell, M. H. (2016). US Residency Competitiveness, Future Salary, and Burnout in Primary Care vs Specialty Fields. *JAMA Internal Medicine*, 176(10), 1561–1563. <https://doi.org/10.1001/jamainternmed.2016.4642>
- Farmer, M. M., Rose, D. E., Rubenstein, L. V., Canelo, I. A., Schectman, G., Stark, R., & Yano, E. M. (2014). Challenges Facing Primary Care Practices Aiming to Implement Patient-Centered Medical Homes. *Journal of General Internal Medicine*, 29(2), 555–562. <https://doi.org/10.1007/s11606-013-2691-y>
- Guidelines for Protected Non-Clinical Time for Faculty in Residency Programs*. (n.d.). Retrieved March 13, 2023, from <https://www.stfm.org/about/keyinitiatives/protected-time-for-faculty/>
- Hackey, R. B., Grasso, V., LaRochelle, M., & Seaver, K. (2018). Rethinking the shortage of primary care physicians. *JAAPA*, 31(6), 47. <https://doi.org/10.1097/01.JAA.0000533662.88073.15>
- Han, S., Shanafelt, T. D., Sinsky, C. A., Awad, K. M., Dyrbye, L. N., Fiscus, L. C., Trockel, M., & Goh, J. (2019). Estimating the Attributable Cost of Physician Burnout in the United States. *Annals of Internal Medicine*, 170(11), 784–790. <https://doi.org/10.7326/M18-1422>
- Hawkins, M. (n.d.). *And Medicare and Medicaid Acceptance Rates*.
- Hersh, L., Salzman, B., & Snyderman, D. (2015). Health Literacy in Primary Care Practice. *American Family Physician*, 92(2), 118–124.
- How Many Patients Can a Primary Care Physician Treat? | AAPL Publication*. (n.d.). American Association for Physician Leadership - Inspiring Change. Together. Retrieved August 8, 2023, from <https://www.physicianleaders.org>

<https://www.publichealth.columbia.edu/research/population-health-methods/difference-difference-estimation>. (n.d.).

Kaplan, G., Lopez, M. H., McGinnis, J. M., Care, C. on O. S. in H., & Medicine, I. of. (2015).

Improving Health Care Scheduling. In *Transforming Health Care Scheduling and Access: Getting to Now*. National Academies Press (US).

<https://www.ncbi.nlm.nih.gov/books/NBK316135/>

Kaplan, G. S. (2015). Health Care Scheduling and Access: A Report From the IOM. *JAMA*, *314*(14), 1449–1450. <https://doi.org/10.1001/jama.2015.9431>

Keppel, G., Cole, A. M., Ramsbottom, M., Nagpal, S., Hornecker, J., Thomson, C., Nguyen, V., & Baldwin, L.-M. (2022). Early Response of Primary Care Practices to COVID-19 Pandemic.

*Journal of Primary Care & Community Health*, *13*, 21501319221085374.

<https://doi.org/10.1177/21501319221085374>

Khalil-Khan, A., & Khan, M. A. (n.d.). The Impact of COVID-19 on Primary Care: A Scoping Review. *Cureus*, *15*(1), e33241. <https://doi.org/10.7759/cureus.33241>

Knight, V. (2019, July 3). American Medical Students Less Likely To Choose To Become Primary Care Doctors. *Kaiser Health News*. <https://khn.org/news/american-medical-students-less-likely-to-choose-to-become-primary-care-doctors/>

Krist, A. H., DeVoe, J. E., Cheng, A., Ehrlich, T., & Jones, S. M. (2020). Redesigning Primary Care to Address the COVID-19 Pandemic in the Midst of the Pandemic. *Annals of Family Medicine*, *18*(4), 349–354. <https://doi.org/10.1370/afm.2557>

Levesque, J.-F., Harris, M. F., & Russell, G. (2013). Patient-centred access to health care:

Conceptualising access at the interface of health systems and populations. *International Journal for Equity in Health*, *12*(1), 18. <https://doi.org/10.1186/1475-9276-12-18>

