Nurse Practitioner residents' perceptions of competency development during a year-long immersion in Veterans Affairs primary care

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ABSTRACT

Background: Nurse Practitioner (NP) Postgraduate Residency programs are rapidly expanding. Currently, little is known about trainees' self-perceptions during these experiences.
Purpose: Describe NP residents' perceptions of their strengths, areas for improvement, and goals while participating in the Veterans Affairs Centers of Excellence in Primary Care Education NP Residency program.
Methods: NP residents responded to open-ended questions at three time points across their training year. Responses were analyzed using inductive and deductive approaches.
Findings: NP residents self-reported strengths in patient-centered care and interprofessional teamwork. They identified clinical skill acquisition as the major area for improvement. Their short- and long-term goals focused on personal and professional growth.
Discussion: These results suggest NPs prioritize clinical skill acquisition during a primary care residency. In contrast, leadership and performance improvement skills did not capture their attention. When aggregated at the programmatic level, assessments identified opportunities to improve the NP Residency program curriculum.

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Some new graduate nurse practitioners (NPs) are opting to participate in postgraduate training such as residency or fellowship programs (Martsolf, Nguyen, Freundt, & Poghosyan, 2017; Taylor, Broyhill, Burris, & Wilcox, 2017). These programs are rapidly growing nationally in a variety of settings and specialty areas (Martsolf et al., 2017; Rugen, Speroff, Zapatka, & Brienza, 2016; Schofield & McComiskey, 2015; Thabault, Mylott, & Patterson, 2015; Varghese, Silvestri, & Lopez, 2012; Wallace, 2013). Zapatka, Conelius, Edwards, Meyer, and Brienza (2014) found that new NP graduates choose to participate in postgraduate training programs for mentorship and as a bridge to practice. They also describe the residency program as a safe space and supportive environment. However, little is known about new NPs' self-perception of their strengths and goals during a residency and how these evolve during the training year. To address this gap, we explored NP residents' perceptions of their professional development in a national, multisite NP Residency training program. The purpose of this paper is to describe NPs' perceived strengths, learning needs, goals, opportunities, and obstacles while participating in the Veterans Affairs (VA) Centers of Excellence in Primary Care Education (CoEPCE) NP Residency program and how these changed over time. We provide additional insight into the gaps from training to practice and suggest curricular revisions for postgraduate training programs.

The Institute of Medicine (2010) report, *The Future of Nursing: Leading Change, Advancing Health*, identified the need for transition-to-practice programs for those completing an advanced practice nursing degree and recommended the establishment of residency programs. In response to this recommendation, the Department of Veterans Affairs, Office of Academic Affiliations (OAA), funded the first NP Residency program in 2011. Since then, OAA has funded a total of 17 NP Residency programs; seven in the VA CoEPCE (https://www.va.gov/oaa/rfp_coe.asp) and 10 within the VA Nursing Academy Partnership program (https://www.va.gov/oaa/vanap/partners.asp). These VA programs were developed to support new graduate NPs' transition-to-practice, fulfilling VA's statutory mission to educate the next generation of health-care professions for VA and the nation.

How real is the transition-to-practice gap? In 2012, 698 NPs responding to a national survey about preparation for practice reported feeling least prepared as new graduates in the management of multiple health concerns, complex problems, and mental health concerns (Hart & Bowen, 2016). Ninety percent of the survey respondents were either extremely or somewhat interested in a postgraduate NP Residency program and 77% would have been extremely or somewhat likely to have applied for a postgraduate program. Martsolf et al. (2017) identified 68 existing NP Residencies or fellowships; 89.7% were 12 months in length, the largest proportion was in primary care (38.2%), and the programs were located predominantly in the Northeast, South, and West, and least in the Midwest. From these two studies, we know

that NPs feel they need additional training upon graduation and are interested in postgraduate training, and that these opportunities do exist in a variety of settings and geographical areas. Still, little is known about NP residents' self-perceived areas of strength, areas for improvement, and their goals in the first year as they transition to independent practice.

Methods

Ethical Considerations

This project was categorized as program evaluation in accordance with the Veterans Health Administration Handbook 1058.05 where information generated is used for business operations and quality improvement, and determined to be exempt from institutional review board oversight.

The NP residents were made aware of this evaluation strategy upon accepting the residency position and were informed that the data are used for guiding their professional development and also for informing program effectiveness nationally.

Program Setting and Context

The VA CoEPCE NP Residency program is embedded within interprofessional primary care learning environments that are located at the Boise, Cleveland, San Francisco, Seattle, and West Haven VA facilities. The primary goal of this 1-year full time CoEPCE NP Primary Care Residency is the attainment of competency to work in, to lead, and to improve team-based primary care. Interprofessional learning and collaborative practice occurs with physician residents, postdoctorate pharmacy residents, and postdoctorate psychology fellows. Each site was given the freedom to design, to implement, and to prioritize learning objectives by local experts; however, all sites were mandated to focus on the educational domains of shared decision-making, sustained relationships, interprofessional collaboration, and performance improvement. Specific details regarding the CoEPCE NP Residency program are published elsewhere (Rugen, Dolansky, Dulay, King, & Harada, 2017; Rugen et al., 2016).

