

October 2021

"More Accessible and Easier to Deal With": A Qualitative Inquiry of Leaders' Perceptions of the Evolving Roles and Responsibilities of Advanced Practice Providers at Texas Medical Center

Athena Krasnosky MSN, APRN, CPNP
Texas Children's Hospital, adkrosno@texaschildrens.org

Jessie Marcet-Gonzalez MSN, APRN, CPNP
Texas Children's Hospital, jessie.marcet-gonzalez@bcm.edu

Jordan Rodriguez BS
Texas Children's Hospital, jlmcandr@texaschildrens.org

Natalie Cormier Smith MSN, APRN, NP-C
Texas Children's Hospital, natalie.cormier@bcm.edu
Follow this and additional Works at: <https://digitalcommons.library.tmc.edu/uthoustonjqalsafe>

 Brenda Chesley MSN, APRN, CPNP, AC/PC
Texas Children's Hospital, brenda.chesley@bcm.edu
ORCID iD: <https://orcid.org/0000-0001-9000-0001>
This work is part of the [Health and Medical Administration Commons](#), [Health Information Technology Commons](#), [Industrial and Organizational Psychology Commons](#), [Medical Specialties Commons](#), [Nursing Administration Commons](#), and the [Pediatric Nursing Commons](#)

See next page for additional authors

Recommended Citation

Krasnosky, A., Marcet-Gonzalez, J., Rodriguez, J., Cormier Smith, N., Chesley, B., Brock, L., Prasla, H. N., & Barton, G. (2021). "More Accessible and Easier to Deal With": A Qualitative Inquiry of Leaders' Perceptions of the Evolving Roles and Responsibilities of Advanced Practice Providers at Texas Medical Center. *Journal of Nursing & Interprofessional Leadership in Quality & Safety*, 4(1). Retrieved from <https://digitalcommons.library.tmc.edu/uthoustonjqalsafe/vol4/iss1/2>

This article is free and open access to the full extent allowed by the [CC BY NC-ND license](#) governing this journal's content. For more details on permitted use, please see [About This Journal](#).

"More Accessible and Easier to Deal With": A Qualitative Inquiry of Leaders' Perceptions of the Evolving Roles and Responsibilities of Advanced Practice Providers at Texas Medical Center

Abstract

Background. With over 10 million patient encounters a year at Texas Medical Center (TMC), Advanced Practice Providers (APPs) are being incorporated into health care delivery models. Moving beyond the narrow "scope of practice" debates that frequently surface when talking about APPs, this inquiry instead seeks to broaden the discussion and take a more comprehensive view of how APPs are being incorporated into health care delivery models that span across several TMC institutions.

Methods. This study uses a thematic analysis study design to analyze structured interviews collected from a small convenience sample of Advance Practice Provider Program Directors at Texas Medical Center. A semi-structured interview guide was pilot tested for clarity and relevance of the questions.

Results. The iterative thematic analysis approach saw four main themes emerge: 1) APP value to the team efficiency, 2) APP benefit to billing, productivity, and improved quality metrics, 3) variation in APP orientation and utilization, and 4) projected future growth of APPs. In addition, 4 institutions provided quantitative data from 2011 and 2016 about the number of APPs.

Conclusions. The quantitative data analysis only further demonstrates the organic growth and presumed value equation that tilts towards APPs being an important part of the evolving healthcare workforce both now and in the years to come. This numeric information is consistent with the analyses and projections found in the relevant workforce reports periodically conducted and issued by the Health Resources Services Administration (HRSA).

