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Introduction

The global pandemic of 2019 highlighted weaknesses in America's healthcare system and forced reactive measures to support the growing need for medical care amongst citizens. Federal and state officials were forced to figure out ways to maximize care to patients from medical providers while also attempting to decrease the rate of exposure and dissemination of disease (Dhaliwal et al., 2021). Two major ways they accomplished this was by lifting restrictions on nurse practitioners (NPs) so they could practice to the full extent of their education and by utilizing Telehealth to decrease exposure and reach rural, home-bound, or immunocompromised patients. Now that the pandemic has subsided, attention needs to be paid to the effectiveness of these "emergency" measures, other ways they can be beneficial, and if there is a permanent place for them in America's healthcare system.

Problem Overview

Before the COVID-19 pandemic hit America, there was knowledge of healthcare provider shortages that resulted in decreased access to primary care to patients across the country. According to DePriest et al. (2020), the growing population of citizens over the age of 65, coupled with physician retirement, decreased rates of physicians choosing primary care as a specialty, and the failure of primary care physicians choosing to practice in rural areas has resulted in a shortage of care. Additionally, due to the pandemic, medical providers were either furloughed or forced to transition to work from home. An issue brief during this period noted that an overall decrease in healthcare employees of all types amounted to 1.5 million between March and April of 2020. The report stated, "Many primary care physicians also reported being

financially stressed during the pandemic, leading in some cases to insufficient staffing or even closures of practices, with potential implications for access to primary care" (Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, 2022). The various reasons given for this massive decline in providers were grouped under the term "burnout" and noted to be short staffing, PTSD, exhaustion, trauma, long-covid sequela of providers that were infected, mental health turmoil of exposing their families, and the toll of watching numerous patients and loved ones die (Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, 2022). The health provider shortage was already multifaceted and became exacerbated by COVID-19.

The state of Tennessee has 19 counties that geographically qualify as primary care Health Provider Shortage Areas (HPSAs). Combined, Tennessee, Georgia, and Alabama have 100 geographically qualifying counties that are HPSAs (Shortage Areas, n.d.). For an NP working in a tri-state area, such as Chattanooga, TN, full practice authority (FPA) and uniform scope of practice (SOP), in combination with Telehealth, could drastically impact these numbers, enabling primary care NPs to work across state lines and reach more patients. The SOP and practice authority of an NP are both dictated at the state level. Each state has developed its own Nursing Practice Act, which outlines state-specific requirements and expectations that a person must meet in order to practice as a registered nurse (RN) or NP. Enacting FPA is a state-level decision that, to date, has been made in 27 states, including Washington, D.C.(NurseJournal Staff Writers, 2023). Tennessee is one of the most practice-restricted states in the country for NPs. Tennessee restrictions include the requirement of physician supervision for the duration of an NP's practice as well as the requirement of the supervising physician to visit an NP's place of practice once per month, sign off on 20% of their charts, and give authorization for prescription of scheduled II-IV

drugs. (Full Practice Authority States for Family Nurse Practitioners 2023, 2023)(POST Data, n.d.). Regarding combating the primary care provider (PCP) shortage, these restrictions hinder NPs from opening their own practices, practicing in rural parts of the country where physicians are not located, and the type of prescriptive care they can provide. In terms of SOP between states, NPs do not have access to a multi-state license as RNs do, meaning that NPs may not practice across state lines without paying for multiple licenses. Creating a compact licensure for NPs and standardizing the SOP across state lines would reduce bureaucratic barriers and create a pathway for NPs to work in multiple regions across the US, thereby increasing care to patients in HPSAs.

In addition to FPA and uniform SOP laws, Telehealth can be utilized to combat PCP shortages across the nation by allowing providers to meet the older, immunocompromised, frail, rural, lack of transportation, etc., population of patients in their own homes (Dhaliwal et al., 2021). Video and audio-assisted care is rapidly being studied for the full extent of its capabilities, including its ability to address the provider burnout that escalated during the pandemic. The Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services (2022) reported that 83% of respondents to a 2021 McKinsey Physician Survey now offer virtual services, whereas only 13% offered them at the start of the pandemic. The uptick in utilization is due to its proven ability to "provide a safe means for practitioners to provide care to their patients during the public health emergency, alleviating some sources of stress" (Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, 2022). NPs found they were able to provide care to patients from the comfort of their own homes while also safely and actively being present for their families. With the pandemic subsiding and businesses wanting their employees to return to the office to

work, many professionals are resisting out of respect for their newfound work/home life balance in a work-from-home setting. The problematic gap lies within the policy on practice for the NP. Policy changes implemented during the "emergency" of the pandemic that liberated the SOP for restricted authority state NPs removed barriers and added flexibility to the job that can increase the quality of life and healthcare outcomes for both practitioners and patients. The resolution of the pandemic has jeopardized the longevity of this newfound flexibility with the removal of emergency protocols. Telehealth-utilizing, FPA-authorized, multi-state licensed NPs can function with high job satisfaction and work-life balance while providing the greatest level of access to primary care services across the country, effectively tackling two prominent issues in the American healthcare system at once.

Definition of Terms

Nurse Practitioner, as defined by The American Nurses Association, is one type of advanced practice registered nurse (APRN) whose role is to provide primary, acute, and specialty services to individuals across their lifespan, with the training to assess, diagnose, and treat illnesses, who has obtained either a master's or doctorate level degree (Advanced Practice Registered Nurses (APRN) | American Nurses Association, 2017).

Burnout, as defined by Huang et al. (2023), is "a state of chronic physical, mental, or emotional exhaustion, which leads to long-term stress at work." Burnout appears in an individual as exhaustion, cynicism, and diminished professional efficiency. Burnout results in ill health and a decreased capacity to work for the provider, which in turn results in decreased quality of care for the patient.

Scope of Practice and Full Practice Authority are legal terms that describe the elements of care an NP is trained to do and the extent to which they can practice them. Both are

determined by the individual states, and they differ by state. The difference between the two is that the SOP encompasses the skills and education requirements an individual must complete, as well as licensure, to identify themselves as APRNs. Each state requires an NP to obtain that specific state's license, which costs money, and be knowledgeable of its state-defined SOP. Practice authority ranges on a scale from full, reduced, and restricted levels of autonomy the NP has when performing those elements of care. Reduced and restricted states require the companionship or supervision of a physician while an NP is practicing (NurseJournal Staff Writers, 2022).

The Health Resources and Services Administration (HRSA) defines ***Telehealth*** as the utilization of electronic information and telecommunications technologies to carry out at-a-distance clinical health care, patient and professional health-related education, public health, and health administration (Office for Civil Rights, 2021).

Purpose Statement and PIO Question

The purpose of this literature review is to assess the impact that Telehealth, coupled with a uniform SOP and FPA, can have on combating NP burnout and the health provider shortage simultaneously.

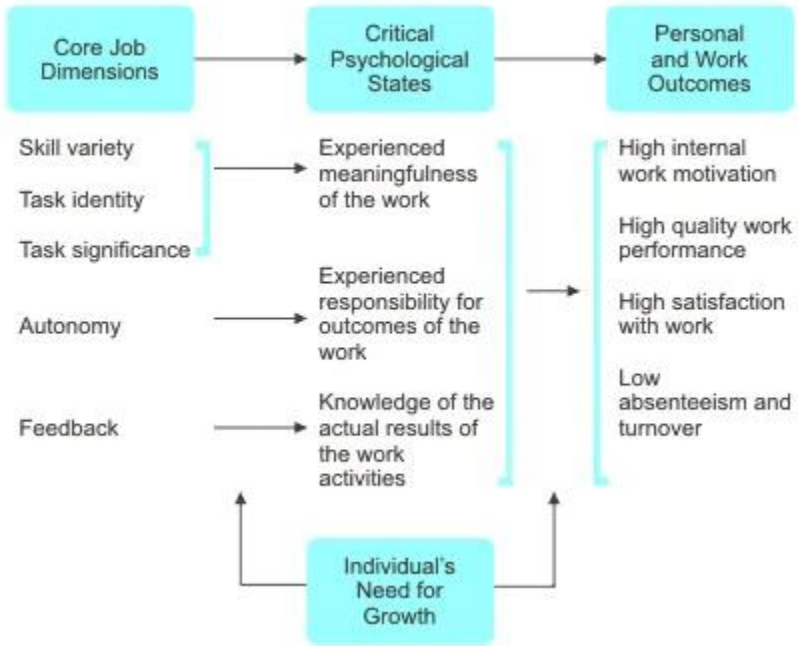
For Nurse Practitioners (P), does Telehealth, in association with FPA and a uniform SOP across states (I), decrease both burnout and the health provider shortage in the United States at the same time (O)?

Theoretical Framework

The job characteristic model by Hackman and Oldham in 1976, which was an enhancement of the job enrichment theory developed by Hackman and Lawler in 1971, can be used to explain and further understand the escape that professional autonomy and job satisfaction

provide to burned out NPs, and in turn, affect the elevation of patient care and provider staffing. The job characteristics model was formulated by utilizing the findings of various job enrichment theories that examined one's motivation to work (The Mind Tools Content Team, 2023). Hackman and Oldham's job characteristic model focuses on five core elements that a job must possess, which then lead to three states of positive psychological well-being, resulting in four favorable personal and job-related outcomes (Hackman and Oldham, 1976). The image below presents this model and how each element leads to the next.