- Levine, D. M., Linder, J. A., & Landon, B. E. (2018). Characteristics and Disparities among Primary Care Practices in the United States. *Journal of General Internal Medicine*, 33(4), 481–486. <https://doi.org/10.1007/s11606-017-4239-z>
- Linzer, M., Bitton, A., Tu, S.-P., Plews-Ogan, M., Horowitz, K. R., Schwartz, M. D., & for the Association of Chiefs and Leaders in General Internal Medicine (ACLGIM) Writing Group\*. (2015). The End of the 15–20 Minute Primary Care Visit. *Journal of General Internal Medicine*, 30(11), 1584–1586. <https://doi.org/10.1007/s11606-015-3341-3>
- Linzer, M., Levine, R., Meltzer, D., Poplau, S., Warde, C., & West, C. P. (2014). 10 Bold Steps to Prevent Burnout in General Internal Medicine. *Journal of General Internal Medicine*, 29(1), 18–20. <https://doi.org/10.1007/s11606-013-2597-8>
- Martin, S., Phillips, R. L., Jr, Petterson, S., Levin, Z., & Bazemore, A. W. (2020). Primary Care Spending in the United States, 2002–2016. *JAMA Internal Medicine*, 180(7), 1019–1020. <https://doi.org/10.1001/jamainternmed.2020.1360>
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry*, 15(2), 103–111. <https://doi.org/10.1002/wps.20311>
- Mayo-Smith, M. F., Robbins, R. A., Murray, M., Weber, R., Bagley, P. J., Vitale, E. J., & Paige, N. M. (2022). Analysis of Variation in Organizational Definitions of Primary Care Panels: A Systematic Review. *JAMA Network Open*, 5(4), e227497. <https://doi.org/10.1001/jamanetworkopen.2022.7497>
- MD, P. G. (2022, September 28). *Why is it so challenging to find a primary care physician?* Harvard Health. <https://www.health.harvard.edu/blog/why-is-it-so-challenging-to-find-a-primary-care-physician-202209282822>



- Melnyk, B. M., Kelly, S. A., Stephens, J., Dhakal, K., McGovern, C., Tucker, S., Hoying, J., McRae, K., Ault, S., Spurlock, E., & Bird, S. B. (2020). Interventions to Improve Mental Health, Well-Being, Physical Health, and Lifestyle Behaviors in Physicians and Nurses: A Systematic Review. *American Journal of Health Promotion*, 34(8), 929–941.  
<https://doi.org/10.1177/0890117120920451>
- Nedrow, A., Steckler, N. A., & Hardman, J. (2013). Physician Resilience and Burnout: Can You Make the Switch? *Family Practice Management*, 20(1), 25–30.
- Nishimura, Y. (2022). Primary Care, Burnout, and Patient Safety: Way to Eliminate Avoidable Harm. *International Journal of Environmental Research and Public Health*, 19(16), 10112.  
<https://doi.org/10.3390/ijerph191610112>
- Nurok, M., & Gewertz, B. (2019). Relative Value Units and the Measurement of Physician Performance. *JAMA*, 322(12), 1139–1140. <https://doi.org/10.1001/jama.2019.11163>
- Olde Hartman, T. C., Bazemore, A., Etz, R., Kassai, R., Kidd, M., Phillips, R. L., Roland, M., Van Boven, K., Van Weel, C., & Goodyear-Smith, F. (2021). Developing measures to capture the true value of primary care. *BJGP Open*, 5(2), BJGPO.2020.0152.  
<https://doi.org/10.3399/BJGPO.2020.0152>
- Panagioti, M., Geraghty, K., Johnson, J., Zhou, A., Panagopoulou, E., Chew-Graham, C., Peters, D., Hodgkinson, A., Riley, R., & Esmail, A. (2018). Association Between Physician Burnout and Patient Safety, Professionalism, and Patient Satisfaction: A Systematic Review and Meta-analysis. *JAMA Internal Medicine*, 178(10), 1317–1331.  
<https://doi.org/10.1001/jamainternmed.2018.3713>

Patel, R. S., Bachu, R., Adikey, A., Malik, M., & Shah, M. (2018). Factors Related to Physician Burnout and Its Consequences: A Review. *Behavioral Sciences*, 8(11), Article 11.

<https://doi.org/10.3390/bs8110098>

Petterson, S. M., Rayburn, W. F., & Liaw, W. R. (2016). When Do Primary Care Physicians Retire? Implications for Workforce Projections. *The Annals of Family Medicine*, 14(4), 344–349.

<https://doi.org/10.1370/afm.1936>

Phillips, K. E., Haft, H., & Rauner, B. (n.d.). The Key To Improving Population Health And Reducing Disparities: Primary Care Investment. *Health Affairs Forefront*.

<https://doi.org/10.1377/forefront.20220725.733955>

*Physicians Job: PHYSICIAN - FAMILY MEDICINE OR INTERNAL MEDICINE at Johns Hopkins Medicine in Johns Hopkins Community Physicians, Hagerstown, MD.* (n.d.). Retrieved August 8, 2023, from <https://jobs.hopkinsmedicine.org/job/physician-family-medicine-or-internal-medicine-physicians-us-md-hagerstown-johns-ho-626287-8ca3f/>

*Primary Care Workforce Projections / Bureau of Health Workforce.* (n.d.). Retrieved March 6, 2023, from <https://bhw.hrsa.gov/data-research/projecting-health-workforce-supply-demand/primary-health>

*Provider Communications.* (n.d.). Retrieved March 8, 2023, from <https://providernews.anthem.com/connecticut/article/access-standards-for-pcps-specialist-and-behavioral-health-practitioners>

Rabatin, J., Williams, E., Baier Manwell, L., Schwartz, M. D., Brown, R. L., & Linzer, M. (2016). Predictors and Outcomes of Burnout in Primary Care Physicians. *Journal of Primary Care & Community Health*, 7(1), 41–43. <https://doi.org/10.1177/2150131915607799>