Keywords

advanced practice providers, nurse practitioners, physician assistants, physician shortage

Authors

Athena Krasnosky MSN, APRN, CPNP; Jessie Marcet-Gonzalez MSN, APRN, CPNP; Jordan Rodriguez BS; Natalie Cormier Smith MSN, APRN, NP-C; Brenda Chesley MSN, APRN, CPNP-AC/PC; Linda Brock MSN, APRN, CPNP; Heena Narsi Prasla MSN, APRN, CPNP; and Geran Barton

Introduction

Access and quality care, central to health care reform, may well depend on the growing use of advanced practice providers (APPs), such as nurse practitioners (NPs) and physician assistants (PAs), in tertiary care settings to manage patients, provide continuity of care, and improve quality and safety (Kleinpell et al., 2019). The workforce implications for health care systems are becoming clearer with an impending Medical Doctor/Doctor of Osteopathic Medicine shortage (Pierce, 2016). NPs comprise the largest group of non-physician primary care providers in the United States (19%) (Spetz et al., 2017).

With over 10 million patient encounters a year at Texas Medical Center (TMC) (Texas Medical Center, 2021), nurse practitioners and other APPs are incorporated into health care delivery models that span a full range of hospital-based services including acute, specialty, chronic and rehabilitative care. Owing to its size and academic approach, TMC is well positioned to analyze the emerging role of APPs. This qualitative inquiry explores perceptions of advanced practice provider leaders regarding the emerging roles assumed by APPs. Moving beyond the narrow “scope of practice” debates that frequently surface when talking about APPs, this inquiry instead seeks to better understand how APPs are incorporated into health care delivery models that span across several TMC institutions. How APP leaders perceive the current roles and responsibilities may then be used to inform the design and evolution of future roles and responsibilities for APPs in these health care institutions. Because of the importance of APPs in caring for the current and future health needs of patients, the education, accreditation, certification, and licensure of APPs need to be effectively aligned in order to continue to ensure patient safety while expanding patient access to APPs (National Council of State Boards of Nursing APRN Advisory Committee & APRN Consensus Work Group, 2008).

According to a Government Accountability Office (GAO) report, “a well-trained and diverse health care workforce is essential for providing Americans with access to quality health care services” (U.S. Government Accountability Office, 2014, p. 0). Likewise, the Institute of Medicine (IOM), in their study *The Future of Nursing: Leading Change, Advancing Health* (2011) described the nursing profession as instrumental in reconstructing the United States health care system. The study suggests that if advanced practice registered nurses (APRNs), which include nurse practitioners, are permitted to practice at the full scope of their licensure, they could help build the necessary workforce to meet the impending physician shortage and contribute their unique skills to the delivery of patient-centered health care (Institute of Medicine [IOM], 2011). *The Future of Nursing* put forth four key recommendations to address this increasing demand for high quality, effective health care services: (1) Nurses should practice to the full extent of their education and training; (2) Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression; (3) Nurses should be full partners, with physicians and other health professionals, in redesigning health care in the United States; and (4) Effective workforce planning and policy making require better data collection and an improved information infrastructure (IOM, 2011). The growing nurse practitioner workforce, when supported to practice at the top of their license and certification, provides a significant increase of primary care providers who are well-positioned to improve access to health care; this is especially important for efforts to reduce racial and ethnic health disparities (Poghosyan & Carthon, 2017). Efforts are now underway to enhance patient care productivity through increasing the capacity of the workforce and better utilizing nurse practitioners (Woo et al., 2017). However, limited progress has been made in achieving the IOM recommendations since the 2011 report (National Academies of Sciences, Engineering, and Medicine, 2016).

Reports on the healthcare workforce published by Health Resources Services Administration (HRSA) provide models and detailed projections which highlight the potential role that APPs can play in meeting the nation’s health care needs. HRSA projected that the supply of NPs and PAs is likely to grow rapidly and could help shrink the workforce gap created by the shortfall of physician providers if these APPs are effectively integrated into the health care delivery system (U.S. Department of Health and Human Services, 2013). NPs and PAs are likely to fill this gap with the full support of patients as documented by Dill and colleagues (2013) who

found strong acceptance of care by NPs and PAs, especially by those patients who had prior direct experience with them.

Purpose

The purpose of this thematic analysis is to analyze structured interview data collected from a small convenience sample of Advanced Practice Provider Program Directors at Texas Medical Center by examining the narrative answers to interview questions to identify themes that emerge from statements and descriptions of APP practice.