Figure 1: Hackman and Oldham's Job Characteristics Model



Hackman and Oldham's Job Characteristics - Understanding the Basis of Job Enrichment

Reprinted from Organizational Behavior and Human Performance, Vol 16.2, J Richard Hackman and Greg R Oldham, "Motivation Through the Design of Work: Test of a Theory", pp250-279, Copyright (1976), with permission from Elsevier.

http://www.sciencedirect.com/science/journal/00305073

The purpose of this model is to identify the elements of a job that help motivate professionals to perform to the best of their ability, allow them to find fulfillment in their duties, present their best work for consumers, increase their job satisfaction, and ultimately decrease employee resignation and turnover. This model can be utilized by managers of companies or state and federal governments to examine areas for improvement in their employee's work-life balance and performance. It should also be noted that this model works best for the type of employee who desires to function at the top of their SOP and is willing to take on the increased responsibilities that autonomy presents (The Mind Tools Content Team, 2023).

Hackman and Oldham's job characteristic model was used by Hoff et al. (2017) in their research entitled *Satisfaction, Burnout, and Turnover Among Nurse Practitioners and Physician Assistants: A Review of the Empirical Literature.* This research explored the impact, both positive and negative, that the increased complexity of work and role expansion had on job satisfaction, work-related stressors, level of burnout, and staffing retention for NPs and Physician Assistants (PAs). Results were multifaceted and indicated that NPs felt a sense of intrinsic satisfaction and accomplishment when given more control and independence. It was also noted that the lower levels of satisfaction reported correlated mostly to extrinsic factors of the job, such as low collegial support and poor compensation, coupled with a fast pace and lack of adequate time to perform duties. These results indicate low job satisfaction correlated with role expansion and increased responsibility. Hoff et al. (2017) concluded that "the lower levels of satisfaction with the extrinsic aspects suggest that these negative aspects have more to do with the everyday environment of patient care in which NPs find themselves." With respect to Hoff et al. (2017) findings, it is theorized that the work environment is the lingering factor causing poor job satisfaction in the face of increased intrinsic satisfaction and fulfillment experienced with

increased autonomy. Hackman and Oldham's model, as well as Hoff et al. (2017) findings support the research question inquiring about the benefits of autonomy and FPA on NP burnout and staffing. It is theorized that the positive findings of Hoff et al. (2017) research will be duplicated in this review of literature, with the additional finding of elevated extrinsic job satisfaction factors due to the work-from-home environmental intervention and utilization of Telehealth in practice.

The four meta paradigms of nursing (nursing, person, health, and environment) are supported by the job characteristics model. In this scenario, the NP, whose mental well being is in question, is the patient of the administration and the NP also has patients whose medical care is dictated by the NP's mental well being. Person refers to the recipient of care and nursing refers to the actions of the provider (Wayne, 2023). The autonomous ability to perform significant tasks and receive feedback on those actions leads to important positive mental states for the NP that lead to high job performance (patient care) and satisfaction. Health is the focus on the overall well-being of a patient (Wayne, 2023). This model indicates that the worker's well-being is paramount to the patient's well-being. A job that encompasses the five core dimensions found to bring about critical psychological states, or mental well-being for the provider, leads to maximum job performance and optimal healthcare for patients. The fourth element, environment, refers to the setting in which a patient receives their care, with respect to physical surroundings as well as community support such as friends and family (Wayne, 2023). The NP must consider all positive and negative surroundings that affect the patient's health and well-being, just as a manager must consider the positives and negatives of their employee's workplace environment. The job characteristics model does not incorporate a physical environment into its core dimensions of a job that results in optimal outcomes; however, it can be deduced that any

workplace environment that provides space for the core dimensions to be performed and supports critical psychological states would yield favorable personal and workplace outcomes.

Literature Review

Research began by utilizing the databases CINAHL Complete, Medline Complete, Google Scholar, and the American Association of Nurse Practitioners' Journal databases. Articles were discovered under the search terms *Nurse Practitioner, Scope of Practice, Full Practice Authority, Telehealth, Work-from-home, Nurse Burnout, Primary Care Provider, and Rural Healthcare*. Parameters were set for results based on publication dates within the last five years, peer-reviewed, and full-text availability. Relevant landmark studies were also included that are potentially greater than five years old. Altogether, search results yielded over 40,000 articles from databases. Articles were reviewed for relevancy and narrowed down based on support for the independent practice of NPs, universal SOP across state lines, the benefits and downfalls of working from home, and the expansion of patient care that Telehealth offered. Citation chaining was used to gather additional relevant information based on the references of relevant, reliable studies. From 473 relevant articles, 20 were selected for this literature review. Government, medical association, educational institution, and NP website data were used for grey literature. Each of these articles is either a primary research study or a secondary review of data from primary studies. Literature reviews were excluded. Four of the 20 articles examine the health provider shortage, five discuss burnout, four discuss topics related to FPA or SOP, and five discuss the benefits or downfalls of Telehealth. One article discusses both HPSAs and FPA, and one article discusses burnout and the health provider shortage.

Presentation of Literature

Nurse Practitioner Impact on the Health Provider Shortage

The Association of American Medical Colleges published a report entitled *The Complexities of Physician Supply and Demand: Projections from 2019 to 2034,* in which they

predicted that by the year 2030, there could be a cumulative deficit of 48,000 PCPs across the country. This number did not take primary care NPs into account and has spurred numerous studies as to how primary care NPs can bridge that gap. In addition to this projection, which was made prior to COVID-19, these numbers were exacerbated in 2020 by the pandemic. A study by Anaraki et al. (2022) examined the lived experience of rural healthcare providers in Canada during the pandemic. Results found that the healthcare provider shortage in rural parts of the country was exacerbated by early physician retirement due to the increased workload and the added stress of the pandemic. They also saw physicians take leaves of absence due to their own autoimmune-related illnesses and the need for isolation. Travel bans and orders of isolation additionally removed locum physicians from the rural workforce.

Decreased provider coverage leads to geographical and population-based locations categorized as HPSAs. HPSAs leave people vulnerable to the pitfalls of a lack of primary preventive and maintenance care services. DePriest et al.(2020) noted that the most vulnerable populations reside in rural, low-income areas of the country as they struggle to attract physicians who want to reside there. This finding was supported by a separate survey study that found 44.3% of general medicine respondents to practice in urban settings, 44.4% in suburban, and only 11.3% in rural areas; however, 11.3% was greater than that reported by all other specialty providers combined where only 9.8% of them reported working in rural areas. (The COVID-19 Healthcare Coalition Telehealth Impact Study Work Group, 2020). NPs are a valuable solution to the physician shortage. Xue et al. (2019) found that the rate of growth of NPs from 2010-2016 surpassed that of physicians by an annual mean rate of 2.9 per 100,000 population in metropolitan areas, 3.2 per 100,000 population in urban areas, and 4.3 per 100,000 population in rural health service areas across the country. This research also showed that in 2016, the highest

concentration of NPs (41.3 per 100,000 population) resided in rural health service areas, and the highest concentration of physicians (68 per 100,000 population) resided in metropolitan areas of the country. Xue et al. (2019) findings are congruent with Davis et al. (2018), where it was found that NPs were the only provider type among physicians, PAs, and chiropractors who were not more likely to practice in communities of higher socioeconomic or health statuses.

While these studies address an NP's impact on geographic HPSA's, Young et al. (2020) conducted a study in Iowa that evaluated the impact non-physician practitioners (NPPs) had on primary care for their residents in both geographic and population-based HPSAs. Spatial accessibility was evaluated, taking into account PCPs within a 30-minute commute of residents and the PCP's capacity limit for patients. With NPPs added to the PCP workforce alongside physicians, the number of residents without accessible care was reduced by 65%, leaving the unattended population at 2.5% (Young et al., 2020). In contrast to the above study's findings, Young et al. (2020) noted that while HPSAs decreased with the addition of primary care NPPs into the equation, most NPPs in Iowa were actually found to be residing in urban areas of the state. The dense population and the low number of physicians are what deemed even the urban areas of the state to be population-based HPSAs without NPPs. Regardless of that fact, the NPPs that did reside in rural areas created the greatest impact, as 96% of the increase in spatial accessibility occurred in densely populated rural parts of the state (Young et al., 2020). While the utilization of NPPs helps combat the patient/provider ratio, the addition of Telehealth services could potentially bridge this gap even more, negating the spatial accessibility factor of commute time. This research shows that while there is a multitude of factors that play into the health provider shortage, NPs have a track record of filling in the geographical and population-based gaps in care and experience in managing rural populations with lower overall health statuses.

