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Strengthening the Advanced Practice Clinician Workforce Pipeline Through Preceptor Education and Support

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ABSTRACT

***Problem**:* The Advanced Practice Clinician (APC) workforce pipeline is dependent on clinical training opportunities. Clinician providers are encouraged to precept students but rarely are offered support tools to ensure a successful process. Lack of adequate support can result in a suboptimal outcome for the APC students.

Context: Clinician preceptors in a large healthcare organization looking to build a robust APC pipeline to support future patient populations.

Interventions: Preceptor materials were developed and delivered to clinical preceptors to help them successfully precept advanced practice clinician students during their clinical rotations. This material consisted of 20 microlearning modules to help clinicians improve their precepting skillset.

Measures: Project outcomes examined the precepting experience through preceptor feedback on the usefulness of the microlearning modules and was obtained through surveys offered at the end of each microlearning video as well as a general preceptor pilot survey.

Results: 14 preceptors from the pilot group responded with a greater than 60% favorable rating of the microlearning video modules. The student response improved after the pilot group preceptors were provided education through comments stated by the students that 100% would apply for positions with the organization.

Conclusion: Clinician engagement with the videos microlearning modules was minimal, but the feedback on the videos themselves was favorable to the microlearning platform and quality. APC student experience improved with the implementation of preceptor support systems. Future programs should look for better ways to reach out to clinicians for a more robust engagement process.

Key words: *nurse practitioner(s), clinical education, preceptor(s), advance practice clinician(s) preceptee(s), preceptorship, preceptor education*

Section II: Introduction

Problem Description

As healthcare organizations prepare for an increase in future patient populations it is essential to prepare for the increased workforce demand. As seasoned physicians retire from the primary care arena, and newer physician clinicians gravitate towards the specialty healthcare settings, increasingly advanced practice clinicians (APC) are needed to fill the critical need for primary care providers. To ensure the future successes of clinicians in the ambulatory setting, a robust clinical training for APCs must be developed and delivered to students to support them prior to them being independent practitioners. Future patient populations will rely heavily on this resource and it is of upmost importance to develop and grow these future practitioners into effective independent clinicians.

Like many organizations facing the need to recruit and retain future APC students, Sutter Health has determined there is a need to develop education materials that supports preceptors building a foundation for APC students. Preceptors are the individuals that guide and develop the student population to meet clinical expectations in the care center setting; they act as the clinical instructors for the students engaged in their clinical rotations. Current barriers to robust clinical training experiences have ranged from APC students without logins for the electronic health record (eHR), lack of badge access for entry into buildings or locked departments, a preceptor that is unable to spend time with the student, and a lack of standardized feedback and expectations from their provider preceptor according to student feedback previously received by the organization. Students also face challenges of obtaining adequate learning opportunities during their preceptorship. Some students have reported only watching a provider during their precepting experience with no time to use the skills they learned in school. Preceptors often feel

torn between delivering patient care and providing an interactive student experience for their preceptee. The new hire is faced with a different precepting experience and often are left on their own to figure out the ins and outs of their new provider role. Sutter Health's current process has led to scattered precepting experiences for students which could result in a reduction of retention and increase in frustrations from these groups. With a lack of provider preceptors, academic institutions, students, and newly graduated APCs feel the pinch related to the hardship of finding supportive providers to fill the preceptor role.

Precepting barriers in the ambulatory setting create obstacles for APC student clinical placements (Koetting, L'Ecuyer, and Benz, 2014). Development of precepting experiences for APC students requires collaboration with a health care delivery organization. If that organization is lacking preceptors, this equates to fewer experiences for students which in return causes a further shortage of providers. It is a chain of events that could affect patient populations in the future due to a significant lack of clinician providers to manage care in the ambulatory setting. Sutter Health works to ensure that appropriate students are placed with clinician preceptors and that the precepting resources are utilized in the best way possible, but there is definitely a shortage of clinician preceptors which is reflected in the struggle to find willing preceptors each semester for NP and PA students. Developing a preceptor education program will offer support during the precepting experience and enhance and encourage more precepting engagement.

As future workforce demands increase there will be a necessity to develop clinical preceptors to support the patient populations. According to a study published by the University of California, San Francisco, "by 2030 the demand for primary care clinicians in California is to increase by 12% to 17% above current demand" and "physician supply will decline between 2016 and 2030 in nearly every supply scenario estimated" (Spetz, Coffman, & Geyn, 2017, p. 6).

By developing a clinical APC preceptor workforce benefits will be reaped for the future generations of APCs. A robust support system of clinical preceptors and precepting programs will potentially help to lessen the impact of the physician shortage when it occurs.