Method

Sample

The sample for this thematic analysis included a convenience sample of six APP Program Directors working in six different hospital organizations within Texas Medical Center. The positions the respondents held varied from Lead Advanced Practice Provider to Director of Advanced Practice Providers. A total of six face-to-face interviews were conducted.

Context

The context in which this thematic analysis took place is a medical center in a large southern city comprising 8 research and academic institutions, 21 hospitals, and a number of other health care related institutions (Houston First Corporation, 2021). The medical center employs over 106,000 people and has 10 million patient visits a year (Texas Medical Center, 2021). Each interview respondent was employed in their position for over three years, and the represented institution employed both nurse practitioners and physician assistants.

Methodology

This study uses a thematic analysis design to analyze structured interview data collected from a small convenience sample of APP Program Directors at Texas Medical Center. The project managers of the study developed and piloted the interview questions for clarity and relevance to the topic. The project managers conducted face-to-face interviews with each of the individual program directors.

The project methodology used a thematic analysis approach, separating the narrative answers into smaller units of content and analyzing statements to identify themes that emerged from subjects' descriptions of APP practice in their institutions. A theme was considered important when it captured a salient point or overall experience, and not by how frequently the theme occurs (Braun & Clarke, 2006; Vaismoradi et al., 2013).

Procedure

The thematic content analysis methodology (Sparkes, 2005) was used to identify themes that emerged from the interviews. The interviews were recorded, transcribed, and analyzed by breaking down the transcription into manageable code categories for analysis (i.e., after coding the text, the codes were sorted into "code categories" to further summarize the data).

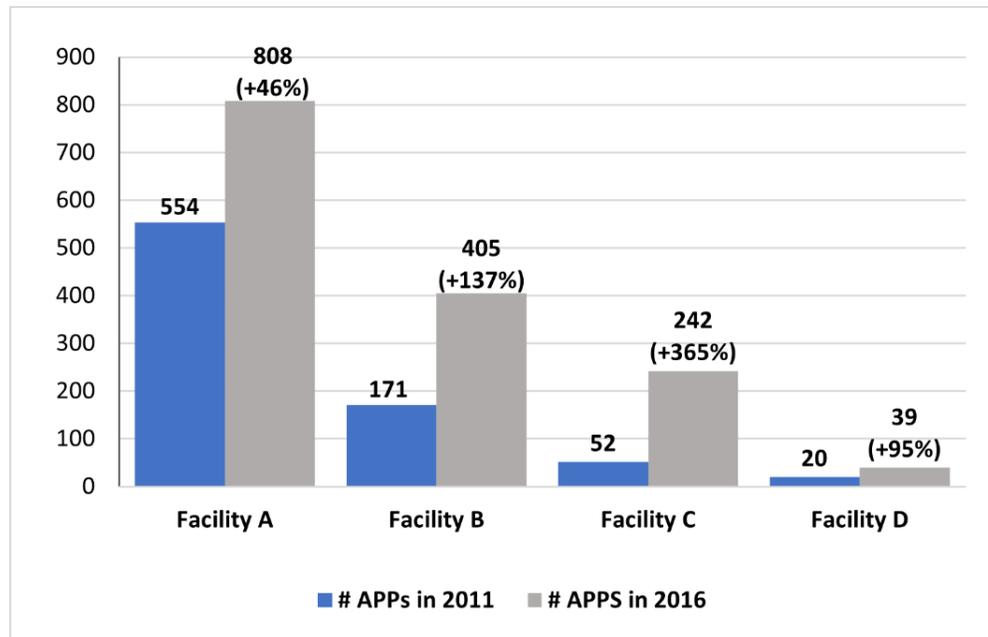
Results

Four main themes emerged from the content analysis of the interviews: 1) APP value to team efficiency, 2) APP benefit to billing, productivity, and improved quality metrics, 3) variation in APP orientation and utilization, and, 4) APP growth. In addition, four institutions provided quantitative data from 2011 and 2016 about the number of APPs in their organization. Figure 1 shows that growth in the number of APPs occurred in

all the data-providing organizations. The growth of APPs ranged from 46% to 365%, while the average growth across the four organizations was 161%.