While increasing health provider coverage is an important step to combat health disparities among communities, it's also important to assess the impact that living in a rural HPSA has on patients. Bergeron et al. (2021) conducted a study to assess the county-level characteristics associated with malnutrition death rates in adults aged 65 or older in Texas from 2014-2018. Results found a statistically significant correlation between overall crude malnutrition death rates and non-metropolitan versus metro counties. What did not seem to make a statistical significance on the malnutrition crude death rate was the HPSA designation. Bergeron et al. (2021) explained these findings by placing more significance on access to food sources, community resources, and higher household incomes than access to a healthcare provider. The study, however, did not assess for proportions of the population that lack transportation or underutilized community resources that they may have been eligible for. One interesting concept to consider is the uptick in utilization of Telehealth during the pandemic. A benefit of Telehealth, found by DePuccio et al. (2022), as will be further discussed later in this review, is that visualizing one's home environment through video/audio technology may clue the provider into the patient's need for more community resources such as SNAP or Meals on Wheels to combat malnutrition or other health disparities. Proper assessment findings are imperative to creating appropriate care plans for patients and coordinating resources. As DePriest et al. (2020), Xue et al. (2019), and Young et al. (2020) have all shown an NP's impact on HPSAs, however, they still need to be supported by legislation in order to serve the communities best living in these areas across the country. This comes in the form of FPA and uniform SOP for NPs.

Full Practice Authority and Uniform Scope of Practice

The same study by DePriest et al. (2020) that introduced the concept of HPSAs also looked at the effect the implementation of FPA for NPs had on those areas across the country. The purpose of their study was to determine if states with FPA for NPs saw an uptick in the presence of NPs, thereby decreasing the number of HPSAs. For their study, 9,782 NPs were selected for review. Survey and state practice environment data were reviewed from 2010-2018, giving a longitudinal database for information. Correlations were made between the number of states with FPA and the increase in the number of NPs residing in those states. Results of the study showed that there was a 30.5% increase in the amount of NPs that lived in or near HPSAs as a result of the implementation of FPA policy (DePriest et al., 2020). A similar study by Markowitz & Adams (2020) examined the effects SOP regulations had on the APRN labor force. This study found that, in a given year, APRNs living in restrictive SOP counties that border states with less restrictive SOPs are up to 9% more likely to travel across state lines to work. However, in light of that number, this study found that of 562 respondents who moved in a given year, 35% moved to less restrictive SOP states, 29% moved to a state with the same level of SOP, and 36% moved to states with more restrictive SOPs. Markowitz & Adams (2020) concluded that while crossing state lines due to less restrictive SOPs does happen, it's not necessarily motivating in and of itself for an NP's place of work or residence. It would be interesting to see if these results changed in light of a compact state license to negate the cost of multiple individual state licenses. NPs who do travel across state lines to work in less restrictive bordering counties add to the workforce of that state and take away from the overall workforce of the more restrictive state. This is something for policymakers to keep in mind when examining access and distribution of healthcare.

When states are looking into passing FPA policy for NPs, one frequently voiced concern is about the difference in the quality of care provided between NPs and physicians. Buerhaus et al.(2018) conducted a comprehensive study on the quality of primary care provided to Medicare beneficiaries, directly comparing the two provider types as well as assessing the quality of care provided to patients who saw a mix of provider types. Results showed that NPs had lower rates of preventable hospitalizations, ED visits, and adverse outcomes, including MRIs for low-back pain, and all-cause 30-day readmission rates. MDs showed higher quality of care in the areas of chronic disease management, comprehensive diabetes care, and cancer screenings. Buerhaus et al. (2018) concluded from these findings that there were various quality benefits gained with each provider type. They also found that the types of patients that were seeing NPs for their primary care were disabled individuals residing in rural parts of the state who were dually eligible for Medicare and Medicaid. Practice environment of the NP, as well as clinic/community resources, were not researched by Buerhaus et al. (2018). By contrast, a study by Hughes et al. (2022) did study the effect that NPs working with FPA have on patient health outcomes in the area of diabetes care. This study found that there was a statistically significant reduction in the number of required foot debridement, 219.4 per 10,000 enrolled, among participants living in counties where NPs had FPA. Hughes et al. (2022) attribute the increase in health outcomes for diabetic patients that see FPA NPs to results of previous studies that found these patients to receive higher levels of education, medication, and physician referrals, which are key components for combating diabetes complications (Kurtzman et al. 2017; Coon & Zulkowski, 2002). NPs should be recognized for the quality of care they provide to individuals as the cost of preventable hospitalizations, ED visits, and 30-day readmission rates is astronomical to the healthcare budget (Buerhaus et al.2018). Hughes et al. (2022) proved that one barrier to quality

in an area in which NPs did not meet that of MDs in the Buerhaus et al. (2018) study could be the lack of FPA.

In addition to needing FPA within the SOP for their own licensure state, NPs were recently hit with another obstacle to providing care once the COVID-19 pandemic hit. As healthcare systems became overwhelmed with the volume of patients requiring care, state and federal officials had to immediately examine nursing regulations that prevented them from responding to the care crisis across state lines. A documentary analysis of legislation used to address barriers to the mobilization and delivery of healthcare by practitioners in the US and Canada from February to April 2020 found a total of 1,618 legislative and executive mandates occurred across 56 different states and territories (Benton et al., 2020). Per the National Council of The State Board of Nursing, of the 1,618 emergency measures, 93 of them involved issues related to access to care, licensure, and mobility of practitioners. Emergency changes implemented included lifting state licensure requirements, lifting regulations on Telehealth and Telehealth across state lines, and allowing all APRNs FPA. An interesting point that Benton et al. (2020) made in terms of NP state licensure was in reference to NY lifting the requirement for a NY state nursing license in order to work during the pandemic. It was noted that NPs do not have compact state licenses as RNS do, which allow them to work within all the nursing compact licensure agreement states without executive orders or individual state licenses to do so. A downfall to NPs that poured into NY state to provide care without a NY state license was that they could not be held accountable for violating the Nurse Practice Act in that state, and their original state of licensure could not seek disciplinary action either as they were practicing outside of their jurisdiction. This highlights the importance of a compact NP license and uniform SOP across state lines in order to protect patients and hold nurses accountable under the Nursing

Practice Act. Though NY undoubtedly appreciated all the help of NPs pouring in from across the country, moving forward, legislation needs to be addressed so as to widen the legal practice area of NPs while simultaneously protecting patients and governing NPs against malpractice (Benton et al., 2020).

Burnout

As Nurse Practitioners have been asked to step up in the face of the physician shortage and COVID-19 crisis, burnout has become a serious concern. Anything that impedes NPs from performing to the best of their ability and affects their work-life balance could potentially lead to burnout and turnover– effectively reigniting the health provider shortage problem and creating dangerous patient care environments. Physicians in a study that examined the effects of COVID-19 on rural healthcare in Canada stated that they experienced burnout and work fatigue that resulted in a decreased ability to empathize with their patients and communicate with their colleagues, resulting in worse patient care (Anaraki et al., 2022). It must become a priority to avoid those outcomes. Two studies in this literature review effectively evaluated factors that influence job satisfaction and empowerment among NPs. One of those studies also assessed the effects of burnout on empowerment and job satisfaction. Combined data sources showed that the drive for NPs to open their own practice and become self-employed stemmed from the desire for increased autonomy and for more personalized and improved patient care (Lyden et al., 2018). On a satisfaction scale of 1 to 6, Lyden et al. (2018) found that NPs who were self-employed reported their overall satisfaction as 4.99 due mostly to high scores in the categories of challenge/autonomy and time. The highest-scoring individual factors were the perceived level of autonomy and sense of accomplishment. Factors leading to their dissatisfaction were the requirement for physician oversight and a lack of administrative support. In terms of

empowerment, self-employed NPs reported feeling overall empowered, with a total score of 24.26 out of 30. The highest-scoring influencing elements were opportunity, formal power, and information (Lyden et al.,2018). Conversely, a later study by Huang et al. (2023) found the mean score of job satisfaction to be 3.92, which equates to slightly dissatisfied to slightly satisfied. Unique to this study, work-related burnout and personal burnout were found to affect job satisfaction negatively. Moderate levels of burnout were reported by 27.3% of NPs (Huang et al., 2023). Both studies found there was an overall positive correlation between empowerment and job satisfaction. They also both found the elements of formal power and information to be the leading factors in perceived empowerment. Burnout was a significant differentiating factor between the two reported levels of job satisfaction.

With respect to SOPs and practice environment, an interesting result of the Lyden et al. (2018) study was that there was not a statistically significant difference in job satisfaction based on environment with respect to self-employed NPs practicing in FPA states vs. NPs practicing in restricted authority states. However, eight out of the thirteen NPs who were personally interviewed and worked in restricted authority states voiced feeling dissatisfied with the requirement for physician oversight but had good working relationships with those physicians. These results showed that an NP's satisfaction and empowerment were not dictated solely by full vs. restricted practice environments, but Lyden et al.(2018) hypothesized that a positive collaborative working relationship with physician counterparts versus a supervisory relationship could further boost satisfaction. This hypothesis was supported by the work of Abraham et al. (2021), which found that 25.3% of NPs in New Jersey and Pennsylvania (restricted practice states) reported burnout, while higher NP-Physician Relationship scores were found to decrease the risk of burnout by 51%. In addition, it was found that higher NP-Administration scores

lowered the risk by 58%, and higher Independent Practice Support scores lowered the risk by 56%. Overall, this study found a connection between an NP's work environment and burnout, with colleague collaboration and administrative support being determining factors. Abraham et al. (2021) acknowledged the need for further research into the impact of these individual relationships and if practice-restrictive legislation played a role.

