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## Improving Onboarding and Role Transition for Advanced Practice Providers

Leighann Ebenezer

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SCHOOL OF  
GRADUATE STUDIES

DOCTOR OF NURSING PRACTICE (DNP) PROGRAM

Family Nurse Practitioner Track

**A DNP PROJECT**

**Improving Onboarding and Role Transition  
for Advanced Practice Providers**

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**DATE: August 2021**

Improving Onboarding and Role Transition for  
Advanced Practice Providers

A Project Presented to the Faculty of the Department of Nursing  
Messiah University

In partial fulfillment of the requirements  
For the Degree of Doctor of Nursing Practice  
Family Nurse Practitioner Track

By

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Improving Onboarding and Role Transition for Advanced Practice Providers

Submitted in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Nursing Practice at Messiah University

By  
Leighann Ebenezer  
July, 2021

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### Abstract

**BACKGROUND:** APPs are increasingly being integrated into various health care settings and the role continues to gain popularity and utility as a solution to the shortage of physicians. Successful onboarding of APPs has been identified as an important factor in the role transition and integration of APPs into their team and organization. **PROBLEM:** When hired, APPs are often not onboarded successfully to the detriment of the provider and the organization. Despite the evidence for comprehensive onboarding programs, APPs continue to receive insufficient onboarding that ignores their unique scope of practice. **METHOD:** The Ottawa Model of Research Use, a knowledge translation model, was used to guide this project and Meleis' transitions theory provided a theoretical framework. An exhaustive literature review was performed with 17 full-text articles being critically appraised. **INTERVENTION:** Participants completed an orientation and role transition survey based on their previous onboarding experience. The same group then reviewed a proposed orientation toolkit. The participants completed the same survey after their review to reflect on the potential impact of the toolkit. Statistical analysis was performed on the data obtained from the surveys. **RESULTS:** The total scores between the baseline and follow-up surveys were statistically and clinically significant. Overall, the participants perceived that the new onboarding toolkit would improve transition into practice and integration into their organization. **CONCLUSION:** Evidence supports comprehensive onboarding programs for improving role transitions for APPs. The survey results from this project support the existing literature and may provide the foundation for a pilot onboarding program at the project site.

*Keywords:* Advanced Practice Provider, Nurse Practitioner, Physician Assistant, onboarding, orientation, role transition

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I would like to dedicate this project, paper, and degree to my dad, who passed away before getting to see me finish. He was a dad who bragged about his kids constantly and never hesitated to tell us that he was proud. I know he would be proud of me now.



## **Improving Onboarding and Role Transition for Advanced Practice Providers**

### **Background**

Advanced Practice Providers (APPs), namely Nurse Practitioners (NPs) and Physician Assistants (PAs), have become a major portion of the health care providers in the United States. Growing in demand due to widespread physician shortages, APPs have been used to bridge the gap and increase access to primary care and specialty practices (Barnes, 2015). In 2017, 2,730 medical school graduates entered primary care practice compared to 22,500 NPs (Pohl et al., 2019). Due to this significant and rapid increase in APP prevalence, successful integration of NPs and PAs into organizations and health care teams is imperative. Traditionally, all newly hired employees, including APPs, complete an orientation, which is often defined as a one-time event that educates the employee on policies and expectations of the institution and is uniform regardless of the employee's specific role or department. Onboarding, alternatively, is customized, long-term, and prepares the employee to contribute to the organization, build relationships, and begin a process of engagement (Garcia et al., 2017; Zink & Curran, 2018). The onboarding period is thought by many researchers to be the most important time in determining an employee's performance, retention, and engagement, and as a period that is often neglected (Ferrazzi, 2015). Existing literature shows that role transition for APPs is particularly challenging, and when unaddressed by organizations, can lead to poor performance and high turnover (Barnes, 2015). Comprehensive onboarding programs have been successful at integrating both newly graduated and experienced APPs (Anen & McElroy, 2015; Goldschmidt et al., 2011).