NP Residency Competency Assessment Tool

The intent of the competency assessment tool was to promote standardization of NP resident assessment across the CoEPCE sites and provide local mentors with information to guide formative assessment discussions with individual NP resident. The tool has two sections: (a) a list of 69 competencies within seven domains rated on a Likert scale and (b) seven open-ended questions intended to prompt self-reflection (Table 1). Assessments are completed at 1 month, 6

1. List two things you do well
2. List two things you would like to improve
3. Set two short-term goals that can be achieved in the next 3 months
4. Set one long-term goal to achieve by the end of the residency and beyond
5. Describe any potential opportunities/obstacles you might encounter as you try to reach these goals
6. Describe how you know if you have achieved these goals
7. Describe your strategies for achieving these goals

months, and 12 months of the year-long program. The development of the competency assessment tool and quantitative analysis of the 69 competency items are published elsewhere (Rugen et al., 2016, 2017). This study focuses on the open-ended questions shown in Table 1.

Additionally, we collected demographic information from the NP residents including gender, type of NP program (BSN to MSN, graduate entry or DNP), years of nursing experience prior to NP Residency, and prior CoEPCE NP student experience, if any.

Participants

There were 38 NP residents who participated in the VA CoEPCE NP Residency program across five centers from 2012 through 2015.

Data Analysis

Our analysis of the open-ended questions is limited to the first five questions in Table 1. Our analysis was a two-step process; first we coded the open-ended responses and then the codes were mapped to the NP Residency competency assessment tool. For 2012 to 2014, NP resident responses were collected on paper or fillable word documents at local sites. To maintain integrity between questions, point in time of collection, and qualitative responses, the national NP consultant (K.R.) manually transcribed responses to questions into an Excel 2010 spreadsheet. In 2015, we developed a web-based data collection portal and responses were entered directly into the portal. All responses were saved as pdf files and uploaded to Atlas TI version 7.5.10 for qualitative analysis (Atlas.ti., 2017 Qualitative Data Analysis Berlin, Scientific Software Development). One author (N.H.) inductively coded responses from the first four questions using conventional content analytic procedures (Hsieh & Shannon, 2005). After reading through each of the responses, open codes were assigned to each response to capture the general nature of the response, the corresponding survey question, and time point of 1, 6, or 12 months. For example, the response "identifying appropriate situations for using shared decision-making and motivational interviewing and skillfully using both techniques" was assigned four codes

"shared decision-making," "motivational interviewing," "question 1: two things I do well," and "12-month time point."

To reduce the codes to a manageable number for analysis, the full list of codes with example data elements was reviewed and extensively discussed by all authors and similar codes were grouped together to develop a code book. For example, the codes "shared decision-making," "patient goal setting," and "patient self-management skills" were grouped together based on similar meaning to develop this code group named "goal setting." This process resulted in 26 codes.

The next step was to conduct analytical coding to map each of the 26 codes to the seven NP competency tool domains. Two authors (K.R. and F.H.), who are practicing NPs, individually mapped the codes to the NP competency tool domains and then, together with the CoEPCE evaluation leader (N.H.), held extensive discussions until consensus was reached on the final mapping of codes to domains. There were three code groups that did not fit into any existing competency domain. In consultation with an education researcher (J.B.), we created an eighth competency domain named "professional development" to capture codes such as "efficient," "time management," "find a job," and "be an independent provider." The framework used to map the codes to the competency domains is shown in Table 2.

Using the resulting code group-competency mapping scheme, three authors (N.H., K.R., and F.H.) independently applied the mapping scheme to the same randomly selected 20% sample of NP resident responses. We initially achieved moderate agreement (Kappa = 0.54) (Landis & Koch, 1977) and continued discussion of differences until we reached agreement. N.H. then applied the finalized mapping scheme to the entire dataset.

We created visual displays of the data using histograms to explore the number of responses to questions 1 to 4 (shown in Figures 1–4) assigned to each competency domain in each time period. We then reviewed these data and responses to question 5 about *potential opportunities and obstacles encountered* to identify representative quotes within each question in each time period (shown in Tables 4–7).

Results

Sample Characteristics

Between 2012 and 2015, 38 NP residents enrolled at the five VA CoEPCE sites and 36 completed the program. Two NP residents left the program at different time points for non–performance-related issues; therefore, the number of NP residents in the program changed over time; over the aggregated 3 years, there were 38 NP residents in the program at 1 month, 37 at 6 months, and 36 at 12 months.