Figure 1

Growth of APPs at 4 Texas Medical Center Facilities, 2011-2016



Theme 1: APP Value to Team Efficiency

Respondents identified that APPs added efficiency to the clinical team composed of medical residents and attending physicians. In many cases, APPs were able to make clinical decisions and implement care in a timely manner, as opposed to residents who had to confirm their decisions at a higher level before implementing clinical care. APPs enabled the physicians to address other areas of patient management.

One respondent described the efficiency that advanced practice providers add to the team care process:

“The functionality of waiting for a resident team that has this whole hierarchy to go through to get answers about anything [is less efficient], whereas we [APPs] see a patient and they need the next level of care; we just do it. We don’t have to discuss it and ponder it or call 10 people about it.”

APP leaders identified that the APPs serving on various care teams within their institutions are recognized as being highly skilled and efficient at arranging for the discharges of hospitalized patients. APPs can discharge or move patients without having to wait for answers or approval, as is more common with the residents on a team. APP leaders recognize that the cost of using APPs is balanced favorably with the efficiency that they bring to the discharge process as well as the ease that characterizes how APPs move patients through the system.

“For discharges, I [an APP] try to get all of the paperwork complete very early even if the patient is waiting for one particular thing . . . I’ll still go ahead and complete everything else so that all that I have to do is pull the trigger on the discharge; family has already been educated; prescriptions have already been printed; getting things ready to go.”

“We [APPs] are the most efficient dischargers in the hospital. We utilize resources well. Our patients are transferred from one level of care to the next level of care by like 8 am.”

Respondents described how physicians on clinical teams perceived the ability of the APP to coordinate with the nursing team and the APPs’ ability to make decisions in a more efficient manner, especially when compared to the resident physician teams:

“They [resident physician teams] are having some challenges because they are not accustomed to managing patients like [the APPs do] and are making some decisions that are not decisions that I [a physician] would make.”

“Being followed by a fellow on the resident team, an attending admitted, ‘I wish this patient was on your [the APPs’] service because you all do a better job [of completing care components needed].’”

One respondent stated that RNs liked to work with APPs on the team because they perceived APPs to be more easily accessible and able to make management decisions in a timelier manner than residents on the team, given their experience and confidence in making the right management decision:

“I think the nurses will tell you if a trauma patient is on the resident team and not on our [the APP] team that they [the nurses] don’t like that. I think they see us [APPs] as more approachable; quicker to make a decision. If they call me about a pain their patient is having, I can go assess the pain and make a plan and a change immediately . . . and because the residents are taking care of a new and unfamiliar population, they’re like, ‘Oh my gosh I might kill them!’; they are so fearful of making decisions that it takes them a long time to provide some help.”

Theme 2: APP Benefit to Billing, Productivity, and Improved Quality Metrics

APP leaders described the difficulty in having a clear-cut way to quantify or measure the benefit of using APPs on inpatient clinical care teams due to a lack of tracking of APP billing hours or productivity in the same ways that physicians submit bills for services:

“There is really no way [to measure their billing, hours, or patient satisfaction] when they are working under the physician.”

“They [the organization] really don’t track productivity or anything like that. I know some departments . . . actually have RVU [relative value unit] goals [for APPs].”

“I know in the Department of Surgery, they have RVU goals which is kind of unique to them; no one else has RVU goals [for APPs].”

Respondents described nuanced ways to quantify the APPs’ value, where a more robust understanding of productivity that moves beyond a strictly RVU based model is needed.

“The contribution we do look at is what is the revenue billed and generated from independent visits. And then, we are really struggling with how to manage and measure the contribution [of APPs] in co-managed visits.”

“One way is to look at the team productivity before [introducing APPs to the team] and productivity after.”

“If you’re cost avoiding, then the hope is that they [APPs] might help with the margin.”