### **Problem statement**

Implementation of a formal onboarding program for APPs has been shown to improve role clarification, provider confidence, perception of organizational and administrative support, and improved team relationships (Anen & McElroy, 2015; Barnes, 2015; Sargent & Olmedo, 2013). Despite the existing evidence that demonstrates APP's desire for formal onboarding and the documented benefits that onboarding has for organizations and health care outcomes, many practice settings have not adopted this practice. This Doctor of Nursing Practice (DNP) project will propose a standardized orientation toolkit for a large research hospital that will be evaluated by APPs and compared to previously experienced onboarding processes and role transition. By answering the question, "Among advanced practice providers (APPs) in a research hospital, how is perception of role transition impacted by a proposed standardized orientation toolkit compared to no standard orientation?", this project will help translate existing evidence for onboarding APPs into practice.

### **Needs Assessment**

This project will be conducted at the National Institutes of Health (NIH). The need for a central onboarding process was identified as a practice gap by nursing and clinical leadership after exit interviews, feedback from new and existing employees, and clinician team members called attention to the problem. Within the NIH, there are 27 different institutes, and each institute hires its own APPs and provides orientation and onboarding for them without centralized guidance. While specificity is appropriate for components of onboarding, the absence of a formal onboarding program contributes to the lack of role clarity, community, and support experienced by APPs. APPs have expressed feeling "siloes" and being inadequately prepared to navigate their new institution. The SWOT (Strengths, Weaknesses, Opportunities, Threats)

analysis (see Appendix A) performed for the NIH revealed many of the strengths that would support executing an onboarding program for APPs. NIH leadership has identified the need for onboarding programs and has led an initiative to create such programs for each clinical specialty. Anen and McElroy (2015) identify leadership collaboration and support as critical to the APP onboarding process and note that it is a primary focus area for organizations that have effectively integrated APPs. The internal challenges that will make onboarding implementation difficult at NIH center around the variation in roles among the APPs. When the roles are clearly defined for the providers and for the team they are joining, professional identity is improved along with job satisfaction and commitment to an institution (Morgan et al., 2020; Sargent & Olmedo, 2013). The proposed toolkit will address the SWOT analysis results by having general content and content specific to the APP's role as defined and clarified by all onboarding team members: the liaison, the clinical mentor, and the professional/personal mentor. The results of this project will be shared with NIH leadership to promote the progression of the onboarding initiative.

### **Aims, Objectives, Purpose Statement**

The aim of this project is to improve the integration and engagement of APPs within NIH, thereby enhancing their practice, creating stronger teams, and enhancing patient care. The following project objectives were created to ensure that the project aim, and purpose could be accomplished:

1. The project team lead will complete and test the NIH-adapted online version of the APP Survey of Orientation/Transition to Practice by April 2021.
2. The project team lead will develop an evidence-based toolkit that is available for online review by April 2021.

3. The project team will complete the invitation letter and test survey and toolkit links for functionality by April 2021.
4. The project team lead will implement the toolkit intervention by sending out the invitation and links to eligible participants via the NP and PA listservs by April 1, 2021.
5. All the participants will confirm having reviewed the toolkit prior to completing the follow-up survey by May 24<sup>th</sup>, 2021.
6. The project team lead will analyze the survey data, statistically evaluate the impact of the toolkit, and report project results to Messiah faculty by Aug. 1, 2021.

The expected outcomes of this project are measurable goals that will be gleaned from the participant response data. If achieved, the project outcomes will help inform future practice changes at the project site, support existing APP literature, and encourage future scholarship and pilot studies of APP onboarding. The expected outcomes include the following:

1. The APP participants will perceive that the toolkit improved their overall transition to practice by providing a higher mean score on the follow-up survey than the baseline survey.
2. A significant positive correlation between survey question # 20, “My orientation adequately prepared me for practicing as an APP” and # 22, “My orientation was structured and followed a clear timeline” is present in the follow-up survey results.
3. 50% of the participants will perceive that the proposed toolkit would improve their understanding of their APP role by rating survey question #40, “I clearly understood my role as an APP within my area of practice” as agree or strongly agree on the follow-up survey.

4. 50% of the participants will perceive that their systems and organizational skills would be improved with the proposed toolkit by rating survey questions #45-#49 as agree or strongly agree on the follow-up survey.

The purpose of this project was to develop an evidence-based onboarding toolkit that could improve APP's transition into practice and integration into an organization and team.