Table 2 – Framework for Mapping Code Book to Competencies

Competency Domain	Domain Definition	Codes (n = 26)	Examples of Responses Included in Code
Clinical competence	Developing competence to assess, diagnose, treat, and manage health conditions that are commonly seen in primary care settings	Management skills	Chronic disease management; diabetes management; medication management; triage; rheumatic disorders
		Documentation	Documentation; computer charting
		Clinical assessment skills	History and physician examinations; electrocardiogram interpretation; orthopedic physical examination; x-rays; cardiac heart sounds
		Patient presentation	Case presentations; presenting to preceptors
		Clinical decision-making	Differential diagnosis; sound decision-making
		Clinical competence	Competent
Leadership competence	Developing competence to lead team huddles, case conferences, team meetings, quality improvement projects, shared medical/group appointments, and application of leadership strategies that support collaborative practice and team effectiveness	Leadership	Leadership
		Mentoring and precepting	Mentoring; precepting
		Teaching	Develop new class; develop training curriculum; patient education
		Scholarly activity	Research; scholarly activity
Interprofessional collaboration	Competence to develop own professional identity and ability to explain one's role, use of respectful language and understanding and appreciation of contribution of other team members, function as a resource to other professions, maintain open communication with team members, safely transition patients among team members, seek feedback from team members, constructively manage disagreements with team, and engage in continuous professional and interprofessional development to enhance team performance.	Coordination	Care coordination with other team members; staff relationships; handoffs; set time to learn from others
		Feedback	Seek feedback from preceptors; seek assistance and feedback from other sources; constructive feedback
Patient-centered care	Competence to communicate with patients between office visits by telephone, secure messaging and telehealth monitoring; elicit patient's values, preferences, and cultural beliefs; identify, accommodate, and customize care for patients with language, cognitive, functional, or cultural barriers; assess and provide education to empower patients to self-manage their chronic conditions; track and coordinate care by ensuring follow-up on messages, tests, consults, and care at outside facilities; engage other health professionals in shared patient-centered problem-solving; and use of motivational interviewing to help change health related behaviors	Patient-centered communication	Effective communication with patients; respectful patient interactions; patient rapport; patient engagement
		Patient follow-up	Attention to detail and follow through
		Patient self-management	Self-management skills

Table 2 – (*Continued*)

Competency Domain	Domain Definition	Codes (n = 26)	Examples of Responses Included in Code
Shared decision-making	Competence to use active listening skills and open-ended question during a patient visit, counsel and support patients in their self-management of chronic diseases, facilitate patient's participation in health-care decisions using decision aids, engage patient in advanced care planning, activate community resources for patients or populations needs, engage patients as care team members in tracking and coordinating care and share accountability with other professions, patients and communities for outcomes relevant to prevention and health care	Goal setting Listening Effective resource use	Patient goal setting, shared decision-making, patient self-management skill Active listening to patient and team Identify and use available resources
Sustained relationships	Competence to devise, follow, review, and adjust a longitudinal care plan to meet the patient's needs; develop and sustain a respectful and trusting relationship with the clinic staff, the faculty, their peer learners and their patients/families; give timely, sensitive instructive feedback to others about their performance on the team; and respond respectfully to feedback from others	Relationships Constructive communication Caring	Creating trusting relationships; encourage to bring out the best in others Respectful interactions Kind with patients
Performance improvement	Competence to access and interpret clinic performance data, improve care through Plan-Do-Study-Act cycles, perform root cause analyses and reflect upon critical incidents (medical error, near miss, preventable emergency room visits, or readmissions), query registries to determine the health status and care needs of the entire practice and/or specific populations of interest (i.e., all diabetic patients), and reflect on individual and team performance and introducing strategies for improvement	Patient safety Quality improvement	Clinical care that makes patients feel safe; patient safety Quality improvement projects; panel management
Professional development	Competence to identify internal attributes needed to transition to independent primary care provider. Includes references to elements of personal growth as a practitioner, such as organizational skills, improving efficiency, managing time, dealing with conflict	Personal characteristics Career/employment Independent practitioner	Time management; efficient; task management; organized; confidence; work–life balance Job; career building; obtain permanent employment in academic medical center See patient autonomously with minimum intervention from preceptor; autonomous practice; independent practice

Table 3 – Number of NP Residents by Year and by Site			
Site/Year	2012–2013	2013–2014	2014–2015
Site A	1	2	4
Site B	0	2	4
Site C	3	3 (1 left after 6 months)	5
Site D	0	0	1
Site E	4 (1 left after 1 month)	4	5
Total	8	11	19

NP Residency enrollment and site participation increased over time and is displayed in Table 3. Ninety-six percent of the NP residents who enrolled in the program over the 3 years completed the competency tool at 1 month (N = 37/38), 81% completed the tool at 6 months (N = 30/37), and 76% at 12 months (N = 27/36). The response rate was lowest at 12 months as some NP residents graduated in the program without completing the competency tool.