- Rao, A., Shi, Z., Ray, K. N., Mehrotra, A., & Ganguli, I. (2019). National Trends in Primary Care Visit Use and Practice Capabilities, 2008-2015. *The Annals of Family Medicine*, 17(6), 538–544. <https://doi.org/10.1370/afm.2474>
- Read “Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care” at *NAP.edu*. (n.d.). <https://doi.org/10.17226/25983>
- Reddy, A., Pollack, C. E., Asch, D. A., Canamucio, A., & Werner, R. M. (2015). The Effect of Primary Care Provider Turnover on Patient Experience of Care and Ambulatory Quality of Care. *JAMA Internal Medicine*, 175(7), 1157–1162. <https://doi.org/10.1001/jamainternmed.2015.1853>
- Reith, T. P. (2018). Burnout in United States Healthcare Professionals: A Narrative Review. *Cureus*, 10(12). <https://doi.org/10.7759/cureus.3681>
- Riley, H. (n.d.). *GSU Library Research Guides: Mixed Methods: Mixed Methods Designs*. Retrieved February 8, 2024, from <https://research.library.gsu.edu/c.php?g=1050115&p=7622501>
- Saag, H. S., Shah, K., Jones, S. A., Testa, P. A., & Horwitz, L. I. (2019). Pajama Time: Working After Work in the Electronic Health Record. *Journal of General Internal Medicine*, 34(9), 1695–1696. <https://doi.org/10.1007/s11606-019-05055-x>
- Sabety, A. H., Jena, A. B., & Barnett, M. L. (2021). Changes in Health Care Use and Outcomes After Turnover in Primary Care. *JAMA Internal Medicine*, 181(2), 186–194. <https://doi.org/10.1001/jamainternmed.2020.6288>
- Saley, C. (2022, June 27). Survey: Nearly half of physicians changed jobs during the pandemic. *CHG Healthcare*. <https://chghealthcare.com/blog/physicians-changed-jobs-survey/>
- Selby, K., Zuchuat, J.-C., Cohidon, C., & Senn, N. (2018). Associations between primary care practice type and patient-reported access. *BMC Health Services Research*, 18(1), 779. <https://doi.org/10.1186/s12913-018-3590-z>

- Shaw, M. K., Scott A. Davis, M. A., Alan B. Fleischer, J., & Steven R. Feldman MD, P. (2014). *The Duration of Office Visits in the United States, 1993 to 2010*. 20. <https://www.ajmc.com/view/the-duration-of-office-visits-in-the-united-states-1993-to-2010>
- Shrank, W. H., DeParle, N.-A., Gottlieb, S., Jain, S. H., Orszag, P., Powers, B. W., & Wilensky, G. R. (2021). Health Costs And Financing: Challenges And Strategies For A New Administration. *Health Affairs*, 40(2), 235–242. <https://doi.org/10.1377/hlthaff.2020.01560>
- Shreffler, J., Petrey, J., & Huecker, M. (2020). The Impact of COVID-19 on Healthcare Worker Wellness: A Scoping Review. *Western Journal of Emergency Medicine*, 21(5), 1059–1066. <https://doi.org/10.5811/westjem.2020.7.48684>
- Sinsky, C. A., Dyrbye, L. N., West, C. P., Satele, D., Tutty, M., & Shanafelt, T. D. (2017). Professional Satisfaction and the Career Plans of US Physicians. *Mayo Clinic Proceedings*, 92(11), 1625–1635. <https://doi.org/10.1016/j.mayocp.2017.08.017>
- Sinsky, C. A., Shanafelt, T. D., Dyrbye, L. N., Sabety, A. H., Carlasare, L. E., & West, C. P. (2022). Health Care Expenditures Attributable to Primary Care Physician Overall and Burnout-Related Turnover: A Cross-sectional Analysis. *Mayo Clinic Proceedings*, 97(4), 693–702. <https://doi.org/10.1016/j.mayocp.2021.09.013>
- Sinsky, C., Colligan, L., Li, L., Prgomet, M., Reynolds, S., Goeders, L., Westbrook, J., Tutty, M., & Blike, G. (2016). Allocation of Physician Time in Ambulatory Practice: A Time and Motion Study in 4 Specialties. *Annals of Internal Medicine*, 165(11), 753–760. <https://doi.org/10.7326/M16-0961>
- Sirkin, J. T., Flanagan, E., Tong, S. T., Coffman, M., McNellis, R. J., McPherson, T., & Bierman, A. S. (2023). Primary Care's Challenges and Responses in the Face of the COVID-19 Pandemic:

Insights From AHRQ's Learning Community. *The Annals of Family Medicine*, 21(1), 76–82.

<https://doi.org/10.1370/afm.2904>

Smith, K. A., Sussman, J. B., Bernstein, S. J., & Hayward, R. A. (2013). Improving the Reliability of Physician "Report Cards." *Medical Care*, 51(3), 266–274.