### **Review of Literature**

The initial literature search for this project was conducted in December 2020 and was limited to full text articles, written in English, and published in the last 15 years. The databases PubMed, CINAHL, and Google Scholar were used. The search terms “onboarding,” “orientation,” “role transition,” “integration,” “Nurse Practitioner,” “Physician Assistant,” and “Advanced Practice Provider” were used. The total number of relevant articles yielded from PubMed was 1788, 4957 from CINAHL, and over 9,000 from Google Scholar. Five additional articles were located by reviewing the reference lists in other highly relevant articles. A review of titles and abstracts was used to eliminate all but 41 articles. See PRISMA diagram in Appendix B for a full list of article exclusion criteria. Two subsequent reviews were completed based on relevance to the project aim and objectives that resulted in 17 articles being eliminated based on abstracts and 7 more eliminated after a full text review. Critical appraisal was completed using the Johns Hopkins Evidence-Based Practice tool for 17 articles. All appraised articles were published in the last 10 years except two seminal works, both published within the last 12 years. The articles chosen for appraisal included 10 program evaluations, one concept analysis, one expert opinion article, two qualitative studies, two quantitative studies, and one

mixed method pilot study. See Appendix C for a complete table of evidence. Most articles were evidence levels III, IV, or V, with B being the most frequent quality rating.

Several common themes were identified in the literature and used to guide this project. Authors frequently concluded that the transition period for APPs is significant and challenging (Bahouth & Esposito-Herr, 2009; Barnes, 2014; Barret & Wright, 2018; Goldschmidt, et al., 2011). Role transition applies to new APPs entering the field for the first time and experienced APPs whose role has changed by joining a new team or organization (Anen & McElroy, 2015; Barnes, 2015). APPs have repeatedly identified the need for more comprehensive onboarding and have cited missed opportunities for optimizing their transition to practice (Barrett & Wright, 2019; Hart & Bowen, 2016; Klein et al., 2021). In a study by Barnes (2015) of practicing NPs, receiving a formal orientation was positively correlated with and had a statistically significant association with improved role transition. Important and effective onboarding elements include mentoring, role clarification, needs and competency assessment, identification of resources and networks, leadership support, structure, and planning (Anglin et al., 2021; Bahouth & Esposito-Herr, 2009; Chouinard et al., 2017; Garcia et al., 2017). Purposeful onboarding can increase APPs job satisfaction, organizational engagement, and productivity, and should be made a high priority for institutions that employ APPs (Pittman et al., 2020). The onboarding period is a pivotal time for institutions to capitalize on the potential of its APP population. See Appendix D for a divided table of evidence that displays which reviewed articles address the need to have onboarding programs (focused on the problem), and which address the aspects of successful onboarding programs (focused on the solution).

### **Theoretical Model**

Meleis' transitions theory (Meleis, Sawyer, Im, Hilfinger-Messias, & Schumacher, 2000) was the theoretical framework used to guide this project (See Appendix E for a diagram representation). Meleis' theory supports that transitions are multifaceted and complex. Transitions can either be successful or unsuccessful and there are conditions that can promote or inhibit successful transitions (Barnes, 2015). A key application of this theory is that transitions occur over time and have many influencing factors including expectation, level of knowledge and skill, level of planning, the environment, and emotional and physical well-being (Schumaker & Meleis, 1994). Formal onboarding is being investigated as an environmental factor that can support successful transitions for APPs.

### **Translational Model**

The Ottawa model of research use (OMRU) (Graham & Logan, 2004) was the translational model for this project (See Appendix F for a diagram representation). The OMRU is a planned change theory that aims to effect change at the institutional rather than individual level (Graham & Logan, 2004). Within the OMRU, a knowledge-to-action process involves six key stages:

- identifying authorities, agents of change, and other resources
- establishing the evidence-base for the innovation
- assessing for barriers and facilitators in the environment
- monitoring knowledge translation
- monitoring innovation adoption
- evaluating outcomes of the innovation

The utility of the OMRU for this project comes from the tailoring of the innovation according to the identified strengths and barriers of the environment and adopters where it will be implemented. The OMRU is based on the fundamental assumption that any knowledge to action process will be dynamic and interactive (Graham & Logan, 2004). The toolkit was developed to be adaptable and able to be tailored to meet the needs of different APP roles and changing practice environments.