The majority of the NP residents were female (84.2%), and 50% had prior training in a CoEPCE as an NP student. NP residents were either graduates of a Bachelor of Science in Nursing (BSN) to Master of Science in Nursing (MSN) program (55.2%) or a graduate (masters') entry into advanced practice nursing program (44.8%). The mean years of Registered Nurse experience prior to NP Residency was 5.46 years (Rugen et al., 2017).

Aggregated NP Resident Responses Mapped to Competency Domain

Aggregated, categorized responses to open-ended questions across three time points are shown in Figures 1 to 4 and representative examples of quotes by NP residents are shown in Tables 4 to 7. We emphasize that the histograms display code frequencies to identify general areas of emphasis and patterns within participants' responses. This method is often used in qualitative data analysis to further identify themes with greater clarity (Sandelowski, 2001). We caution the reader not to overinterpret the numbers, or to compare response frequencies across time points or domains as they represent the results of coding the NPs responses, which were not mandated to be answered and were limited by the question (i.e., "List two things you do well," "List one long-term goal"). Rather, we provide these visual displays as an interpretive lens from which we cautiously infer general areas of emphasis among our participating NP residents.

Figure 1 shows distribution of NP resident responses of what they thought they *do well* across the three survey time points. Table 4 shows representative examples of quotes by NP residents as what they thought they were *doing well* throughout the residency program.

At the beginning of the program, NP residents reported perceived strength in delivering patient-centered care with no mention of leadership or performance improvement as skills they did well as new graduates from academic NP programs. Little change in the focus of their self-reported strengths was noted in subsequent time periods, although leadership skills were occasionally mentioned. The patient-centered care domain declined over time but was still high at 12 months. We believe the NP residents shifted their focus elsewhere, not that their strength in this area diminished.

Figure 2 shows distribution of NP resident responses of what they *would like to improve* across the three time points. Table 5 shows representative examples of quotes by NP residents as what they *would like to improve* throughout the residency program.

At all data collection points, the general focus of the responses for things NP residents *would like to improve* fell into the domains of clinical and professional development. There were no responses in the domains of patient-centered care, shared decision-making, and sustained relationships. Leadership and performance improvement were mentioned infrequently.

Figure 3 shows distribution of NP residents' *short-term goals* across the three survey time points. Table 6 shows representative examples of quotes by NP residents' *short-term goals* in the next 3 months of the residency program (or upon completion of the residency program).

These data confirm that the NP residents' *short-term goals* focus on growth as clinicians and on qualities to develop that would help them to achieve those goals,
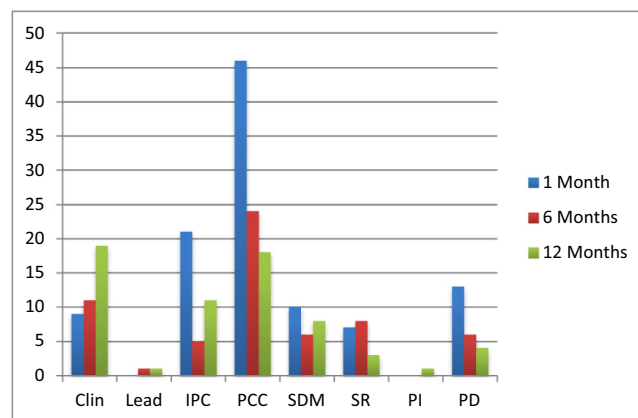
Figure 1 – List two things you do well. Clin, clinical; Lead, leadership; IPC, interprofessional collaboration; PCC, patient-centered care; SDM, shared decision-making; SR, sustained relationships; PI, performance improvement; PD, professional development.

Table 4 – Representative Quotes: List Two Things You Do Well			
	1 Month	6 Months	12 Months
Clinical	"History and physical examination"	"I feel I do pretty well at getting a precise and pertinent HPI for my patients"	"Chronic disease management"
Leadership	None	"Teaching with NP residents and team"	"Provide weekly feedback to NP student regarding patient care and clinical skills"
Interprofessional collaboration	"Working as a team player among other disciplines within the patient's health-care team"	"Working with interdisciplinary teams to improve longitudinal care for patients with chronic pain"	"Active member of team listening to peer, preceptors, attending, team members"
Patient-centered care	"Building patient rapport"	"Patient engagement and follow-up"	"Empowering patients to make the needed changes from within"
Shared decision-making	"Endeavoring to understand their (patients) vantage points and work with them to create goals for care and general health"	"Utilizing motivational interviewing and shared decision-making during all types of patient encounters"	"Patient goal setting"
Sustained relationships	"Interacting with patients with courtesy and respect"	"Develop trusting relationship with patients"	"Bring out the best in others"
Performance improvement	None	None	None
Professional development	"Motivated, driven"	"Work hard, focus daily on time management, continue to learn and read outside of work"	"Increased confidence in patient counseling and physical examination skills"

Note. HPI, history of present illness; NP, Nurse Practitioner.

which are consistent with the things they *would like to improve* responses. Leadership and performance improvement are identified by a few of the NP residents; otherwise, there is little focus on the other competency domains.