Finally, an interesting component of the Huang et al. (2023) study came from the correlation of reported NP demographics on job satisfaction. It was found that NPs who were married, had higher annual salaries, and who worked on day shift reported statistically significant higher job satisfaction. Huang et al. (2023) correlated these findings to a "good family relationship" and work-life balance. In contrast, higher patient assignments and longer work hours had a negative effect on job satisfaction and correlated to the negative effects of work-related and patient-related burnout. In light of these results, Huang et al. (2023) deduced that work-life balance was important, noting that increased stress at work could negate the protective effects of a good family relationship and work-life balance on job satisfaction. Both relationships must be cared for and maintained. These findings are congruent with a study conducted by Havaei et al.(2021), which evaluated the most important workplace factors in predicting nurse mental health. Results found that nurse's mental health positively correlated with healthier workplace environments. The most important factors specific to depression, anxiety, emotional exhaustion, and PTSD, reported by nurses, were work-life balance, psychological protection, and workload management. These results indicate that job environment matters when it comes to professional burnout and employers must be open to workflows that promote mental health, work-life balance, and longevity of the NP in practice.

Telehealth

A major change in workflow came when COVID-19 hit in 2020. Prior to 2020, Telehealth was already being explored for its potential in the healthcare world however, its use was minimal. Three studies depicted the growth in research and utilization of Telehealth from pre to post pandemic. Jonk et al. (2021) reported that in 2016, Telehealth was only utilized by 0.28% of patients in rural Maine due to provider resistance, provider shortages, a patient's lack of internet access, and poor Medicare reimbursement for visits. Another study, conducted in rural Florida in 2017, evaluated the impact of Telehealth on psych/mental health patients. Results of this study proved Telehealth was a reliable alternative to face-to-face care, with statistically significant increases in access to care, medication adherence at 30 and 60 days, and 89% of patients stating that they were comfortable with and would continue to use Telehealth (Talarico, 2021). A third study, conducted by The COVID-19 Healthcare Coalition Workgroup (2020) and managed by the Mayo Clinic, evaluated the use of Telehealth at the height of the COVID-19 pandemic. Among other findings discussed below, one significant statistic showed that 68% of practices boosted their motivation to implement Telehealth practices during this time frame. It is evident that Telehealth utilization saw a massive uptick throughout the pandemic and garnered a lot of interest.

While Telehealth enhanced access to care for many individuals, the initial barrier to care seen in the Maine study, as well as others, remains. Studies have revealed that Telehealth can further marginalize groups of people and highlight health disparities among rural, low-education, and low-income individuals who may not have access to the internet, smartphones, or computer equipment necessary to conduct visits. One study found the top three anticipated barriers to organizations maintaining Telehealth post-pandemic were low or no reimbursement, technology challenges for patients, and liability. Likewise, anticipated barriers for patients utilizing

Telehealth were reported to be a lack of patient access to technology, lack of digital literacy, and lack of access to internet (The COVID-19 Healthcare Coalition Telehealth Impact Study Work Group, 2020). The concern for patient difficulty with technology was echoed by another study examining provider's experience during COVID-19 in rural Canada (Anaraki et al., 2022). As NPs have historically been praised for providing care to rural communities, these patients do not need to lose access to care due to a shift in practice that would again leave them without access. As a potential solution to the anticipated patient barriers, DeGuzman et al. (2023) conducted a study to evaluate the role public libraries could play in connecting rural, low-income patients to providers. Authors noted that oftentimes, public libraries are a shorter commute than a community hospital for rural patients and have good internet access, private study rooms, social workers to collaborate with, and the librarians are tech-savvy, making them an intriguing solution. This mixed methods study was composed of a survey delivered to 50 providers (13 physicians and 36 NPs) as well as a voluntary interview post-survey that was completed by 12 NPs. Results revealed that 82% of providers were in favor of library-assisted Telehealth visits. The greatest concerns voiced were the anticipated lack of privacy and patient difficulties with technology. Providers also noted the types of visits they felt most comfortable providing, with the top three being health education, health promotion and prevention, and chronic disease management. From the interviews, NPs voiced their concerns about conducting acute care visits via Telehealth in which they may want to listen to breath sounds or evaluate a skin eruption. In these situations, NPs were adamant that if Telehealth were to be used, video technology must accompany audio so that the provider could visualize that they were not in distress. Overall, DeGuzman et al.(2023) found high interest in the collaboration between providers and public libraries and that their use could alleviate some of the health disparities highlighted by Telehealth

and help maintain care in rural, low-income communities as the shift towards Telehealth escalates.

In terms of benefits related to Telehealth, The Telehealth Impact Study utilized a 48-question Telehealth Impact Physician Survey completed by 1,594 clinicians (13% of whom were non-physician providers) to characterize the impact of Telehealth. Survey analysis showed that 75% of responding clinicians reported being able to provide quality care for patients across multiple different specialties, 60% of providers saw improved patient health, 55% of clinicians reported improved job satisfaction, and 80% of clinicians reported an increased rate of timeliness with patient appointments (The COVID-19 Healthcare Coalition Telehealth Impact Study Work Group, 2020). That same study also evaluated the environments in which providers conducted Telehealth visits and the populations they serviced. Results showed 82.9% of clinicians providing "General Medicine" care reported conducting Telehealth visits from a clinical setting, 67.3% from home, and 14.3% from a hospital. These results provided evidence that Telehealth provides flexibility to both providers and patients while maintaining positive outcomes. One limitation of this study was the lack of personal interviews to further elaborate on the aspects of Telehealth that made clinicians report an increase in job satisfaction.

A smaller study conducted by DePuccio et al. (2022) did utilize a survey with semi-structured open-ended questions to gather 20 PCPs' insights on the perceived advantages of providing care via Telehealth from their own homes. Four themes were realized in terms of patient care, including patients feeling assured they could receive safe and timely care, remote Telehealth visits were convenient for patients, patients were comfortable in their own homes, and video visits enhanced patient/family-centered care. In terms of provider benefits, three themes emerged, including Telehealth facilitated working from home, providers were profitably

reimbursed for their services, and Telehealth promoted provider work-life balance. Commentary on positive patient experiences perceived by providers included the fact that patients didn't have to travel to receive care, making it easier for patients who suffered from anxiety, depression, or the fear of being exposed to COVID-19 to be treated. Patients did not have to take off work, and providers, when utilizing video technology, had the opportunity to see the patients in their own environment. This put the patient in a more realistic setting than an office and allowed the provider to physically view the beneficial or detrimental health environment of the patient, which assisted them in creating care plans. Commentaries on the benefits to the provider were stated to be improved reimbursement through insurance companies for Telehealth services. Providers commented that they were no longer having to provide these services for free due to emergency adaptation by insurance companies. With regards to working from home, DePuccio et al. (2022) found that providers stated they enjoy being able to have lunch in their own homes, see their children more often, cover child care, catch a workout between Telehealth visits, and eliminate the daily commute time. As this study was only conducted over a one-month time frame, with 20 PCPs from the same practice, results can't necessarily be generalized to the greater public. In fact, a larger study of 988 respondents across multiple lines of work, conducted by Xiao et al. (2020) found overall physical well-being and mental well-being to both slightly decreased compared to prior to work-from-home work-flows. Significant negative elements of physical and mental health were overall food intake, junk food intake, and distractions while working (Xiao et al., 2020). It is evident that there is confounding evidence for the benefits of work-from-home Telehealth. Providers must take into consideration their own personal needs in a work environment when it comes to mental and physical health. Telehealth does not have to be carried out in one's own home; it is merely an option that some have come to enjoy.

Summary of Literature

This literature review shows how multiple elements of practice, such as FPA, uniform SOPs, and Telehealth, can all contribute individually to decreasing NP burnout and the health provider shortage, however, it also highlights how each of these individual elements is strengthened by the other. There are many factors that play into the health provider shortage and NP Burnout therefore they must be addressed from every angle. There is currently a high patient/provider ratio in both urban and rural parts of the country, a lack of physicians due to retirement and failure to specialize in primary care, a growing population of patients over age 65, a poor dispersion of healthcare across rural parts of the country, and restrictions placed on NPs who are attempting to fill the gaps. It is evident that NPs have a track record of residing in and caring for patients in rural, low-health-status parts of the country and that they significantly decrease the patient/provider ratio when they are added to the workforce. The health disparities that patients living in these parts of the country face aren't limited to decreased health provider coverage, but also to decreased access to food and underutilization of federal and community resources-something that could be curbed by Telehealth.