### **Methodology**

To achieve the purpose of this quality improvement project, an onboarding toolkit was created to improve role transition and integration of APPs at the NIH. The non-experimental design involved currently employed APPs being surveyed regarding both their previous experience with onboarding and the proposed toolkit. All APPs registered within the NIH email distribution list for their profession (NP or PA) received an invitation email that described the project and included links to both the baseline and follow-up survey and to the toolkit. Utilization of the email distribution lists, named the NP listserv and the PA listserv, was the most efficient way of reaching out to the largest number of APPs. At the time of project implementation, the NIH was continuing to observe COVID-19 precautions and requesting that all providers complete their duties remotely when possible. This ongoing requirement made it difficult to recruit APPs outside of electronic means. APPs were also utilizing the listservs more frequently due to their remote circumstances, which made the use of the listservs the best option for recruitment and intervention implementation. At the end of the first survey, the participants were given a random ID and had the option to be automatically redirected to the toolkit website. They could also access the toolkit via the link sent to their email. After reviewing and exploring the proposed toolkit, the participants used their assigned random ID from the baseline survey to



log in to the follow-up survey. The survey results will provide considerations for the future evaluation and advancement of the proposed program.

### **Participants**

Participants were recruited through convenience sampling methods. Established APP specific email distribution lists (listservs) in the NIH network were used to distribute project information. The listservs are used to communicate NIH-wide policy changes and other job-related information and are therefore not viewed as “spam” by APPs. The inclusion criteria were that the APPs were currently employed by one of the 27 NIH institutes and that they were either a NP or a PA. There were no exclusion criteria.

### **Setting**

The setting for this project was the NIH in Bethesda, MD. The implementation of the project intervention was completely technology based due in part to the ongoing pandemic and safety restrictions in place at NIH during the spring of 2021. During this time, all APPs who could work remotely were being requested to do so. Having all project requirements online, while convenient, was a barrier due to email overload and technology fatigue being experienced by many remote employees. To overcome the barrier of digital fatigue, the surveys and toolkit introduction video were kept to under 10 minutes each and the process was made as user-friendly as possible. Fortunately, the culture at NIH is one that values evidence-based practice and is overall accepting of inconvenience that may be experienced to achieve quality improvements. APPs were able to complete the participant requirements in one sitting if time allowed. Because there is no central APP leadership among the 27 institutes, information gathering to inform the project team during toolkit development was a challenge. This barrier was partially overcome by utilizing the professional networks of the APP project team members. However, another

important need was uncovered when it was difficult to gain access to any central data or resources regarding APP retention, current onboarding practices, or future needs for each institute.

### **Tools**

The Advanced Practice Provider Survey of Orientation/Transition to Practice (Klein et al., 2021) was used as both the baseline and follow-up survey for this project. Approval was granted by C. Klein and colleagues (personal communication, Dec. 16, 2020) to use and make contextual changes to the survey for this project. The baseline survey consisted of 17 questions focused on demographics, 50 Likert scale type questions (1=strongly disagree to 5= strongly agree, with a neutral response=3), and 4 free text questions to allow participants to expand or provide additional feedback. The follow-up version of the survey consisted of only 2 demographic items, the same 50 Likert scale items, and the same free text questions with modified wording about the proposed toolkit instead of the participant's actual orientation experience. Face validity was determined by the survey authors during their study *Perceptions of role transition into practice among advanced practice providers and physicians*. No other tests of reliability or validity had been performed on this tool. During data analysis for this project, the internal consistency of the survey was verified using Cronbach's alpha (baseline survey- 0.81, follow-up survey- 0.92), adding to the available data on its reliability. The survey is a recently developed tool and the only tool known to the project team lead to measure APP's orientation and transition to practice. See Appendix G for the original survey by Klein et al., 2021.

### **Intervention**

The intervention of this project was the development and dissemination of an onboarding toolkit to participating APPs. Evidence-based components such as a detailed and structured

orientation schedule, an identified onboarding liaison, a clinical mentor, a personal/professional mentor, network opportunities with APP leadership and colleagues, and in-depth information about the organization were included. Appendix H includes screen shots taken from the toolkit that demonstrate key features. Each component was represented within the toolkit as a template for the participant to understand what would be present and “live” if the onboarding program was adopted. The toolkit was created as an online public site for ease of accessibility and distribution. The project team lead created the toolkit website with input from 2 NP project team members who are also current employees at NIH. The onboarding toolkit includes a video review, recorded by the project team lead, that describes the components of the toolkit and helps participants to understand the purpose of the intervention and the rationale for elements of the site. To ensure intervention fidelity, the web-based toolkit was completed prior to the opening of the surveys and no changes were made after that point. The baseline and follow-up surveys were also not modified after the access links were sent out to potential participants. Both the surveys and website were monitored weekly by the project team lead to confirm that the function and availability of each was intact. See Appendix I for a process map outlining implementation of the intervention.