Figure 4 shows distribution of NP residents' *long-term goals* across the three survey time points. Table 7
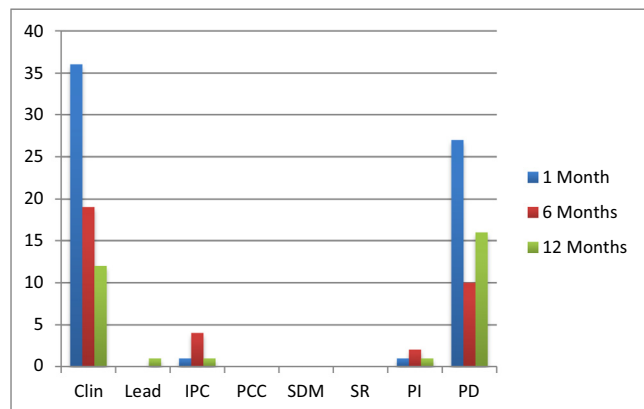
Figure 2 – List two things you would like to improve. Clin, clinical; Lead, leadership; IPC, interprofessional collaboration; PCC, patient-centered care; SDM, shared decision-making; SR, sustained relationships; PI, performance improvement; PD, professional development.

shows representative examples of quotes by NP residents of *long-term goals* they would like to achieve by the end of the residency program.

Although we are tentative in our interpretation due to small numbers, these data suggest that clinical and professional development continue to be the NP residents' focus as long-term goals. Some NP residents responded that a long-term goal is developing skills to be a clinical preceptor. They identified the need for lifelong learning with continued knowledge acquisition to be a competent provider as well as the need for a work–life balance.

For the question *describe any potential opportunities/obstacles you might encounter as you try to reach these goals*, we did not map the responses to the competency domains as the responses were applicable to goal achievement across domains. Table 8 shows representative examples of quotes by NP residents of potential opportunities/obstacles they encountered. The NP residents perceived mentorship and exposure to various clinical settings and preceptors as important affordances for achieving their goals. They identified the major obstacles as being lack of time, knowledge, and confidence.

Since clinical competency was the most frequently perceived area of focus, we wanted to investigate the NP resident responses further. In Tables 9 and 10, the open codes and the number of times the code was reported for *list two things you do well* and *list two things you would like to improve* mapped to the clinical competency domain are displayed.

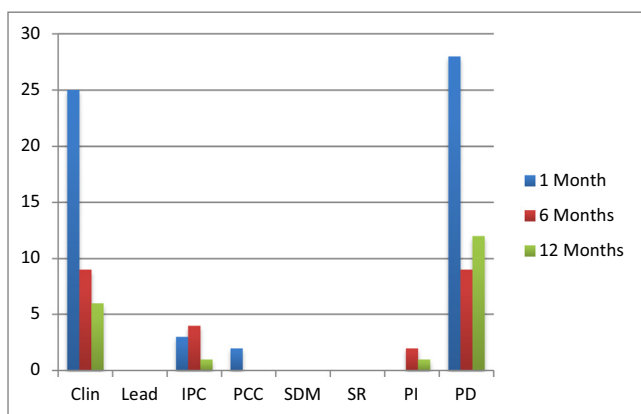| Table 5 – Representative Quotes: List Two things you would like to Improve			
	1 Month	6 Months	12 Months
Clinical	"I would like to improve my ability to manage diabetes, as I still do not feel confident with this on a regular basis"	"Further master of knowledge of broad base of chronic/acute conditions"	"I would like to still build on my knowledge of pathophy(siology)"
Leadership	None	None	"Continue to improve my leadership/teaching and public speaking skills"
Interprofessional collaboration	"Handoff and report with presenting patients"	"Coordination and communication with practice partners"	None
Patient-centered care	None	None	None
Shared decision-making	None	None	None
Sustained relationships	None	None	None
Performance improvement	"I would like to improve my quality improvement knowledge and understanding of the direct correlation between quality improvement, evidence-based medicine"	"Panel management familiarization with practice"	"Improve panel management outcomes based on QI skills"
Professional development	"Seeing patients efficiently, being on time by the end of a clinic day"	"Time management"	"Sustain a healthy work–life balance"

Note. QI, quality improvement.

In the first month, the NP residents perceive they are good at basic clinical skills of obtaining a "history and physical examination," by 6 months their skills become more sophisticated with progression to "pertinent and precise HPI (history of present illness)," and at 12 months they perceive they are good at the complex skill of "chronic disease management." Similarly, in the responses to *things you would like to improve*, the NP residents move from procedures of clinical practice such as data gathering (i.e., "learn how to identify heart murmurs" and "musculoskeletal examination") early in the program and transformed over the year into more global skills, such as clinical reasoning and complex care

Figure 3 – Set two short-term goals that can be achieved in the next 3 months. Clin, clinical; Lead, leadership; IPC, interprofessional collaboration; PCC, patient-centered care; SDM, shared decision-making; SR, sustained relationships; PI, performance improvement; PD, professional development.

skills (i.e., "build differential diagnoses for every new problem" and "continue to develop evidence-based knowledge of chronic disease management").