<https://doi.org/10.1097/MLR.0b013e31827da99c>

Stevens, K., Davey, C., & Lassig, A. A. (2020). Association of Weekly Protected Nonclinical Time With Resident Physician Burnout and Well-being. *JAMA Otolaryngology–Head & Neck Surgery*, 146(2), 168–175. <https://doi.org/10.1001/jamaoto.2019.3654>

Sugarman, J. R., & Reed, A. K. (n.d.). A Framework for Applying Global Learning to Improve Primary Health Care in the United States. *Annals of Global Health*, 89(1), 8.

<https://doi.org/10.5334/aogh.3741>

Sullivan, E. E., Breton, M., McKinstry, D., & Phillips, R. S. (2022). COVID-19's Perceived Impact on Primary Care in New England: A Qualitative Study. *The Journal of the American Board of Family Medicine*, 35(2), 265–273. <https://doi.org/10.3122/jabfm.2022.02.210317>

*Summary Analyses*. (n.d.). Retrieved August 8, 2023, from <https://hcahpsonline.org/en/summary-analyses/>

Swanson, K. M., Matulis, J. C., & McCoy, R. G. (2022). Association between primary care appointment lengths and subsequent ambulatory reassessment, emergency department care, and hospitalization: A cohort study. *BMC Primary Care*, 23(1), 39. <https://doi.org/10.1186/s12875-022-01644-8>

Toscano, F., O'Donnell, E., Broderick, J. E., May, M., Tucker, P., Unruh, M. A., Messina, G., & Casalino, L. P. (2020). How Physicians Spend Their Work Time: An Ecological Momentary

Assessment. *Journal of General Internal Medicine*, 35(11), 3166–3172.

<https://doi.org/10.1007/s11606-020-06087-4>

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<https://link.springer.com/article/10.3758/s13428-021-01627-0>

Vogel, J. A., Rising, K. L., Jones, J., Bowden, M. L., Ginde, A. A., & Havranek, E. P. (2019).

Reasons Patients Choose the Emergency Department over Primary Care: A Qualitative Metasynthesis. *Journal of General Internal Medicine*, 34(11), 2610–2619.

<https://doi.org/10.1007/s11606-019-05128-x>

White, N. (2021). Reducing Primary Care Provider Burnout With Pharmacist-Delivered

Comprehensive Medication Management. *American Journal of Lifestyle Medicine*, 15(2), 133–135. <https://doi.org/10.1177/1559827620976539>

Willard-Grace, R., Knox, M., Huang, B., Hammer, H., Kivlahan, C., & Grumbach, K. (2019).

Burnout and Health Care Workforce Turnover. *Annals of Family Medicine*, 17(1), 36–41.

<https://doi.org/10.1370/afm.2338>

Woolhandler, S., & Himmelstein, D. U. (2014). Administrative Work Consumes One-Sixth of U.S.

Physicians' Working Hours and Lowers their Career Satisfaction. *International Journal of Health Services*, 44(4), 635–642. <https://doi.org/10.2190/HS.44.4.a>