### **Data Collection**

The preintervention phase of this project involved development and finalization of all intervention materials. Obtaining approval from the survey authors to use the survey and make contextual changes, creation of the project team, development of the online toolkit, completion of the adapted survey within Qualtrics, development of the invitation email, and obtaining approval from listserv moderators was also done during the pre-intervention phase. The intervention phase began with sending the study introduction letter and links to the baseline

survey, follow-up survey, and toolkit website to the potential participants via the NP and PA listservs. The intervention phase lasted from April 15, 2021, through May 24, 2021. After the initial invitation email, the project team lead sent out an additional 3 email prompts to request that more APPs participate, and that those who had completed the baseline survey would complete the follow-up survey prior to the end date, which was announced in the initial email. The postintervention phase involved data analysis using Qualtrics and SPSS software. The data obtained from the survey results included demographic information, Likert scale response scores and qualitative feedback regarding orientation experiences and perceptions of the toolkit. All responses were anonymous and linked by the random ID that was used to access the follow-up survey.

### **Cost Analysis**

There were no financial costs of this project. The online platform, Qualtrics was used for the surveys and baseline statistical analysis of the results. At the time of this project, Messiah University had a license agreement with Qualtrics, and no additional fees were incurred by the project team for its use. The cost of this project for the project team and project team lead was the time spent developing the online surveys and proposed toolkit. The time spent by the participants on taking the surveys and reviewing the toolkit was another cost. Each survey was estimated by Qualtrics to take 9 minutes to complete, and the toolkit review video is less than 10 minutes long. It was therefore estimated that the time to complete both surveys, watch the toolkit video and explore the website would be approximately 30-45 minutes.

### **Timeline**

The timeline for project implementation spans from December 2020 through August 2021. Project development, resource identification, and approval requests began in December

2020. IRB approvals and exemption determinations were initially sought in February and March 2021. The project intervention phase began in April 2021 and continued through May 2021. Data analyses and evaluation, manuscript completion, and reporting of results occurred from June 2021 through August 2021. Project time points are displayed in a GANTT chart in Appendix J.

### **Ethics and Human Subjects Protection**

Messiah University IRB exemption was obtained in March 2021 with a determination that this project met quality improvement standards and did not require a full IRB review. A “Non-Human Subjects Research” application for quality improvement and quality assurance projects was submitted to the IRB Operations office at NIH and was also approved in March 2021. Through Qualtrics, all participant data was untraceable, and all survey results were reported anonymously. Participants’ identifiable information was never available to project team members and was not stored in Qualtrics. Informed consent is not required as completion of the surveys by the participants provides implied consent. There was no risk to the participants of this project.

## **Results**

### **Analysis and Evaluation**

#### ***Quantitative Data***

The surveys used in this project generated both quantitative and qualitative data from the participants using a Likert scale format and open-ended questions. The data were obtained using the survey platform Qualtrics and analyzed using IBM SPSS statistics version 26. The survey results were divided into 3 main parts for analysis: (1) demographics, (2) Likert scale orientation questions, and an (3) open-text feedback section. The Likert scale questions were further divided into 4 categories: (1) activities performed during the orientation experience, (2) perceptions of

clinical confidence after the orientation, (3) perceptions of professional confidence after the orientation, and (4) perceptions of systems and organizational skills after the orientation. Descriptive and inferential statistics were used to analyze the survey data. Demographic data, which was only included on the baseline survey, was analyzed with frequency distributions. The outcome variable, APP Survey of Orientation/Transition to Practice, met the assumptions for parametric testing of paired variables, and was analyzed with a dependent sample t-test. The open-ended responses were reported as descriptive information.

The surveys were sent to 269 APP email addresses (214 NPs and 55 PAs) and 32 completed both surveys in their entirety, resulting in a response rate of 12%. Of the 32 participants, the majority were female (n=27), middle aged, NPs (n=27), and mostly family nurse practitioners (n=18). The age range of the participants was 32 years to 70 years, and the years of APP experience ranged from 2 to 25 years. Most participants were masters prepared (n=27) and 3 were doctoral prepared. Most participants responded that they did not receive a formal orientation (n=21) to their current role. See Appendix K for a table containing key participant demographic information.