Discussion

The goal of this qualitative study was to explore NP residents' self-perceived areas of strength and improvement, goals, opportunities, and obstacles in the first year as they transition to independent practice. We identified distinct patterns in the way they described their strengths and learning needs while participating in a year-long residency program designed to support their transition to independent practice. These NPs arrived to residency training with perceived strengths in patient-centered care, which persisted over time. They almost exclusively focused on improving their clinical competence and attributes they associate with developing professional competence for successful independent practice. These findings suggest an additional year of training designed as immersion in supervised clinical practice provided value by giving NP residents the time and mentorship to address their perceived gaps in skills to prepare for independent practice.

It is not surprising that NP residents perceived clinical competence as an area of strength and also an area to improve (see Tables 9 and 10) as this is the traditional marker of independent NP practice. In response to things they *do well*, over time, NP residents more frequently mentioned clinical skills. In response to what they would *like to improve*, the bulk of the NP resident comments were related to developing clinical skills/competence. We interpret this as the NP residents seeing

Table 6 – Representative Quotes: Set Two Short-Term Goals That Can Be Achieved in the Next 3 Months

	1 Month	6 Months	12 Months
Clinical	"List 5 possible differential diagnoses for a patient complaint"	"Insulin management"	"Differential diagnosis"
Leadership	"Precepting NP students"	"Pick a topic for my APN conference presentation and begin gathering information on it"	"Develop chronic pain management team that utilizes full scope of APN skills"
Interprofessional collaboration	"Check in with team members real-time at least 80% of the time to close the loop and make sure that communication is clear, and to get feedback from team members on what I have delegated/asked"	"Learn from the pharmacist"	None
Patient-centered care	"Patient follow through"	None	None
Shared decision-making	None	None	None
Sustained relationships	None	None	None
Performance improvement	None	"Revise and plan new personal QI project with PACT RN"	"Start QI projects at new position"
Professional development	"Improve my timeliness by setting the agenda (and sticking to it) in at least 80% of my visits for the next month"	"Efficiency"	"Manage a full patient load"

Note. APN, Advanced Practice Nurse; NP, Nurse Practitioner; QI, quality improvement; PACT RN, Patient Aligned Care Team Registered Nurse.
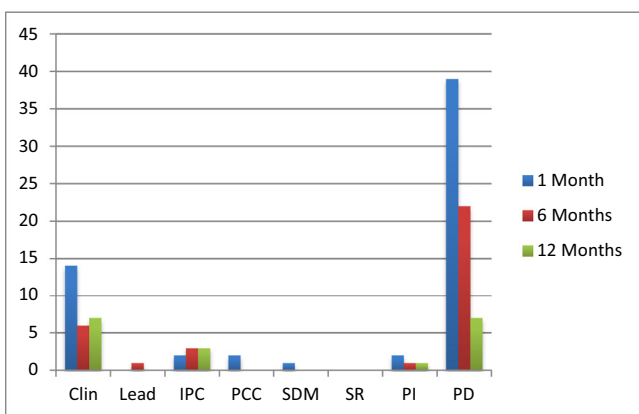
clinical skills/competence as foundational when compared to other skills such as leadership or performance improvement. This self-perception of need to improve clinical competence aligns with Brown and Olshansky's (1997) NP transition theory in which NPs in their first year increase their competence and confidence in clinical skills and are not ready for acknowledging system issues until later. When compared to our quantitative results of competency ratings in the first month, we found that the clinical competency domain was rated low by both mentor and NP resident for common

Figure 4 – Set one long-term goal to achieve by the end of the residency (or beyond). Clin, clinical; Lead, leadership; IPC, interprofessional collaboration; PCC, patient-centered care; SDM, shared decision-making; SR, sustained relationships; PI, performance improvement; PD, professional development.

conditions essential for primary care providers. Over the residency program, these ratings significantly progressed to where the NP residents were independently managing common primary care conditions by 12 months (Rugen et al., 2017).

The areas NP residents would *like to improve* also focused on the development of practice management skills and work–life balance. Examples include timely documentation and efficiency in completing patient encounters. These reflect the development of self-confidence as a clinician/primary care provider.

The NP residents' *short-term goals* were mainly identified in the clinical competency and professional development domains, which are consistent with the areas for improvement. In the 12-month responses for short-term goals, it was exciting to see the goals for their new position as a primary care provider included "developing a chronic pain management team" and "starting QI projects at new position." Similarly, the responses to the *long-term goals* focused on clinical competency and professional development.