The APP leaders described the positive impact that APPs working on care teams brought to quality and patient experience metrics. They identified benefits that the APPs brought to the delivery of care, while stating that it was difficult to quantify the ways that APPs improved care:

“What has improved is the quality of care; communication with the families.”

“We decreased the LOS [length of stay] in diagnosis patients—a very specific population where we had a profound impact when we implemented an NP team.”

“Being an effective communicator with staff and teaching at the bedside to staff . . . you can’t measure that.”

“Everyone is into ‘How do you quantify your productivity?’ . . . I’m at the point now, 11 years later, that I just know that we do. There are a number of things that we measure . . . there are a lot of things that we contribute to, that help from a quality standpoint and from a tracking standpoint.”

One APP administrator indicated that patient experience scores increased and LOS decreased when APPs were added to their service:

“Our [patient experience] scores go up dramatically when we have added new APPs to the service. [Patient experience] scores seem to go up every time.”

“I’ve seen our length of stay go down dramatically when adding more [APPs] to the service, and for every service that gets one [an APP], the length of stay goes down.”

APPs add value to patient education and, in turn, to patient experience. One APP leader described how nurse practitioners took on educational and quality initiatives:

“We came up with an ‘Ask an NP’ initiative; twice a week we provided lunch and cookies for patients and families so they could come to the breakroom to ask their NP questions. Over time, we saw a little bit of an increase in patient satisfaction [scores].”

Theme 3: Variation in APP Orientation and Utilization

Institutions had varied approaches to their use of APPs on clinical services. The clearest examples of variation emerged in response to questions about orientation/on-boarding of APPs and in descriptions of how autonomously APPs conducted their clinical practices at each organization.

Respondents described a typical approach to on-boarding where there is a general orientation that is supplemented by a more specific orientation tailored to the team on which the APP will work:

“It’s basically a tiered approach to orientation. We have Phase 1, Phase 2, and Phase 3. Phase 1 is an introduction to the department and the people you are going to be interacting with on a daily basis.”

“There are two things that happen. One is an institutional orientation . . . [which] covers a variety of topics from the library to introduction to the EHR, resources, and some individual programs like our professional development program, as well as credentialing and privileges . . . Then each department has a department specific orientation, and they, the department specific ones, range from 6 weeks to 6 months, depending on the service.”

One leader conceded that there was not a formal orientation for APPs, and at that institution, the onboarding relies heavily on the previous APPs of the team and the team itself:

“They [APPs] get trained by whoever was in their position before them and the other PAs or NPs in their department. Therefore, it is department or division specific.”

Another APP leader spoke of a recognition of the need for a formal orientation process so that APPs can be brought on board in a standardized manner in any organization.

“I am actually working right now with [facility name], hopefully, to set up a centralized APP program so there is one person or department that kind of handles all of the NPs and PAs across [the facility], so it would be more uniform.”

APP leaders discussed their views about autonomy and independent practice, settings for inpatient practice versus outpatient or both, and the range of duties that APPs might take on beyond clinical care including initiatives in education and research:

“We [APPs] had sort of gone through a swing. We didn’t have a lot of independent practice, and then we had considerably more independent practice, and then we went through a time where we had less independent practice.”

“We [APPs] are extremely autonomous. There are days that we may be the only one seeing a patient that is very sick, depending on what is going on. So, it’s great; it’s a good role, but it’s a lot more autonomous than other folks have.”

Respondents described areas in which the APPs achieve a number of other professional goals that go beyond their clinical responsibilities. One respondent recounted how the institution incentivizes APPs to publish papers or present at professional forums. Such activities benefit both the APP and the institution.

“There are goals that are structured under education, research, administration, clinical care, and from a menu of goals, the APP can pick up to 6. If they achieve 3 goals, they get an incentive pay out . . . and the goals are really meant to be a stretch above and beyond their regular job. So, it might be involvement in research, publication of a manuscript, presentations, development of a new clinic, community outreach, all of which has to be at an advanced practice level . . . When they achieve their goal, they submit their evidence of goal achievement to a peer review committee; an advanced practice registered nurse (APRN) committee and a PA committee respectively. They review the evidence and say yes, they have met this goal or not. It is a very robust, good program. The APPs like it a lot.”