Studies have found that NPs and physicians both provide quality care and bring different benefits for patients to the table. It was also found that NPs practicing with FPA are able to elevate their quality of care due to increased prescriptive and practice capabilities. This results in better patient outcomes. While there is evidence that FPA and uniform SOP aren't the only deciding factors for where an NP lives or practices, there is also evidence that travel across state lines does occur when a bordering county has a less restrictive SOP. This is significant because FPA NPs have a sizeable impact on HPSAs. Studies have shown that NPs seek autonomy and greater control over the way they care for their patients and FPA grants them that opportunity.

State and federal governing bodies need to pay attention to the migration of NPs across state lines seeking less restrictive SOPs, and the distribution of NPs with FPA among HPSAs when evaluating the presence of health care providers in certain parts of the country. It would also benefit the patients for NPs to have access to a compact state license so as to govern and allow their practice in multiple different states. This would effectively increase the workforce, provide greater access to care, and decrease HPSAs.

As it is evident that NPs play a large role in filling the PCP gap, it is important to support the mental and physical health of NPs. Studies found that an NP's work environment plays a large role in their perceived job satisfaction and overall burnout. NPs seek environmental factors such as autonomy, increased time with their patients, good physician relationships, and administrative support in order to feel empowered and a sense of accomplishment in their work. FPA isn't the only deciding factor in an NP's perceived feelings of job satisfaction or burnout- it must be accompanied by strong collegial and administrative support. The vote of confidence in their professional abilities and subsequent support for success decreases burnout. It is also important for NPs to be able to maintain a good work-life balance and be present for their families as much as they are for their patients. A mentally and physically supported provider is able to communicate and empathize with others and provide better patient care.

One way that providers found to increase their work-life balance, while maintaining high-quality care and decreasing HPSAs, was by utilizing Telehealth. Telehealth affords the option for both parties to remain within their household, promotes a comfort level for patients, a convenience level for both, and an opportunity for providers to be more present within their families. Not all providers found working from home positive for their mental or physical well-being, and that's why it's important to note that Telehealth can be carried out from multiple

different settings. It provides options for the provider to find an environment that promotes their well-being and maintains access to patients in distant locations. There continue to be concerns over the learning curve that Telehealth highlights in terms of the use of technology as well as the access to internet that it requires and maintaining privacy for patients. Studies are looking into ways to combat those issues, such as the utilization of public libraries to conduct visits.

Discussion and Synthesis

This review of literature explored multiple different legislative policies and elements of practice that affect the NP profession. The research question, "Does Telehealth, in association with FPA and a uniform SOP across states decrease NP burnout while also decreasing the PCP shortage in the US at the same time?" was addressed by several main takeaways throughout this review. FPA and uniform SOP undeniably increase access to patient care. FPA NPs are safe and provide the highest quality of care to patients when there is a positive collaborative relationship with physicians and administrators. As stated above, "NPs seek environmental factors such as autonomy, increased time with their patients, good physician relationships, and administrative support in order to feel empowered and a sense of accomplishment in their work," and this leads to decreased turnover. Work-life balance is important to NPs and plays a role in their experience with burnout. Telehealth improves access to patient care and offers options for workplace environments that are conducive to an NP's mental health, but there is still work to be done in the areas of access and usability of technology and reimbursement to providers. It is evident from this ROL that policy changes need to be made to permanently enact some of the emergency protocols as well as further develop the safety and feasibility of those protocols with respect to licensure and reimbursement.

The job characteristic model in addition to the hypothesis "the work environment is the lingering factor causing poor job satisfaction…" was supported by this ROL just as Hoff et al. (2017) also concluded in their own research. Hoff et al. (2017) stated, "The lower levels of satisfaction with the extrinsic aspects suggest that these negative aspects have more to do with the everyday environment of patient care in which NPs find themselves." The five core dimensions necessary for job satisfaction are achievable with implementation of FPA. The

practice environment (level of restricted practice, NP-Physician/Admin relationship), as well as the physical environment of a workplace (home, hospital, or clinic), does have an impact on NP job satisfaction, burnout, and turnover. Any practice environment that promotes critical psychological states should yield job satisfaction and optimal provider and patient well-being.

The overall strength of this ROL was that it addressed the suggested interventions on practice from multiple different angles. Influencers on job satisfaction, the quality of NP-provided care, contributing factors to health disparity in rural settings beyond health provider coverage, and reimbursement were all evaluated within this ROL as they all play a role and create potential barriers to the implementation of each intervention. The interventions suggested in the purpose statement are complex and require much research and consideration from providers, lawmakers, and consumers. The limitations of this ROL, in regards to the purpose statement, are that none of the research was able to evaluate how each intervention worked together within the same study. Inferences had to be made about how one intervention could supplement the weaknesses of the other in practice. Because FPA and Telehealth have been implemented to an extent, actual numbers can be placed on the safety and efficacy of combating the health provider shortage. The other intervention, uniform SOP, has not been implemented for NPs; therefore, only inferences can be made about the perceived combined benefit on practice it would add.

When looking at the US healthcare system through the eyes of this literature review, it is evident that the barrier to healthcare in HPSAs, a compact state license, and Telehealth with the option to work from home is not all about patient safety. It has been proven that each of these elements can support safe patient care. The barrier to providing greater access to healthcare and flexibility in work environment is money. Whether it be the cost of licensure to each state board,

the overhead price that physicians are getting to supervise NPs, or the poor reimbursement offered for Telehealth services, lawmakers, as well as insurance companies that are truly concerned with a patient's access to medical care should pay more attention to the research above than to opportunities to make money and fuel the barriers to care. The more doors that are opened for NPs to provide the care they are trained to do, the greater patient and NP health and longevity.

Implications for Advanced Nursing Practice

This paper is about eliminating barriers to care that affect both patient and NP well-being. The barriers all have to do with policy change at the state, federal and insurance company levels. The main way that NPs can effect change in their profession is by getting involved and staying educated on the current legislation that affects them. The AANP provides up-to-date information on current practice-related legislation in each state and information about when and where NPs can voice their opinions to lawmakers. Dissemination of research like the articles utilized above, as well as overarching reviews of literature like this one, need to be placed in the hands of lawmakers as well as the public so that informed decisions can be made. The Job Characteristics model is a great tool that can be utilized not only by employers, but also to lawmakers searching for a solution to provider shortages. The core elements of a job that impact satisfaction are all possible with the implementation of FPA and uniform SOP, therefore, they should be pushed for by NPs and considered by lawmakers. While this model does not directly address the physical practice environment, NPs should still consider the elements of their job that promote work-life balance for themselves and advocate for feasible environmental interventions, such as Telehealth from home, if that interests them. Research, education, dissemination, and advocacy are the ways in which NPs can effect change within their profession.

Recommendations for Future Research

This ROL explored the benefits and downfalls of three prominent practice changes that are on the horizon for NPs at the moment. It appeared that FPA for NPs has been the most researched and has made the greatest strides across our country, trailed by Telehealth and then uniform SOP. There were several research articles that explored two of the interventions on practice together, but no research has been done that explores how all three could work together. While there has been research conducted on the effects of working from home in general, minimal research was found that specifically discussed Telehealth from home. While the workplace environment has been researched, there needs to be more research into how NPs feel their personal and professional lives could be affected if given the option between working in an office setting versus their own home. Multiple studies explored the perceived barriers to Telehealth, but only one suggested a solution to those barriers. More research should be conducted to help find solutions, such as the use of public libraries or the potential for insured patients to receive smart devices specifically for Telehealth visits. There also needs to be more research into how Telehealth can be profitable enough through reimbursement for practices to maintain their business. Many of the emergency implemented reimbursement changes are coming to an end soon. Stopping the progression of Telehealth when it has made such a promising impact could reverse access to care. Research has identified the barriers to care; now more research needs to be done into solutions.

FPA is steadily making its way across the country, led by enthusiastic NPs with the support of foundations like the AANP. To date, there are still 11 states with completely restricted practice authority. In addition, RNs are able to practice in multiple states under a compact licensure agreement, but NPs cannot. Both of these issues create boundaries to care for patients

and limit the reach and impact an NP can make on HPSAs. More research needs to be done on the state level as to why these states don't feel the importance of progressing with FPA and a compact license. Research has shown the safety and efficacy of FPA for NPs, now, more research needs to be done into the specific state-level pushback so as to eliminate this barrier to care and job satisfaction.

Conclusion

In conclusion, multiple changes in policy and practice are needed to effectively address the health provider shortage that is sweeping across the country. The suggested interventions of FPA, a uniform SOP, and utilization of Telehealth all offer safe and effective routes to address the multifaceted problems associated with provider shortages as well as burnout. It is essential to keep and maximize provider coverage to patients across the country, and barriers need to be eliminated. More research needs to be conducted into how to combat the barriers associated with Telehealth so it can continue to benefit our healthcare system. Placing more options and flexibility in the hands of NPs to offer care is the fastest and most effective way to reach the most people and make an impact on both provider and patient health.