Interpreting these findings through the lens of the expectancy–value theory (EVT) of motivation helps explain why the NP residents created goals related to these two areas. As a theory to explain motivation (or goal setting in this case), the EVT postulates that individual beliefs about future success are related to perceptions of competence and task difficulty. In the theory, the value of the task is related to the cost of carrying out the task, taking into consideration the intrinsic value (e.g., how much enjoyment one gets from carrying out the task), utility value (e.g., how the task is related to the work), and attainment value (e.g., personal importance of the task in relation to one's self-concept)

Table 7 – Representative Quotes: Set One Long-Term Goal to Achieve by the End of the Residency (or Beyond)			
	1 Month	6 Months	12 Months
Clinical	"Long-term goal of being able to accurately manage and diagnose common diseases in primary care population"	"Ability to independently and safely manage chronic disease in the outpatient setting"	"Continue to develop my evidence-based knowledge regarding treatment of chronic disease"
Leadership	"Precept nurse practitioner and physician assistant students"	"Precepting and supervising trainees"	"Develop curriculum/course"
Interprofessional collaboration	None	None	None
Patient-centered care	None	None	None
Shared decision-making	"Patient self-management skills	"Knowledgeable of social resources and triage patients to determine who needs what available resources"	None
Sustained relationships	None	None	None
Performance improvement	"Become proficient in panel management" (Note: panel management is a proactive approach for providing population care [i.e.' all diabetic patients])	"Panel management"	"Elicit suggestions from the current NP residents to enhance the COE experience of incoming NP residents"
Professional development	"Will be a safe, competent provider and mentor"	"Become a well-rounded, confident, competent provider"	"Work–life balance"

Note. COE, Center of Excellence; NP, Nurse Practitioner.

([Cook & Artino, 2016](#)). In clinical practice, cost is usually measured as time, resulting in choosing to carry out tasks that have higher value in the time available. The NP residents intrinsically valued learning from caring for patients in primary care and improving their self-confidence and perceived competence. The NP residents' overall goal is to be prepared to practice independently; therefore, the residency program has high utility value when NPs do not feel prepared. Additionally, the NP residents wanted confirmation that they have an identity or self-concept as a primary care provider, which can be considered an attainment value. Based on the importance of perceiving themselves and having others perceive them as competent and capable providers, our

Table 8 – Describe Any Potential Opportunities/Obstacles You Might Encounter as You Try to Achieve These Goals			
	1 Month	6 Months	12 Months
Opportunities	"I have the opportunity of learning from many different people in the clinic, postclinic conference, and practicing in my own clinic. I feel really lucky for all of the opportunities to learn and better myself as a clinician I have been offered this coming year. I will work hard."	"Learning opportunities that are available throughout residency."	"This residency year has given me the opportunity to hone skills and abilities."
Obstacles	"There is so much to know and so little time to read up on everything that I want to."	"For the first two goals, I think any challenges lie within myself. For example, time management (or lack thereof) could interfere with planning and delivery. Knowledge gap could also be an obstacle. In terms of long-term goal, I believe the main obstacle would be an inability to overcome knowledge gap." "There are plenty of opportunities, the only obstacle I see is my own confidence, but that has been growing the whole time I've been at the VA."	"Simply put, a new setting may prove challenging at the beginning, but I feel that this year has provided me with the skills and confidence to know that I can go into most settings and practice within my scope." "One obstacle might be the new responsibilities in the new role."

Table 9 – Open Code for List Two Things You Do Well (Numbers of Times Code Reported) in Clinical Competency		
1 Month	6 Months	12 Months
Behavioral health and homeless veterans (1) Charting and documentation (4) History & physical (4)	Charting and documentation (2) Diabetes management (2) History & physical (1) Hypertensive management/heart failure management (1) Reproductive health (1) Differential diagnosis (1) Chronic disease management (2) (chronic pain and diabetes) History & physical (1)	Chronic disease management (3) Provide general quality care (1) Comprehensive documentation (2) Clinical assessments (1) Diabetic care (1) Construct pertinent differential diagnoses (3) Care planning (1) Medication review (1) Charting and documentation (1) History & physical (4) Case presentations (1)

results suggest that developing an identity as a leader or a performance improvement participant/leader would come later as it does not yet have high enough value in the time available for learning. It could be that educational sessions and/or time spent on leadership and performance improvement may be viewed as competing for time with clinical and professional development. Time is identified by the NP residents as a recurrent obstacle in terms of both hours in the day and length of the residency program.

The absence of data in the other domains, specifically leadership and performance improvement, cannot be interpreted as unimportant to the NP residents as we limited their responses by specifying them to provide one or two comments. We can, however, use this information for the improvement of our residency program. For example, we can emphasize the importance of these competencies to the overall role of the NP. The areas of clinical and professional development can be viewed as necessary for performance at the individual level, whereas the competencies of leadership and performance improvement are important for competence at the systems level of care

delivery. NP Residency programs that address the competencies from both the individual and systems levels have the potential to contribute to the improvement of the quality and safety of care (Dolansky & Moore, 2013). Curricular content to enhance this appreciation of the need to view competence not only from the individual perspective but also the systems perspective is needed. Also, it may be necessary to frontload the residency with an intensive focus on clinical and professional development competencies and focus in the later months on leadership and performance improvement.