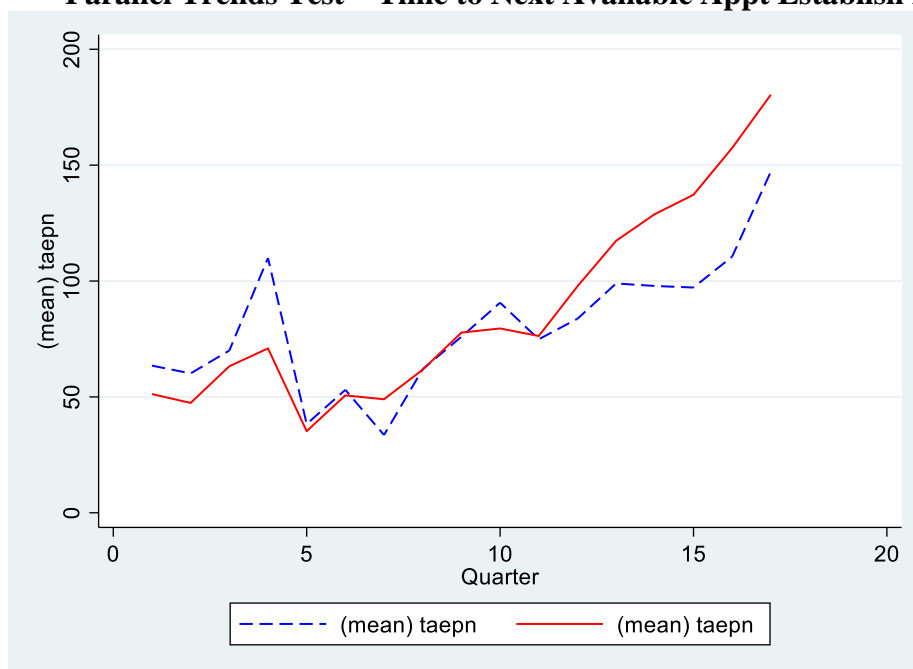
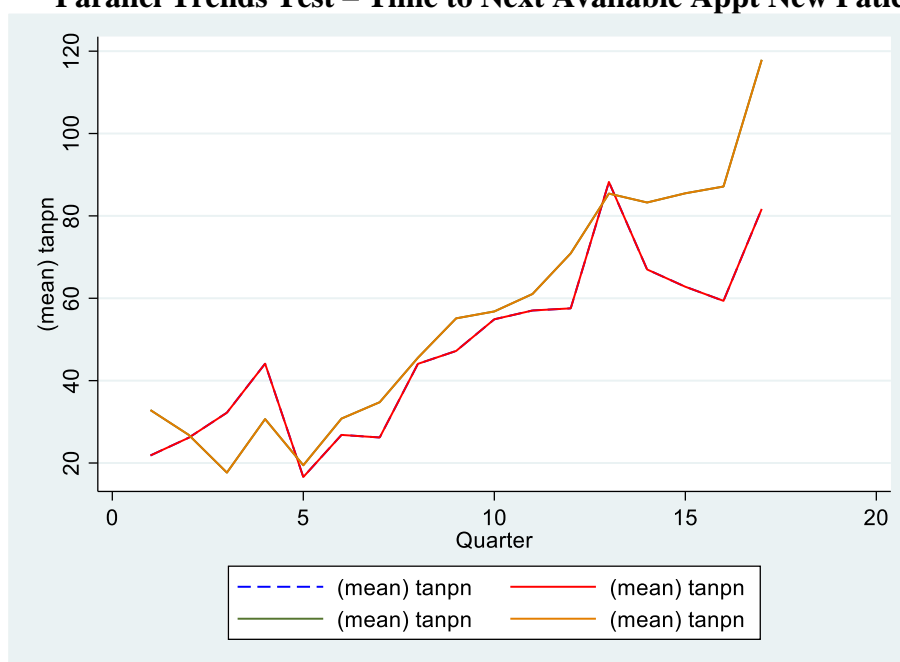
Zabar, S., Wallach, A., & Kalet, A. (2019). The Future of Primary Care in the United States Depends on Payment Reform. *JAMA Internal Medicine*, 179(4), 515–516.

<https://doi.org/10.1001/jamainternmed.2018.7623>

Zhang, X., Lin, D., Pforsich, H., & Lin, V. W. (2020). Physician workforce in the United States of America: Forecasting nationwide shortages. *Human Resources for Health*, 18, 8.

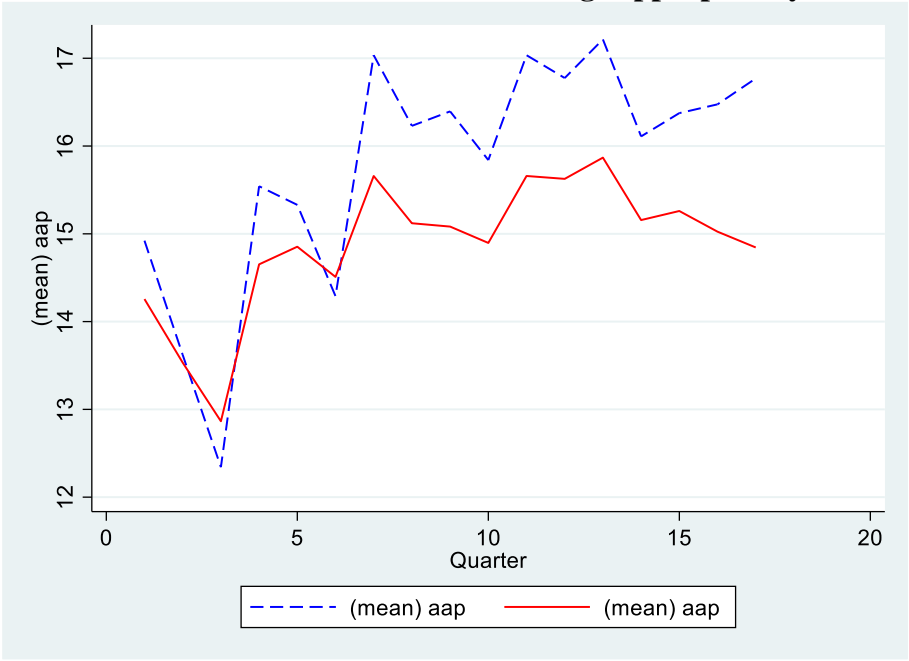
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## APPENDIX