Baseline and follow-up mean scores for all survey items were compared. The questions were analyzed by category for the highest and lowest mean scores and the differences between the baseline and follow-up scores. For the activities during orientation category (see Appendix L for all survey item scores in this category), the highest mean score was for the follow-up question "I had an identified preceptor" (M=4.56, SD=0.504). The lowest mean score for the baseline clinical competence after orientation category (see Appendix M) was for "I feel confident in performing procedures" (M=3.97, SD=0.74). The "clinical" page of the toolkit website includes a skills checklist that would clarify the types of procedures necessary for that

APP's role, and provide a central place for documenting practice and eventual sign-off by the APP and preceptor, indicating that the procedure could be performed independently by the APP. Having a skills competency assessment has been an integral part of exemplar APP onboarding programs (Goldschmidt et al., 2011; Langley, Dority, Fraser, & Hatton, 2018). "I clearly understood my role as an APP within my area of practice" had the highest mean score ( $M=4.38$ ,  $SD=0.609$ ) for the professional competence category (see Appendix N). Within the systems and organizational skills category (see Appendix O) the highest mean score was for the question "I felt like part of a community of APPs" ( $M=4.34$ ,  $SD=1.146$ ). An identified preceptor, understanding the APP role, and feeling like part of a community of APPs were the highest scored survey items on the follow-up survey. These topics had been prioritized in the development of the toolkit and reflect APP onboarding needs represented in the literature (Anglin et al., 2021; Bahouth & Esposito, 2009; Sargent & Olmedo, 2013; Sullivan-Bentz et al., 2010).

The proposed toolkit included content aimed at improving the APP's sense of community and engagement with their organization. Survey items #4-8 in the systems and organizational skills category measured whether the participants perceived having a better understanding of the strategic goals, mission and values, reporting structure, and credentialing and privileging at the organization and whether they perceived that the proposed program would improve community among APPs. Most participants scored these items as agree or strongly agree on the follow-up survey. See Appendix P for a bar graph depicting the scores for items #4-#8 on both the baseline and follow-up surveys.

The mean scores for all categories of both the baseline and follow-up surveys are reported in Appendix Q. To compare the APP's perceptions of role transition before and after viewing the toolkit, a dependent sample t-test was performed (Appendix R). There was a significant difference in the orientation and role transition total scores after the toolkit review ( $M=204.3$   $SE=3.8$ ) compared to before ( $M=163.2$   $SE=3.1$ );  $t(31) = 8.07, p < .001$ . All categories were statistically and clinically significant. Three out of the four question categories had a large effect size (See Appendix R).

One expected outcome for this project was that a structured onboarding would be perceived as more adequately preparing APPs for independent practice. The result of the Pearson correlation on the follow-up survey questions "my orientation was structured and followed a clear timeline" and "my orientation adequately prepared me for practicing as an APP" indicated that there was a significant positive correlation between a structured program and perceptions of adequate preparation ( $r(31)=.53, p < .002$ ).

### **Qualitative Data**

Both the baseline and follow-up surveys concluded with 4 open-text questions. With the open-text questions, the participants were asked to provide their thoughts on what went well during their actual orientation, what they saw as strengths of the toolkit, what more was needed to improve the orientation process for APPs at the project site, and for any additional feedback they chose to provide. Due to the small sample size and missing qualitative data from some participants, true qualitative analysis and data saturation was not achieved. There were several prominent themes that emerged from the open-text responses. When responding to the question "what went well during your orientation?" several participants responded that they did not receive a formal orientation at all and therefore could not reflect on what had gone well. The



most frequent responses when asked what could be done to improve onboarding were the desire for structure, mentorship, role clarification, and community among APPs in the organization. This feedback mirrors that of previous studies focused on the needs of new and transitioning APPs (Klein et al, 2020; Morgan et al., 2020; Sargent & Olmedo, 2013; Sullivan-Bentz et al., 2010). Examples of open-text responses from this project include the following:

- “Incorporating structured preceptorship and mentorship would be very helpful. A structured, evidence-based orientation program would be very nice to help APPs understand their role”
- “Having an official orientation and having connections with other similar NP or PA colleagues [would have improved my orientation]”
- “I think having a structured timeline would help me with my goals and identifying areas I need to study or review to prepare to see the complex patients”
- “It would have been helpful to meet other NPs in a setting that allowed me to introduce myself and to learn about other NPs and their specific roles”

The most frequent strengths named for the toolkit were that it was structured, collaborative, and included adequate support for the APP. In response to the question “what did you see as strengths of the proposed onboarding program and toolkit?” greater than 50% (N=17) of the participants cited the toolkit’s structured timeline. Nearly 40% (N=12) of the participants named “structure” as a needed improvement to their current orientation. This finding further supports the data collected by Klein et al. (2021) that 61% of surveyed APPs experienced lacking structure and unclear timelines during their orientation.