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Appendix

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
Abraham CM, Zheng K, Norful AA, Ghaffari A, Liu J, Poghosyan L. Primary care Practice Environment and Burnout among Nurse Practitioners. J Nurse Pract. 2021 Feb;17(2):157-162. doi: 10.1016/j.nurpra.2020.11.009. Epub 2021 Jan 11. PMID: 33658908; PMCID: PMC7920210.	To evaluate practice environment conditions and their effect on burnout amongst NPs	N= 369 NPs completed the survey	Comparison of the workplace environ-mental factors of NP-Physician Relations, Professional Visibility, NP-Admin Relations, and Independent Practice and Support in regards to their impact on Nurse Practioner burnout levels.	25.5% of NPs reported being burntout High scores in each of the compared workplace environmental factors decreased the likelihood of burnout as follows: NP-physician relations: 51% Professional Visibility: 51% NP- administration relations: 58% Independent practice and support: 56%	Secondary Analysis of Cross Sectional Survey Data Level III Grade A
Anaraki, N. R., Mukhopadhyay, M., Karaivanov, Y., Wilson, M., & Asghari, S. (2022). Living and working in rural healthcare during the COVID-19 pandemic: a qualitative study of rural family	To explore the lived experience of Rural Family Physicians (RFPs) in Canada during the Pandemic	N = 13 RFPs living and working across Canada during the pandemic. 6 males and 7 females participated who were between 35-65 years old and had between 5- 35 years of	No comparisons were made	Five overarching categories were developed from interview data: Virtual care as a challenge or forward progress, Cancelling in-person visits, and interrupting the routine	Community-Based Participatory Research Qualitative Study Level III Grade B

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
physicians' lived experiences. BMC Primary Care, 23(1), 1–9. https://doi-org.ezproxy.southern.edu/10.1186/s12875-022-01942-1		practice experience.		Shortage of healthcare providers and supporting staff Ongoing coping with the pandemic guidelines Covid-19 Combat fatigue	
Benton, D. C., Alexander, M., & Fotsch, R. (2020). Lessons Learned and Insights Gained: A Regulatory Analysis of the Impacts, Challenges, and Responses to COVID-19. Online Journal of Issues in Nursing, 25(3), N.PAG. https://doi-org.ezproxy.southern.edu/10.3912/OJIN.Vol25No03PPT51	To examine the legislative documents, proclamations, executive orders, and bills that were discussed and placed into action during the COVID-19 pandemic, from February to April of 2020 in the United States at all levels of government. Legislation that affected nurse regulating bodies and the mobility of healthcare during the pandemic was identified and studied. Observations and Recommendations were then made	N=1618 legislative, executive, mandates, and policies	No Comparisons were made	Legislative action ranged from 7-73 per state, with the most government action occurring in the states with the highest number of cases and death rates. Maintaining healthcare through remote telehealth was challenging New York suspended the requirement for a NY state RN/LPN license to practice in that state, while other states required temporary authorization or a Compact State License. this created room for safety concerns as nurses without a license	documentary analysis with mixed methods approach Level IV Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
	for Nursing regulatory bodies moving forward with regard to nursing practice and mobility.			aren't governed by the Nurse Practice Act Compact State License afford nursing mobility and protection to the public against malpractice through the Nurse Practice Act 14 states eliminated the restriction on providers to provide telehealth out of state evidence is increasing on the impact that removing barriers to APRN practice can have on the economy Hospitals could no longer accomodate nursing clinical rotations Nursing schools and the BON had to find alternatives to traditional clinicals so as to graduate student nurses into the workforce	

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
				Nurses on a temporary license prior to passing the NCLEX need to be removed from the workforce if they do not pass the NCLEX The NCLEX was adapted during the pandemic BON disciplinary hearings and meets were affected by lack of face to face encounters Nurses were entitled to proper PPE or to refuse an assignment if not "able" to properly care for them Nurses need to be able to work across state lines via telehealth and physically	
Bergeron, C. D., John, J. M., Sribhashyam, M., Odonkor, G., Oloruntoba, O., Merianos, A. L., Horel, S., &	To examine the county level characteristics that contribute to or potentially protect against crude malnutrition death rates in Texas in	N= 254 Counties in the State of Texas All participants were over 65	Compared the impact of various county level characteristics such as : HPSA designation,	25,195 overall Texans aged >/= 65 died from malnutrition Higher crude malnutrition death rates were	Secondary Data Analysis Level II Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
Smith, M. L. (2021). County-Level Characteristics Driving Malnutrition Death Rates among Older Adults in Texas. Journal of Nutrition, Health & Aging, 25(7), 862–868. https://doi-org.ezproxy.southern.edu/10.1007/s12603-021-1626-2	2018 and opportunities to improve malnutrition in older adults	years old	rurality, poverty status, food access, age, race, ethnicity, and education on malnutrition crude death rates	associated with counties that were non-metropolitan (P=0.018), had lower education (P=0.047), had higher rates of household poverty (P=0.010), and who had lower access to food (P<0.001). There was not a significant correlation between crude death rates and HPSA. Tertile 1: crude death rate of 4.93 (±12.94) per 100,000, -89.30% of those counties being in HPSAs Tertile 3: crude death rate of 128.14 (±55.21) per 100,000 -75.30% of those counties being in HPSAs. Access to food sources, community resources, and higher household incomes than access to a healthcare provider.	
Buerhaus, Peter PhD, RN, FAAN, FAANP(h)*;	Examine the difference in quality of care proveded to	N= 51,595 NPs randomly selected	Comparing the quality of care provided to	PCNPs excelled in lower hospital admissions, readmissions,	Retros-pective Cohort Study

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
Perloff, Jennifer PhD†; Clarke, Sean PhD, RN, FAAN‡; O'Reilly-Jacob, Monica MA, MS, FNP-BC§; Zolotusky, Galina MS§; DesRoches, Catherine M. PhD‖ . Quality of Primary Care Provided to Medicare Beneficiaries by Nurse Practitioners and Physicians. Medical Care 56(6):p 484-490, June 2018. | DOI: 10.1097/MLR.0000000000000908	patients who recieved care from primary care Nurse Practitioners, Phycians, or both between 2012-2013	N= 160,000 physicians randomly selected N= 322,928 beneficiaries with claims billed to either Medicare or Medicaid between 2012-2013 who either saw a PCNP or PC Physician only, or both	Medicare or Medicaid beneficiaries provided by either primary care Nurse Practitioners, Physicians or both across 4 domains of primary care utilizing 16 different claims based quality measures	inappropriate emergency department use, and low-value imaging for low back pain. PCMDs excelled in chronic disease management and cancer screenings. Beneficiaries that recieved care from both clinicians had quality care scores that landed in the middle of each provider, except for measures for cancer screenings Each provider type has their own specific strengths	Level II Grade B
Davis MA, Anthopolos R, Tootoo J, Titler M, Bynum JPW, Shipman SA. Supply of Healthcare Providers in Relation to County Socioeconomic and Health Status. J Gen	To assess the supply and distribution of NPs, PAs, Chiropractors, and Physicians across different socioeconomic and health status geographic populations in 2014	N=272,105 primary care physicians N=63,615 nurse practitioners N=47,006 physician assistants N= 43,278 chiropractors	Comparing the distribution of different types of health care providers based on geographical socioeconomic and health statuses	Across 4 quartiles NPs were the only provider type who did not increase in presence based on higher socioeconomic or Health status patient population Socioeconomic status: Physicians	Level II Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
Intern Med. 2018 Apr;33(4):412-414. doi: 10.1007/s11606-017-4287-4. PMID: 29362958; PMCID: PMC5880774.				5.1 (3.0, 7.7) 6.4 (3.9, 9.9) 6.7 (4.0, 10.6) 7.6 (4.4, 10.8) Nurse Practitioners 1.8 (0.6, 3.4) 2.1 (0.8, 3.5) 2.1 (0.7, 3.7) 1.9 (0.8, 3.1) Physicians Ass. 0.0 (0.0, 1.5) 1.0 (0.0, 2.2) 1.3 (0.0, 2.7) 1.4 (0.5, 2.5) Chiropractors 0.7 (0.0, 1.5) 1.5 (0.7, 2.4) 2.0 (1.0, 3.6) 2.0 (1.2, 3.3) Health Status: Physicians 5.2 (3.2, 8.1) 5.8 (3.5, 9.4) 7.0 (4.3, 10.3) 7.5 (4.1, 11.1) NPs 2.1 (1.0, 3.7) 1.9 (0.8, 3.4) 2.0 (0.7, 3.3) 1.9 (0.6, 3.2) Physician Ass. 0.4 (0.0, 1.4) 0.8 (0.0, 1.9) 1.4 (0.2, 2.9) 1.5 (0.0, 2.9) Chiropractors 0.8 (0.0, 1.4) 1.4 (0.5, 2.2) 2.0 (1.2, 3.3) 2.4 (1.3, 4.1)	
DeGuzman, Pamela B. PhD, RN, CNL (Associate	To explore the perceptions of licensed health providers on the	N= 50 survery respondants N= 36 NPs	Comparing the perceptions of NPs	80% of all surveyed providers were in favor of Telehealth in public libraries	Two-phase explanatory sequential mixed