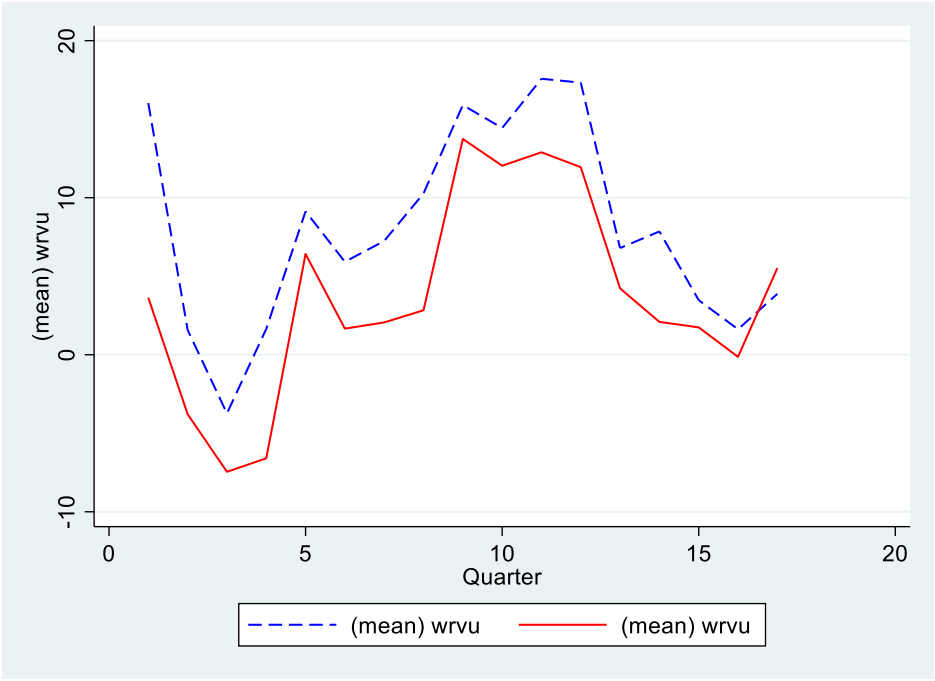
**Parallel Trends Test – Time to Next Available Appt Establish Patients****Parallel Trends Test – Time to Next Available Appt New Patients**

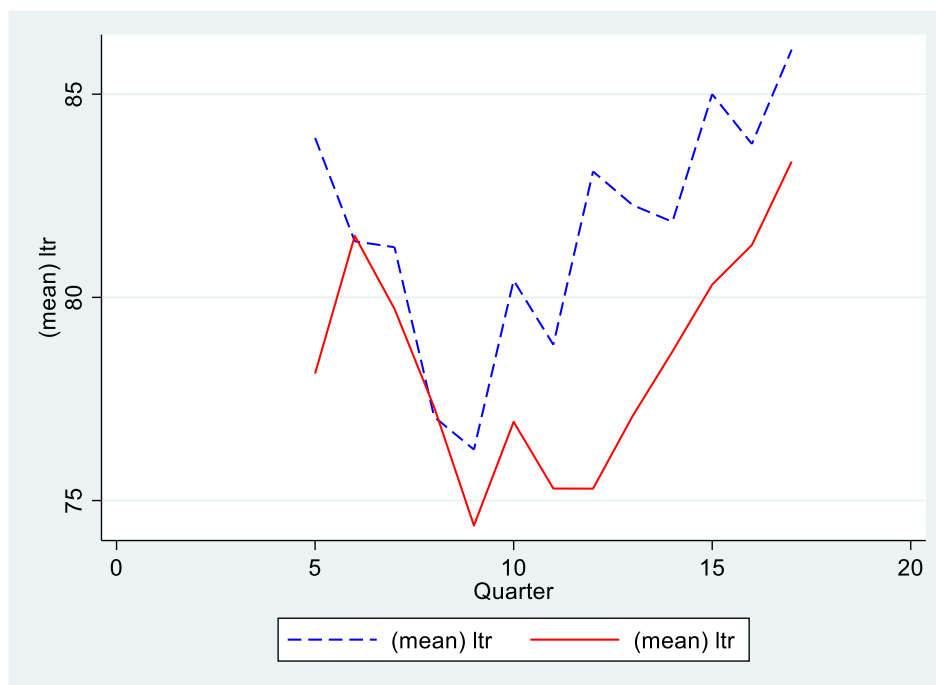
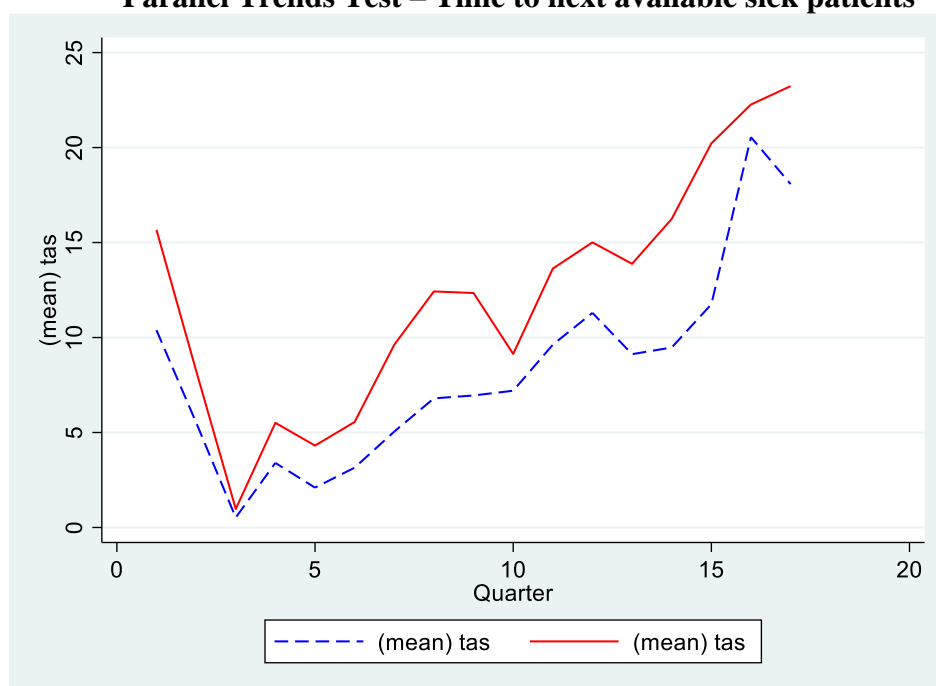