However, there are barriers that could impact this clinical preceptor program. An issue that may arise could be a decreased number of willing APC preceptors. Providers tend to shy away from precepting for a few different reasons such as a concern over loss of productivity resulting in decreased compensation and extra time needed for precepting according to the National Organization of Nurse Practitioner Faculties (NONPF) survey (Koetting, L'Ecuyer, & Benz, 2014). Preceptors face exhaustion and fatigue related to managing busy clinic settings and then to add precepting, educating, and guiding preceptees to the daily schedule may be overwhelming. Finding harmony between providing excellent patient care and teaching without causing an imbalance or conceding on either of those expectations is one that is often quite difficult for preceptors (Valizadeh, Borimnejad, Rahmani, Gholizadeh, & Shahbazi, 2016). Preceptors have the opportunity to mold the next generation of providers and must exhibit all the best characteristics of professionalism shown through their clinical practices and role modeling but the healthcare industry's standard related to the role of the preceptor is not well defined (Panzavecchia & Pearce, 2014). This may result in a lack of qualified clinician preceptors which could negatively impact students' precepting experiences. If precepting is seen as an obstacle for the provider, he or she may choose to no longer play that role which will result in a smaller bank of available resources for academia, students, and new graduated professionals needing support.

Although there could be challenges for clinicians precepting APCs, the needs outweigh the potential barriers. The future APC workforce will add so many elements to the success of healthcare organizations that it is of the upmost importance to develop programs to support and

grow this future resource. APCs will potentially carry a significant portion of the primary care population healthcare needs. They will possibly be the clinician resources that staff those centers as physicians move to more of the specialty arena. APCs will be a key a resource that will support organizations to their future successes.

Available Knowledge

PICOT Question

For APC preceptors, do preceptor support mechanisms provided within the healthcare organization improve the preceptor experience?

Sources Search Process

CINAHL, PubMed, and Scopus databases were searched to gather evidence in September 2019. The key words used were *nurse practitioner(s), provider(s), competency, clinical education, preceptor(s), advance practice clinician(s) preceptee(s), preceptorship, preceptor education.* The search was limited to peer reviewed, research articles in English published between 2013 to 2019. The results returned 1,131 articles. Articles older than 5 years, languages other than English, and those discussing only Registered Nurse (RN) practice and their clinical judgement resulted in decreasing the number to 175 articles. From there, articles were reviewed and excluded if it did not primarily focus on precepting, supporting preceptors, or finding clinical precepting placement. This resulted in a review of the evidence to determine the top 6 articles pertinent to the subject of discussion.

Results

Roberts, Wheeler, Tyler, and Padden (2017) discuss characteristics, benefits, incentives, and barriers of precepting as a nurse practitioner (NP). The authors performed a stratified randomized survey sample of NPs from each state in 2015 with a follow-up survey in

2016. Five thousand randomly selected NPs were included in the 2015 survey with 40,000 included in the 2016 survey. These NPs were working practitioners that may or may not have been in a precepting role. Only 10.9% (n=548) in 2015 and 9.9% (n=3970) in 2016 responded to these surveys. The function of the questionnaire was to determine three major areas of interest around precepting in the licensed NP community: characteristics needed to be a preceptor, obstacles and assets for precepting, and ultimately the feedback from the NP community on how to rectify the precepting problem.

The 2015 questionnaire explored characteristics of NP preceptors including experience, education level, practice settings, and certifications. The respondents were also asked about benefits of precepting. The benefits were ranked with "learning about current clinical guidelines" being at the top and "discount in school bookstore" being at the bottom. Other items that fell in that list were things about medications, clinical materials, continuing education, and developing relationships.

The 2016 survey focused on barriers of precepting in response to the 2015 survey, which had a primary focus on the benefits of precepting. Time involved to precept was the number one barrier, and it was followed by other items such as electronic health record issues, space limitations, care center setting and/or specialty, and previous bad experiences precepting. A major barrier for the NP preceptor was related to reimbursement for services rendered due to decreased productivity, and it would benefit both the employer and the academic institutions to further examine what possibilities are available to improve this.

The limitations of the study found that the size of the two surveys were significantly different lending to a small sample of participants that took both surveys. Although the geographical region covered the United States, the sampling came from one NP organization

which may not represent the NP community entirely. Even with these limitations, the findings show the need for all healthcare engagement will be essential for the next generation of NPs.