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
Professor and Nurse Scientist)1,2; Garth, Jennifer L. BA (Research Assistant)3; Sanjay, Kamya BA (Research Assistant)3; Compton, Rebekah M. DNP, FNP (Director of Ambulatory Quality Improvement)4. Extending health care access via telemedicine in public libraries. Journal of the American Association of Nurse Practitioners 35(3):p 208-215, March 2023. | DOI: 10.1097/JXX.0000000000000819	potential use of public libraries to help increase access and usability of Telehealth in populations that lack the ability to connect from their own homes	N=13 Physicians N= 12 NP interviews	versus Physcians on the utilization of public libraries for Telehealth	NPs were significantly in favor of telehealth in public libraries, but insisted that Video technology accompany Audio for quality care to be provided There were concerns about privacy, but some considered the library potentially more private that one's own home Chronic healthcare conditions were the most favored visit type to be conducted via Telehealth in a library	methods design with quantitative and qualitative components Level III Grade A
DePriest, K., D'Aoust, R., Samuel, L., Commodore-Mensah, Y., Hanson, G., &	Does the implementation of Full Practice Authority for Nurse Practitioners Policy have an	N=9,782 Nurse Practitioners in the United States from 2010-2018.	Percentage of Nurse Practitioners in HPSA's from 2010 to 2018 before	There was a positive longitudinal correlation between the implementation of FPA and the probability of NPs	Difference in Differences Regression Analysis

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
Slade, E. P. (2020). Nurse practitioners' workforce outcomes under implementation of full practice authority. Nursing Outlook, 68(4), 459–467. https://doi-org.ezproxy.southern.edu/10.1016/j.outlook.2020.05.008	effect on the Primary Care Provider workforce? The effects of Full Practice Authority on the workforce were measured in terms of providers presence in HPSAs, rates of self-employement, and increased income.	N=22 states with Full practice Authority (10 of which obtained FPA after 2010) N=20 States with restricted practice authority N=1019 NPs residing in one of the 10 FPA states that acquired policy after 2010	and after the implementation of FPA policy. Percentage of Nurses that claim self-employment status from 2010-2018, before and after implementation of FPA policy Percentage of NPs that indicate an increase in personal income form 2010-2018, before and after implementation of FPA policy.	residing in HPSAs. There was a predicted probability of Self employment increasing in Restricted Practice States from 0.8% to 3.9% after the implementation of FPA. Compared to physicians, even with FPA, NPs are less likely to be self employed.	Level II Grade B
DePuccio, M. J., Gaughan, A. A., Shiu-Yee, K., & McAlearney, A. S. (2022). Doctoring from home: Physicians' perspectives on	To examine how Telehealth benefited primary care physicians and their patients during the transition to work from home orders during COVID-19 from July to	N=20 PCPs that completed semi-structured interviews	No compar-isions were made	4 conclusions were drawn about the patient exerience: Patients could recieve safe and timely care, Remote visits were convenient for patients, patients were comfortable	Qualitative Study Level III Grade B

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
the advantages of remote care delivery during the COVID-19 pandemic. PloS One, 17(6), e0269264. https://doi-org.ezproxy.southern.edu/10.1371/journal.pone.0269264	August 2020			with recieving care at home, video visits assisted family-centered care during the pandemic 3 conclusions were drawn about the PCP experience: Telehealth accomodated working from home, physicians were equitably reimbursed for Telehealth visits, Telehealth promoted work-life balance	
Havaei, F., Ji, X. R., MacPhee, M., & Straight, H. (2021). Identifying the most important workplace factors in predicting nurse mental health using machine learning techniques. BMC Nursing, 20(1), 1–10. https://doi-org.ezproxy.southern.edu/10.1186/s12912-021-00742-9	What are the most important environmental workplace factors that contribure to a nurse's mental health? Measurements were based on the National Standard of Psychological Health and Safety in the Workplace theoretical tool.	N= 4029 currently employed, direct care Nurses in British Colombia	A comparison of the impact that various workplace environment influencers have on nurse's mental health outcomes	A healthier workplace environment resulted in better mental health for nurses overall The highest scoring predictors of depression, anxiety, PTSD and emotional exhaustion were low scores in balance, psychological protection and workload management The highest scoring	Exploratory Cross Sectional Survey Level III Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
				predictors of depersonalization were poor workload management, poor psychological protection, poor engagement, and poor balance The highest scoring predictor of personal accomplishment was engagement The highest scoring predictors of life satisfaction were good balance, good psychological protection, and engagement	
Huang, S.-S., Chen, C.-Y., Kau, K., Tsai, J.-M., & Tsay, S.-L. (2023). Key determinates of job satisfaction for acute care nurse practitioners in Taiwan. BMC Nursing, 22(1), 1–17. https://doi-org.ezproxy.southern.edu/10.1186/s12912-022-	The purpose of this study is to explore the impact that elements of empowerment and burnout have on job satisfaction for Nurse Practitioners working in acute care settings in Tiawan.	N=1,211 completed surveys by NPs in acute care settings in Tiawan	A comparison was made of how the different elements of empower-ment and burnout impacted job satisfaction Participant demographics were also compared to assess for trends that	Empowerment and burnout both have a significant impact on job satisfaction The highest scoring components of job satisfaction were formal power, work-related burnout, access to information, and needed resources NP Demographics that correlated with higher job satisfaction were	Descriptive Survey Study Level III Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
01156-x			impacted job satisfaction	those that were married, had higher annual incomes, worked only day shift, and who had lower patients-related burnout	
Hughes, D. R., Filar, C., & Mitchell, D. T. (2022). Nurse practitioner scope of practice and the prevention of foot complications in rural diabetes patients. Journal of Rural Health, 38(4), 994–998. https://doi-org.ezproxy.southern.edu/10.1111/jrh.12599	Do practice authority laws for Nurse Practitioners have an impact on diabetic foot ulcer complications- as measured by incidence of foot debridement- for patients living in rural communities?	Samples were obtained from Optum's de-identified Clinformatics ® Datamart, which provides data about claims from private insurance as well as Medicare Advantage N= 19,355,593 enrollees across 2,979 counties with 69,506 debridements for type-2 diabetes mellitus in 2016, N=20,360,084 enrollees across 2,969 counties with 79,356	A comparison of the impact that implemen-tation of Full Practice Authority for NPs has on diabetic foot ulcer compli-cations	Rural counties where NPs had FPA resulted in 219.4 fewer foot debridements per 10,000 enrollees ($P < .001$) On average, fewer debridements occurred in states where NPs had FPA (2016: 1,029.6, $P = .074$; 2017: 1,181.3, $P = .053$)than those that did not have FPA (2016: 2,029.4; 2017: 2,375.7)	Level II Grade B

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
		debridements in 2017			
Jonk, Y. C., Burgess, A., Williamson, M. E., Thayer, D., MacKenzie, J., McGuire, C., Fox, K., & Coburn, A. F. (2021). Telehealth Use in a Rural State: A Mixed-Methods Study Using Maine's All-Payer Claims Database. Journal of Rural Health, 37(4), 769–779. https://doi-org.ezproxy.southern.edu/10.1111/jrh.12527	The purpose of this study was to assess the trends in Telehealth usage between various payers, utilizing various service types, and residing in various levels of rurality in Maine from 2008- 2016, as well as to identify potential barriers and facilitators to further implementation of Telehealth.	N=over 237.7 million APCD total medical claims from 2008-2016 in Maine N=999 Telehealth claims in 2008 N=22,981 Telehealth claims in 2016 N=16 key informants	A comparison of the utilization of Telehealth by insured patients from 2008-2016 in Maine A comparison of Private vs. Medicare vs. Medicaid insurance payer type utilization of Telehealth A comparison of service type rendered through Telehealth platforms A comparison of the utilization of Telehealth based on county demographic (urban vs.	Telehealth increased in usage from 0.02% in 2008 to 0.28% in 2016. This was a 14-fold increase, however still an overall very low usage. Rural populations were more apt to utilize Telehealth services Psych Telehealth services were the most prominent in urban cities, whereas speech pathology was the most utilized by rural patients Medicaid paid for 70% of Telehealth claims across both urban and rural counties The greatest identified barriers to utilization of Telehealth services was: provider resistance, staff turnover, provider shortages, and lack of internet	Mixed Methods study Level III Grade B

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
			rural)	A major point noted through provider interviews was that inadequate and inconsistent reimbursement for Telehealth services created a barrier in billing and accounting for all Telehealth services rendered in claims reports	
Lyden C, Sekula LK, Higgins B, Zoucha R. Job satisfaction and empowerment of self-employed nurse practitioners: A mixed methods study. J Am Assoc Nurse Pract. 2018 Feb;30(2):78-91. doi: 10.1097/JXX.0000000000000007. PMID: 29757819.	The purpose of this study was to assess the level of Job Satisfaction and empowerment among self-employed Nurse Practitioners and then examine the elements that influence those attributes throughout all 50 states and Washington D.C.	N=142 completed surveys by NPs N=13 NPs interviewed N=60 NPs working in Full Practice Authority States N=40 NPs working in reduced Authority States N= 42 NPs in restricted Authority States	Results of this study were compared to a similar NP job satisfaction study conducted in Arizona and an NP empower-ment study conducted in New Mexico.	84.5% of NPs opened their own practice to increase their autonomy 77.5% of NPs opened their own practice to improve and personalize their patient's care There is a statistically significant correlation between empowerment and job satisfaction. Significant correlations were also found between empowerment and collegiality, as well as formal power and collegiality and challenge/autonomy Overall influencers	Mixed Methods study Level III Grade B