Parallel Trends Test – Average appts per day



Parallel Trends Test – wRVU



**Parallel Trends Test – Likelihood to Recommend****Parallel Trends Test – Time to next available sick patients**

## RECRUITMENT EMAIL

Dear [Name]:

I am conducting a research study on the implementation and impact of the protected administrative time initiative (PRAT) that was implemented in your practices last year for my doctoral dissertation. Participation will involve taking a brief survey which asks questions about your experience with PRAT. At the end of the survey, you will also be asked if you would be open to participating in a short 15–20-minute recorded interview for further discussion of your PRAT experiences.

Participation is voluntary and there are no known risks to the study. Your information will be stored securely and privately, and no identifying information will be shared with anyone (including Nuvance leadership). If you are interested, please complete the informed consent form attached (HERE).

If you have any questions, please let me know.

Best,

Lauren Junge-Maughan

## PRAT Executive Leadership Guide

### SURVEY QUESTIONS:

#### Organizational Background:

1. How would you describe the culture of your organization? Of your Practice?
2. Why did you decide to implement PRAT?
3. Did you believe there was a strong need for PRAT? Why or Why Not?

#### Implementation Phase:

**Instructions: Please think back to when you first heard about the protected administrative time initiative and answer the following questions:**

4. What process did you take to implement PRAT? What role did you play in implementation?
5. How well did you think PRAT would meet the needs of the clinicians?
6. Have you/your unit/your organization set goals related to the implementation of the intervention

#### Post- Implementation Questions:

**Instructions: Please answer these questions thinking to your current experience with PRAT.**

7. Do you think PRAT is successful in the organization?
8. Please feel free to give any additional comments regarding PRAT:

### INTERVIEW QUESTIONS

#### *Organizational Background:*

1. What kind of information or evidence are you aware of that shows whether or not the intervention will work in your setting?
2. Can you describe the pilot phase prior to the full-scale implementation? What did the pilot look like? What did it show?
3. Can you tell me what you know about any other organizations that have implemented the intervention or other similar programs?
4. How has this information influenced the decision to implement the intervention?
5. To what extent would implementing the intervention provide an advantage for your organization compared to other organizations in your area?
6. Who were the key influential individuals to get on board with this implementation?

#### *Pre-Implementation Questions:*

**Instructions: Please think back to when you first heard about the protected administrative time initiative and answer the following questions:**

1. What kinds of changes or alterations did you think you would need to make in order to implement PRAT within the organization?
2. How do you think your organization's culture (general beliefs, values, assumptions that people embrace) will affect the implementation of the intervention?
3. How well does the intervention fit with your values and norms and the values and norms within the organization?

*Post- Implementation Questions:*

**Instructions: Please answer these questions thinking to your current experience with PRAT.**

1. Do you think information about PRAT and changes involved in it were communicated effectively?
2. How did PRAT affect payment or revenue or other incentives for your organization?

## PRAT Provider GUIDE

### SURVEY QUESTIONS

**Organizational Background:**

1. Can you describe your working relationships with your colleagues?
2. Can you describe your working relationship with leaders?
3. How would you describe the culture of your organization? Of your Practice?

**Pre-Implementation Questions:**

**Instructions: Please think back to when you first heard about the protected administrative time initiative and answer the following questions:**

1. What was the general level of receptivity in your practice to implementing PRAT?
2. Did you believe there was a strong need for PRAT?

**Post- Implementation Questions:**

**Instructions: Please answer these questions thinking to your current experience with PRAT.**

1. Do you think PRAT is successful in your practice?
2. Has PRAT affected your wellbeing or job satisfaction? Please explain why or why not.
3. Please feel free to give any additional comments regarding PRAT:

### INTERVIEW QUESTIONS

Organizational Background:

1. How do you typically find out about new information, such as new initiatives, accomplishments, issues, new staff, staff departures?