Panzavecchia and Pearce (2014) explored the role of how preceptors support newly graduated professionals in their field of practice of nursing in the UK. Their study was a qualitative descriptive questionnaire sent to 30 random preceptors in 3 acute hospital settings, two large hospitals and one small hospital. The response rate was 37% (n=11), and five preceptors took part in a semi-structured interview (n=5) although all were invited to attend the interview (Panzavecchia & Pearce, 2014). Since there was no mandatory preceptor training, most preceptors stated they felt like they were not prepared to deliver an adequate support structure and precepting experiencing for their colleague needing assistance or guidance. The preceptors felt being a preceptor added workload pressures. There were three main themes that rose to the surface in the findings. The preceptors felt: a lack of preparation, a common perception of the role and limitations of a preceptor, and a lack of time to be an effective preceptor.

Koetting, L'Ecuyer, and Benz (2014) performed a study with three objectives: 1) to establish learning objectives of NP preceptors used to develop preceptor on-boarding curriculum; 2) institute a useful methodology to orient the caregiver team including, NP preceptor, student, faculty, and university; 3) meet the requirements of certifying entities. The objectives were gathered through a review of applicable literature and a survey. A survey was developed and delivered to 1469 preceptors who were former NP preceptors from 2009-2013. These participants were drawn from a preceptor database maintained by the academic institute Saint Louis University and had precepted NPs during the identified years. The questionnaire consisted of 15 items related to their role, orientation, onboarding for precepting, and other key elements of

precepting. The survey was anonymous, and demographics were not included. Of the 1469 preceptors contacted, only 276 agreed to participate with a 18.7% return rate. Of the respondents, 66% felt an on-boarding orientation for a preceptor would not be helpful for *understanding* their preceptor role. However, 29% stated it would be somewhat important to *attend* a preceptor orientation to prepare for a NP student, 24% had no opinion for either way, and 15% felt it was very important. This data suggests there are differences in the beliefs about the needs and importance of preceptor preparation among preceptors. The discussion suggests that preceptors may find a formal onboarding process for becoming a preceptor an obstacle, which may in turn reduce the number of available preceptor resources.

Gonzalez-Colaso, Moloney-Johns, and Sivahop (2013) conducted a study to determine the proportion and characteristics of physician assistant (PA) preceptors along with barriers and incentives to be a preceptor. A Likert scale survey of 74 items, 56 which were to assess preceptor specific experiences, and 14 questions focusing on demographics. It was disbursed to 76,527 PAs certified by the National Commission on Certification of Physician Assistants (NCCPA) with a response rate of 15.3% (11,722). The evidence was analyzed using *t* tests and chi-squared, with a statistical significance set at $\alpha = .05$. Only 25% of respondents identified as current preceptors. A large portion indicated having never been a preceptor (41%). Past preceptors were approximately one-third of the group (34%). Analysis indicated that most current preceptors had between 6 to 10 years of clinical practice (adjusted odds ratio: 2.3; 95% CI 2.0-2.7). Evidence showed PAs in Pediatrics and Emergency settings were more likely to act as a preceptor than primary care PAs. Driving factors for being a preceptor were “giving back to PA profession” (90%), personal satisfaction from teaching (75%). Barriers included lack of

support (35%) and quality of students (77%). The evidence concludes there is a large potential pool of preceptors, but there is a shortage of willing PA preceptors.

Logan, Kovacs, and Barry (2015) discussed the challenges of NP students finding clinical preceptors. A survey was sent to 160 NPs working in an organization to identify potential preceptors. Fifty responses came back of which 85% stated interest in precepting. Barriers for the majority of the group were lack of time, lack of compensation from the organization, and lack experience precepting along with other identified issues such as productivity expectations from their organization. This 369-bed facility in a rural setting affiliated with Geisel School of Medicine was the only medical teaching facility in New Hampshire.

Although there were 160 advance practice nurses working in specialty settings, this New Hampshire medical facility is not affiliated to a school of nursing with an advance practice track. There are three nursing schools fighting for placements at this facility, but the NPs are obligated to teach residents and medical students. A barrier or challenge for NP students is that the Center for Medicare and Medicaid Services (CMS) makes it possible for medical faculty to be paid as preceptors. NP students may have difficulty finding willing preceptors due to the fact that there is no compensation from CMS for precepting NPs unlike PA and medical student preceptors. (Logan, Kovacs, & Barry, 2015). This means preceptors supporting medical students and PAs may be compensated while those supporting NPs may not, which adds an additional burden on NPs acting as a preceptor if there is a loss of revenue related to a lessened patient panel in order to support a student.

The authors of the study focused on things they could control such as offering a preceptor course. Their study indicated most NPs were already involved with precepting other students (81%), and 67% percent of individuals precepting stated they would like to attend a half-day

class on precepting NP students through an organization. People seemed willing to take on the role of precepting, but obstacles such as a lack of productivity, standardized precepting processes, and lack of compensation were a consideration for the lack of preceptors.