Additionally, as we enroll more Doctor of Nursing Practice (DNP)-prepared graduates in our NP Residency programs, it will be interesting to compare leadership and performance improvement competencies between the master's-prepared and the DNP-prepared residents as the DNP graduate essentials emphasize these competencies in the academic curriculum. In the 2016 and 2017 CoEPCE NP residents, cohorts there have been eight NP residents prepared at the DNP level. Further understanding of the knowledge and skills of the DNP-prepared NP would be advantageous.

Table 10 – Open Code for List Two Things You Would Like to Improve (Numbers of Times Code Reported) in Clinical Competency		
1 Month	6 Months	12 Months
Develop plan of care Pathophysiology Procedures Computer skills (2) Documentation (4) Differential diagnosis (8) Chronic disease management Medication management (3) Identify murmurs and abnormal heart sounds Musculoskeletal assessment (4) Physical assessment skills (3)	Dermatology referrals, diagnostics, examination, treatments Titrating insulin (3) Musculoskeletal examination, treatment options (2) Differential diagnosis (3) Asthma Chronic disease management (3) COPD management (2) Opioid consents Reading EKG and hearing murmurs (2)	Differential diagnosis (2) Chronic disease management Diabetes management Inpatient medicine Insulin titration Urgent care Assessment skills EKG interpretation (2)
Note. COPD, chronic obstructive pulmonary disease; EKG, electrocardiogram.		

Overall, this study provides insight into areas of what NP residents perceive as motivators for improvement. This has implications for the NP Residency program curriculum as knowing this information will help mentors highlight these areas in day-to-day clinical care and in providing feedback. For example, mentors can first provide feedback on these highly valued goals (e.g., clinical and professional development) and can include feedback on the other systems-level competencies of the residency program to highlight the connectedness of all the competencies. Adding curriculum in areas such as time management, organization, and work–life balance is also needed. In addition, these findings are helpful for those who are developing or restructuring a primary care postgraduate NP training program to build the appropriate learning trajectory and focus initially on improving clinical skills and moving to other competencies later in the program.

Limitations

The major limitation is that this is self-reported data, which are always subject to bias based on how the respondent perceives that information will be used (external) or how responding is influenced by one's own self-perception (internal). NP residents may have responded to the questions because they perceived they were being judged (summative performance) if the purpose of the CoEPCE competency assessment tool was not consistently made clear that it was formative in nature and important to create personal learning plans. Otherwise, the NP residents may not have been completely honest about their shortcomings. Additionally, completing the competency tool is not anonymous and that may limit what the NP residents might say. These limitations could be remedied by a survey collected anonymously. Another limitation is the "short answer" format of listing one or two comments rather than encouraging a more narrative response, which limited our ability to understand the response in context. Adding a section for listing a goal under each competency would, maybe, provide a broader perspective. To investigate further, interviews and/or focus groups might help us explore these findings. We transitioned from paper to a web-based portal entry format over the course of the program, which could have changed how some responded to the questions. Finally, due to limited responses to questions 6 and 7 on the tool, we did not have sufficient data for analysis. Thus, we were unable to explore further if the NP residents' reflective processes were linked with setting and achieving their goals.

Conclusion

Our results provide a deeper understanding of the NP residents' professional growth in the VA CoEPCE NP Residency program and the EVT helps explain these results. Analyzing the NP residents' responses to these open-ended questions has generated insights that can help us revise our curricular and mentoring aspects of our program to expand value from individually focused competency to a broader systems approach. We will explore the distribution of the data in the competency domains further at each site to better understand how the curriculum can be improved on developing clinical skills and practice management skills so the NP residents reach perceived competency faster, which would potentially free up the residents to contemplate learning in the other domains. Additionally, we need to further explore if mentors can normalize the emphasis on improving clinical skills and practice management skills so the NP residents can move to a focus on both individual- and systems-level competencies since clinical and professional development will continue throughout their career.

We propose that our findings on NP residents' perceived strengths and areas for improvement provide data to support NP postgraduate training programs for transition-to-practice as recommended by the Institute of Medicine. Mentoring and supportive curriculum are necessary as NPs transition from academia to practice. Additionally, our findings emphasize the important role of NP postgraduate training programs in supporting the perceived needed growth in clinical skills, while at the same time raising awareness for new graduate NPs about the importance of other competency domains. How to best integrate additional competencies into this clinically intensive growth year requires further study. NP residents will need to be receptive to learning to lead and engage in performance improvement and these curricular components should not interfere with their expressed desires to develop competency for independent practice as clinicians.

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