“We have APPs who are in graduate programs and PhD programs, and they are doing their student dissertation, that kind of thing. We also have some already PhD prepared APRNs, and they are doing individual research projects within their departments.”

Theme 4: APP Growth

The theme of APP growth emerged from APP leader responses due to a projected need to expand the ranks of APPs at their institutions. Leaders expressed a sense of support from both executive and clinical leaders for additional APPs to help their organizations and clinical programs in meeting health care needs in the future. The expansion of medical and surgical services within institutions supports the need for APPs to work on clinical care teams.

“In the last four years, we have seen growth . . . I can see that [trend] continuing to go up. As the department is adding in more and more divisions and adding more and more physicians and their goal is to see more and more patients, the demand [for APPs] is going to go up because the more patients you see, the more surgeries and the more inpatient service you have.”

“There is growth . . . it’s about disruption in healthcare . . . opportunities for home visits, and ambulance services . . . clinic stuff, and developing new services within each entity. I will say our executive leadership is very supportive of APPs and looking for opportunities.”

Discussion

The thematic analysis of the interviews from 6 APP leaders revealed that APPs are seen as adding to the efficiency of the clinical team, especially in the areas of discharging patients and streamlining clinical decision making. APPs were associated with improvements in patient quality metrics and inpatient experience scores. There was variation in how APPs are managed across the institutions, as well as differences in orientation and on-boarding processes and clinical utilization of APPs. The APP leaders unanimously projected an increased need for additional APPs and voiced consistent support from executives and physician leaders for the addition and growth of APPs on various clinical teams.

The inability to quantify what the APP brings to the organization in economic terms is an issue that should be addressed. Respondents identified that APPs were not counted in the RVU-based productivity measurement systems while recognizing the APPs’ increased bedside presence to evaluate clinical issues and patient progression through the system as the prominent aspect of the APPs’ role. It is clear that organizations need to develop better metrics to identify the economic impact of APPs within departments and healthcare institutions.

APP leaders connected the input of APPs on clinical teams to outcomes such as improved patient experience scores, improved quality metrics, and decreased length of stay. However, the institutions do not have correlating data available to directly link APP services to the improved outcomes. Complexities around billing for APP services within the institutions make it difficult to quantify return on investment calculations.

The APP growth theme that emerged is consistent with the American Association of Nurse Practitioners (AANP) statement on the uniqueness of the NP role and highlights the opportunity for expanded roles as the need

for more APPs grows (American Association of Nurse Practitioners, 2019). The numeric information is consistent with the analysis and projections found in the relevant workforce reports periodically conducted and issued by HRSA (U.S. Department of Health and Human Services, 2013).

The respondents identified that APPs participate in research, conduct quality improvement initiatives, and complete advanced academic degrees. Institutional support of the scholarly aspects of APP practice can add to an institution's ability to advance and excel in patient care through these activities.

Recommendations for Practice

The need for improved clinical team-based care in medical and surgical services in acute care hospitals has driven the monumental growth of APP positions at TMC. Scholarly work on the roles and responsibilities of the APP and outcomes of care is needed to support and expand the efficacy of the APP in the healthcare setting. Future study requires an organized view of both quantitative and qualitative data collection with a focus on identification of potential barriers as well as the facilitative factors that put APPs in innovative positions within a variety of healthcare organizations. The policy implications for future action are evident as the exploration and analysis occurs and design and planning recommendations emerge from the scholarly process.

Conclusions

The thematic analysis of the interviews from 6 APP leaders at TMC institutions revealed that APPs add to team efficiency, especially in the areas of discharging patients and streamlining clinical decision making. They are associated with improvements in quality metrics and patient experience scores. APPs on care teams brought a positive impact to the quality of care and decreased patient length of stay. APP leaders identified that formal orientations at institutions and organizations are missing from onboarding, relying heavily on other APPs and previous teams to facilitate the orientation process. There was unanimity among the APP leaders interviewed in projecting growth in the ranks of APPs at their institutions. All of the leaders expressed a sense of support from both executive and clinical leaders and recognition that additional APPs will help their organizations and programs in meeting health care needs in the future.