Pre-Implementation Questions:

**Instructions: Please think back to when you first heard about the protected administrative time initiative and answer the following questions:**

2. How do people feel about current programs/practices/process that are available related to clinician wellbeing, reducing pajama time and turnover?
3. Do you think information about PRAT and changes involved in it were communicated effectively?

Post- Implementation Questions:

**Instructions: Please answer these questions thinking to your current experience with PRAT.**

4. Do you think PRAT was implemented thoroughly in your practice?
5. Has PRAT affected your wellbeing or job satisfaction? Please explain why or why not.

## PRAT Practice Manager GUIDE

### SURVEY QUESTIONS

Organizational Background:

1. How do you typically find out about new information, such as new initiatives, accomplishments, issues, new staff, staff departures?
2. How would you describe the culture of your organization? Of your Practice?

Pre-Implementation Questions:

**Instructions: Please think back to when you first heard about the protected administrative time initiative and answer the following questions:**

1. What process did you take to implement PRAT? What role did you play in implementation?
2. What was the general level of receptivity in your practice to implementing PRAT?
3. Did you believe there was a strong need for PRAT?

Post- Implementation Questions:

**Instructions: Please answer these questions thinking to your current experience with PRAT.**

1. Do you think PRAT is successful in your practice?
2. What feedback have you received about PRAT from individuals in your practice?

3. Has PRAT affected the wellbeing or job satisfaction of the providers or staff in your office?  
Please explain why or why not.
4. Please feel free to give any additional comments regarding PRAT:

### **INTERVIEW QUESTIONS:**

#### **Organizational Background:**

1. Can you describe your working relationships with your colleagues?
2. Can you describe your working relationship with leaders?

#### **Pre-Implementation Questions:**

**Instructions: Please think back to when you first heard about the protected administrative time initiative and answer the following questions:**

3. What kinds of changes or alterations did you think you would need to make in order to implement PRAT in your practice?
4. How confident are you that you will be able to successfully implement the intervention?
  - a. What gives you that level of confidence (or lack of confidence)?
5. What level of support did you feel from leadership? What kind of support or actions did you expect from leaders in your organization to help make implementing PRAT successful?

#### **Post- Implementation Questions:**

**Instructions: Please answer these questions thinking to your current experience with PRAT.**

1. Did you feel that you had sufficient resources to implement and administer PRAT?
2. Do you think information about PRAT and changes involved in it were communicated effectively?
3. Do you think PRAT was implemented thoroughly in your practice?

## INFORMED CONSENT FORM

### NAME OF STUDY

Examining The Impact and Implementation Of Protected Administration Time On Provider Wellbeing And Service Delivery Indicators Within A Multi-State Network Of Primary Care Medical Practices

### PRINCIPAL INVESTIGATOR

Nuvance PI: Amy Kohn  
Co-I: Lauren Junge-Maughan  
Doctoral Candidate – Georgia Southern University  
Nuvance Contact: Amy Kohn  
Email: lauren.jungemaughan@nuvancehealth.org  
Phone: 231-233-2463

### PURPOSE OF STUDY

You are being asked to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information.

The purpose of this study is to describe the implementation and effects of protected administrative time on primary care practice operations, clinician wellness and satisfaction.

### STUDY PROCEDURES

*Your participation in this study is as follows:*

1. You are being asked to complete a survey regarding your experience with PRAT compared to previous work experiences, and the impact PRAT has had on operations, satisfaction, and wellbeing.
2. Additionally, you may be asked or have the opportunity to be included in a semi-structured 30 min interview depending on your availability and willingness to participate.
3. This semi-structured interview would take place virtually at a time convenient for you and would be recorded.

### RISKS

Risk include data breach and confidentiality. All efforts are being made to reduce these risks by keeping documents behind a fire wall, restricting access, and deleting documents after analysis is complete. Information will not be shared with your employer, and we do not expect your involvement in this study to have any impact on your employment.

You may decline to answer any or all questions and you may terminate your involvement at any time if you choose.

### BENEFITS

There will be no direct benefit to you for your participation in this study. However, we hope that the information obtained from this study may inform leadership decision in the future around PRAT and other wellness initiatives. No incentives will be given for participation.



**CONFIDENTIALITY**

- For the purposes of this research study, your comments will not be anonymous. Every effort will be made by the researcher to preserve your confidentiality including the following:
  - Assigning code names/numbers for participants that will be used on all research notes and documents
  - Keeping notes, interview transcriptions, and any other identifying participant information in the personal possession of the researcher.
- Files will be destroyed after the study is completed
- Participant data will be kept confidential except in cases where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

**CONTACT INFORMATION**

If you have questions at any time about this study, or you experience adverse effects as the result of participating in this study, you may contact the researcher whose contact information is provided on the first page.

**VOLUNTARY PARTICIPATION**

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

**CONSENT**

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. By clicking the consent button below I agree to participate.

- I consent