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
				of job satisfaction and empowerment were autonomy, feelings of accomplishment, perceived feelings of opportunity, formal power, and information. Leading factors in dissatisfaction and lack of empowerment were the requirement of physician oversight and lack of administrative support. The empowerment results were consistent with a previous study conducted in New Mexico, and NPs reported less job satisfaction results as compared to a previous study in Arizona, however, that study only consisted of N=9 NPs.	
Markowitz, S., & Adams, E. K. A. (2020, March 1). The effects of state	The purpose of this study was to evaluate the impact that state's SOPs for	N=11,917 APRNs N=5,929 NPs	A comparison between state labor forces based	Except for the number of hours worked (which increased), APRN labor supply	Level II Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
scope of practice laws on the labor supply of advanced practice registered nurses. Retrieved October 1, 2023, from https://deliverypdf.ssrn.com/delivery.php?ID=460001024021100091082086073118004009064071084081032094122002054113097105026081002010122064122030961170690880100150711131211130200191071190081220980840020290800070950220650771240240050171271240214EXT=pdf&INDEX=TRUE	Advanced Practice Registered Nurses have on individual state labor supplies from 1992-2008. Impact was measured based on the following elements: employment in nursing, work hours, part-time work status, multiple job holding, self-employment, wages, and migration.		on SOP for NPs	decisions do not alter in response to changes in the state SOP environment NPs are significantly more likely to be self-employed when working in states without physician oversight requirements 562 respondents (5 %) moved during the survey period. Of those, 163 (29 %) went to a state with the same level of SOP, 203 (36 %) went to a state with a more restrictive SOP, and 196 (35 %) went to a state with a less restrictive SOP. 35% continue to live in the same state while only moving their job 65 % change both their job and residence.	
Talarico, Irene DNP, APRN,	The purpose of this study was to	N=40 mental health patients	Compared levels of	With Telehealth, Access went from	Level II Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
PMHNP-BC1. The use of telehealth to increase mental health services access and promote medication adherence in rural locations. Journal of the American Association of Nurse Practitioners 33(11):p 1074-1079, November 2021. | DOI: 10.1097/JXX.0000000000000495	evaluate if the utilization of Telehealth had an impact on access, medication adherence at 30 and 60 days after consultation, appointment follow-up, and patient satisfaction for patients at a clinic in Northeast Florida, meeting with a Psych mental health NP for schizophrenia, bipolar disorder, major depression, posttraumatic stress disorder, anxiety, and/or substance abuse.	who received care at a northeast Florida specialty mental health clinic	access, medication adherence at 30 and 60 days after the consultation, appointment follow-up, and patient satisfaction between patients who utilized Telehealth vs. face-to-face visits over a 3-month period,	4.86% to 10.19% Medication adherence was 82% at 30 days and 77.5% at 60 days, compared to the benchmark of 80%. 89% of patients stated they were comfortable with telehealth and willing to continue to utilize it for visits with PMHNPs. Telehealth with PMHNPs is a viable option in rural populations to care for mental health and dual-diagnosis patients. The pilot study facility increased their provider coverage by adding 3 remote PMHNPs to the telehealth role.	
The COVID-19 Healthcare Coalition Telehealth Impact Study Work Group. (2020, November). Telehealth	The purpose of this study was to describe the experiences and attitudes of various frontline providers on the use of Telehealth during the COVID-19	N= 1594 physicians and other qualified healthcare professionals survey respondents across the U.S.	Experiences and attitudes towards Telehealth were compared across medical specialties as	Summary of Findings: A mix of both audio-only and interactive video telehealth visit modalities were used at a high use	Level III Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
Impact: Physician Survey Analysis. COVID-19 Healthcare Coalition. Retrieved September 30, 2023, from https://telehealth-c19hcc-org-bzh6faksvq-uk.a.run.app/telehealth/physician-survey-analysis/?mc_id=us&utm_source=newsnetwork&utm_medium=l&utm_content=content&utm_campaign=mayoclinic&geo=national&placementsite=enterprise&cauid=100721	pandemic, through the utilization of survey data with the intent to help guide future medical practices, payers and government regulators as the shift towards Telehealth increases		well as provider practice location (rural, urban, suburban)	rate All provider types across all practice locations indicated that telehealth had provided them the ability to deliver quality care during the pandemic and their patients received it well. Motivation to increase telehealth usage was indicated across the board for both the majority of physicians and other qualified healthcare professionals	
Xiao Y, Becerik-Gerber B, Lucas G, Roll SC. Impacts of Working From Home During COVID-19 Pandemic on Physical and Mental Well-	The purpose of this study was to understand the impact that social, behavioral and physical factors have on the well-being of office workstation employees who had to transition to	N= 988 workers across various professions that transitioned from an office to home workspace	Workers overall perceived mental and physical health was compared from pre to post-work-from-home orders via	Physical exercise, food intake, communication with coworkers, children at home, distractions while working, adjusted work hours, workstation set-up and satisfaction with workspace	Level II Grade B

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
Being of Office Workstation Users. J Occup Environ Med. 2021 Mar 1;63(3):181-190. doi: 10.1097/JOM.0000000000002097. PMID: 33234875; PMCID: PMC7934324.	work from home during the COVID-19 pandemic		survey data on various elements of mental and physical health	indoor environmental factors were all associated with a decreased overall physical and mental health status after being forced to transition to a work from home setting	
Xue Y, Smith JA, Spetz J. Primary Care Nurse Practitioners and Physicians in Low-Income and Rural Areas, 2010-2016. JAMA. 2019;321(1):102–105. doi:10.1001/jama.2018.17944	The purpose of this study was to examine the trends in growth in Health Provider Service Areas between Physicians and Nurse Practitioners across the country in all 50 states, including Washington D.C. between 2010 and 2016. HPServiceAs were then designated as low-income, rural, urban, or metropolitan to identify the prominent profession in each area.	N= 51 (States plus Washington D.C.)	The rate of growth of NPs per 100,000 population versus the rate of growth of Physicians per 100,000 population in Health Service Areas across the country from 2010-2016. Rural vs. Metropolitan vs. Urban Health Service Area Provider growth rate and	From 2010 to 2016, the number of NPs increased from 59442 to 123,316. It was noted that the number of NPs/100,000 population increased at a mean rate of 15.3 in high-income areas versus a mean increase of 21.4 in low-income areas. From 2010 to 2016, the number of physicians increased from 225,687 to 243,738. The rate of growth across the country by NPs surpassed the rate of Physicians. By 2016, it was	Level III Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
			Prominence	observed that the rate of NP growth increased by an annual mean of 2.9/100,000 population in metropolitan areas, 3.2 in urban areas, and 4.3 in rural areas of the country. In 2016, research showed that the highest amount of NPs (41.3/100,000 population) resided in rural Health Service Areas and the highest amount of physicians (68/100,000 population) resided in metropolitan areas of the country.	
Young, S. G., Gruca, T. S., & Nelson, G. C. (2020). Impact of nonphysician providers on spatial accessibility to primary care in Iowa. Health Services Research, 55(3), 476–485. https://doi-org.ezproxy.southern.edu/10.11	The purpose of this research was to assess the impact that Nurse Practitioners and Physician's Assistants made on the Spatial Accessibility (ability to reach a provider with availability within a 30 minute commute) to Primary Health Care in the State of	N=3537 total Primary Care Providers in Iowa in 2017 N=2000 Primary Care Physicians N=423 Primary Care Physicians's Assistants N=1114 Primary Care	Spatial Accessibiilit y was assessed using only Physicians as Primary care providers, and then again utilizing Nurse Practitioners as additional Primary	On the state level, there was not a Provider shortage according to patient:provider ratio as determined by population based HPSA criteria; there was however a mismatch of geographic allocation of care throughout the state between urban and rurual areas creating HPSAs based on	Level II Grade A

Matrix					
Reference	**Research Question Purpose Objective Hypothesis**	**Patients Population Sample**	**Comparisons**	**Outcomes Findings**	**Level of Evidence and Quality Grade**
11/1475-6773.13280	Iowa in 2017.	Nurse PRactitioners N=3,106,589 Residents in Iowa	Care Providers. Percentages of the population without access to care were compared. Results were then assessed against national HPSAs to assess if a gap in coverage was decreased.	population, even within urban settings due to a supply/demand issue. Physicians met their patient capacity levels leaving unallocated patients. It was found that the additional coverage of non physician primary care providers decreased the unallocated population by 65%-from 7% of the population down to 2.5%. 96% of the increase in spatial accessibility occurred in rural parts of the state.	