References

- American Association of Nurse Practitioners. (2019). *Scope of practice for nurse practitioners*. <https://www.aanp.org/advocacy/advocacy-resource/position-statements/scope-of-practice-for-nurse-practitioners>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Dill, M. J., Pankow, S., Erikson, C., & Shipman, S. (2013). Survey shows consumers open to a greater role for physician assistants and nurse practitioners. *Health Affairs*, 32(6), 1135-1142. <https://doi.org/10.1377/hlthaff.2012.1150>
- Houston First Corporation. (2021). *Texas Medical Center*. Visit Houston. <https://www.visithoustontexas.com/about-houston/texas-medical-center/>
- Institute of Medicine (IOM). 2011. *The future of nursing: Leading change, advancing health*. National Academies Press. <https://doi.org/10.17226/12956>
- Kleinpell, R. M., Grabenkort, W. R., Kapu, A. N., Constantine, R., & Sicoutris, C. (2019). Nurse practitioners and physician assistants in acute and critical care: A concise review of the literature and data 2008-2018. *Critical Care Medicine*, 47(10), 1442-1449. <https://doi.org/10.1097/ccm.0000000000003925>

- National Academies of Sciences, Engineering, and Medicine. (2016). *Assessing progress on the Institute of Medicine report The Future of Nursing* (Altman, S. H., Butler, A. S. & Shern, L., Eds.). National Academies Press. <https://doi.org/10.17226/21838>
- National Council of State Boards of Nursing (NCSBN) APRN Advisory Committee and APRN Consensus Work Group. (2008). *Consensus model for APRN regulation: Licensure, accreditation, certification & education*. https://www.ncsbn.org/Consensus_Model_for_APRN_Regulation_July_2008.pdf
- Pierce, S. (2016, September 14). *TMC Health Policy Institute Examines Health Care Provider Shortage*. Texas Medical Center. <https://www.tmc.edu/news/2016/09/tmc-health-policy-institute-examines-health-care-provider-shortage/>
- Poghosyan, L., & Carthon, J. M. B. (2017). The Untapped Potential of the Nurse Practitioner Workforce in Reducing Health Disparities. *Policy, Politics, & Nursing Practice*, 18(2), 84-94. <https://doi.org/10.1177/1527154417721189>
- Sparkes, A. C. (2005). Narrative analysis: Exploring the whats and hows of personal stories. In I. Holloway (Ed.), *Qualitative research in health care* (pp. 191-209). Open University Press.
- Spetz, J., Skillman, S. M., & Andrilla, C. H. A. (2017). Nurse practitioner autonomy and satisfaction in rural settings. *Medical Care Research and Review*, 74(2), 227-235. <https://doi.org/10.1177/1077558716629584>
- Texas Medical Center. (2021). *About us*. <https://www.tmc.edu/about-tmc/>
- U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. (2013). *Projecting the supply and demand for primary care practitioners through 2020*. <https://bhw.hrsa.gov/data-research/projecting-health-workforce-supply-demand/primary-care-practitioners>
- U.S. Government Accountability Office (GAO). 2014. *Health care workforce: Federal investments in training and the availability of data for workforce projections*. <https://www.gao.gov/products/gao-14-510t>
- Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & Health Sciences*, 15(3), 398-405. <https://doi.org/10.1111/nhs.12048>
- Woo, B. F. Y., Lee, J. X. Y., & Tam, W. W. S. (2017). The impact of the advanced practice nursing role on quality of care, clinical outcomes, patient satisfaction, and cost in the emergency and critical care settings: A systematic review. *Human Resources for Health*, 15(1). <https://doi.org/10.1186/s12960-017-0237-9>