## Discussion

Overall, the APPs' perceptions were that orientation and role transition would be improved with the use of the proposed toolkit. Both the quantitative and qualitative data from this project support the need for comprehensive, structured onboarding that integrates evidence-based components such as mentorship and role clarification. The statistically significant improvement in the scores of perceived clinical, professional, and organizational competencies supports the hypothesis that perceived role transition would be improved by the proposed toolkit. A major strength of this project was that it incorporated findings from several previous studies to create one evidence-based tool. This project had several important limitations to consider. The primary limitation of this project is that participants were not able to experience the proposed onboarding program but instead were asked to use the toolkit to speculate about what the experience would have been like. Having been able to experience the proposed program would have allowed the APPs to reflect more accurately upon its impact. However, the quality of the feedback received demonstrates the extent to which the APPs critically and honestly evaluated the toolkit to the best of their ability. Of the 269 APPs invited, only 32 completed the project requirements. A larger sample size would have increased the generalizability of the project results. Because only 5 of the 32 participants were PAs, this project may not provide a comprehensive representation of the specific needs of that role. Also, the number of years that the participants had been in their current APP role ranged from 1-20 years. Some participants may have forgotten significant details about their onboarding or had a skewed memory of its challenges and successes. Another limitation is that the project lead was an employee at the project site and therefore the participants may have provided favorable responses in support of the project and project team. Because the project components (baseline survey, toolkit review,

and follow-up survey) could have been completed in one sitting, the participants' familiarity with the survey may have influenced their viewing of the toolkit and follow-up survey responses.

Like other organizations that have begun integrating APPs in increasing numbers and capacities, NIH has struggled to provide an adequate program to optimize the APP's transition period. The development of a formal and comprehensive onboarding program for APPs will align the NIH with the Institute of Medicine's recommendation to use APPs to the full extent of their education and license (Institute of Medicine, 2010). The anticipated results of improved perception of role transition with the proposed onboarding toolkit provides a foundation for the implementation of an onboarding program. NIH is a world-renowned institution that prizes research and evidence-based practices. Other institutions may be more likely to adopt onboarding programs for APPs if NIH prioritizes them. This project will add to the growing body of knowledge that demonstrates the significant impact that comprehensive onboarding can have on the integration and role transition of APPs.

### **Conclusion**

Onboarding is a practice supported in the literature as a means of successfully integrating APPs into new work environments and new roles. To apply this evidence, an onboarding toolkit was developed for the APPs employed at NIH. The toolkit used methods and components of onboarding that have been successful in other programs as well as institutional, local, and national requirements. By addressing this gap between evidence and practice, the job satisfaction, role clarity, team dynamics, connectedness, and patient care of the APPs can be improved, making NIH a better employer of APPs with better patient outcomes.

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## Appendix A

### SWOT analysis

#### Strengths (Internal):

- NIH employs many APPs
- Employs both NPs and PAs
- Onboarding already named as initiative by NIH leadership
- Providers motivated by research outcomes to provide practice guidance
- Extensive databases and professional resources available
- Research is valued and facilitated when possible
- Evidence-based practice is emphasized and encouraged

#### Weaknesses (internal):

- 27 separate institutes that hire APPs
- Different APP expectations within different teams and institutes
- Lacking shared governance model for APPs
- No formal onboarding currently exists for any specialty
- Confusion between federal and contract role differences

#### Opportunities (external):

- Creating a standard of practice for onboarding APPs
- Continued research regarding role transition, onboarding, and turnover for APPs
- Improved expectations for other providers

#### Threats (External):

- Other research hospitals already provide onboarding programs for APPs
- Lapse in federal funding can impact the budget for allowing a longer onboarding period



**Appendix B**

**PRISMA Diagram (Outlining Literature Review Methods)**