Throughout the discussion above, a common problem that surfaced was a lack of preparation for a precepting role. Education and preparation of preceptors for this important role was often reviewed as a barrier and something that negatively impacted the preceptor. Components that are found to be helpful to preceptors included having at least a year of clinician experience, a history of teaching or educating, and confidence to do the precepting role.

Education can support all of these elements to lift up a clinicians precepting practice. Preceptors benefit from having applicable concepts and activities as stated by one participant in a precepting program, “The [preceptor workshops] that I think are good and what I define as good, as I do in any workshop or any session that you go in as a learning tool that you can walk out with application skills” (Nottingham, 2015, p. 306). Often those with more clinical experience take a step back in the precepting world and those newer to the clinical field as APCs feel the desire and drive to precept and give back. It is important for organizations to build their clinical preceptor base because the current level of providers with be decreasing in California, while there is expected to be an increase in the number of patients seeking care in the ambulatory setting. The APC clinician population is expected to help support the increasing patient populations and education elements and tools will help with ensuring that future is successful. Preceptor development programs have reported a change in knowledge, skills, and attitudes of preceptors once they have taken part in a designated preceptor training program (Kamolo, Vernon, & Toffoli, 2017). Preceptor education will be a key factor in supporting future preceptors so that they may support future APC clinicians.

Bodine discusses how quality precepting education for preceptors helps build confidence of the preceptor and provides clear structure, which leads to and builds preceptor engagement. Acknowledgment that preceptors are key stakeholders in the onboarding process also helps establish and build engagement. A specific way to promote more engagement is to continue to support the preceptor beyond their initial preceptor education through annual updates or online educational programs (Bodine, 2018). The educational updates would include things such as clinical reasoning, communication, and how to handle conflicts. Along with the education components related to preceptor engagement, recognition goes a long way to promoting engagement. However, regardless of these items, the study showed that organizations must acknowledge the challenges of precepting and come up with innovative ideas to support preceptors in a way that promotes growth and development. Best practices have been demonstrated by a couple of hospital-based organizations in California and Maryland. They developed programs that involved preceptor teams that helped with decreasing burnout by utilizing the team precepting method for when the primary preceptor is not available. Huddle boards were included to update and engaged preceptors with the latest educational information that included where to find preceptor resources and additional precepting class information along with an advice section. Another area of educational opportunities was provided through an annual conference for preceptors. All of these components broaden the platform for preceptor success and engagement according to Bodine (2018). Overall, education was a key component for building preceptor engagement.

Rationale

Theoretical Framework

With this program, the clinician experience is shifted from being a clinician focusing on providing care to their patients to a clinician developing a future APCs along with carrying their patient panel during their shifts. In this process it is important for the clinician to develop an awareness, engagement, and understanding of critical points related to precepting. A theory that can help explore this role expansion is the Transitions Theory developed by Dr. Afaf Meleis. Through extensive research she produced a framework illustrating properties of transitions, including facilitators or inhibitors, process indicators, and outcome indicators (Meleis, Sawyer, Im, Hilfinger Messias, &Schumacher, 2000). According to Meleis, Sawyer, Im, Hilfinger Messias, and Schumacher this produces several essential properties of transition experiences such as: awareness, engagement, change and difference, time span, and critical points and events (2000). This theory presents transition as a multidimensional, unique process based on the individual experiencing the transition. This theory supports the development of educational materials along with support needed from the organization to make the successful transition to a robust preceptor program.

The first part of this theory is the "Change Triggers." This "Change Trigger" is coming from the organizational need to build a robust APC preceptor pipeline. This is a driving force within the organization since data is showing a need in the future to APCs in the ambulatory to support the increase in patient populations as well as the increase of physicians retiring. From this trigger, an intervention is determined and decided upon. In this particular case, it is determined that there is a need for a preceptor education program to support APC preceptors. In order to support clinicians precepting student APCs, it is important to understand their needs

and be able to support them during the entire change of having a student "just show up at the clinic for their rotation" to a more planned experience for the clinician and student. This is a caring process, and it is important to understand the care needed to be provided during the entire process. Changing a clinician's practice in any way can disrupt many elements for that individual as well as the patients they are managing.

Another element to consider within the Transitions Theory is the "different levels of awareness." This is often difficult to determine in an organization with a large footprint, since many clinicians, stakeholders, and coordinators do not share the office space or are even located in the same affiliate within the organization. Pulling in the many levels of resources be a task in itself and determining the "different levels of awareness" will help guide that process. This will be accomplished by working closely with the leadership team that manages the APC preceptors in the organization. These will be a key conduit for disseminating and collecting information which will help gauge awareness of within the organization. Assessing this engagement will be through managing and monitoring the meetings with the leadership team as well as determining how engaged their APC preceptors are with the information and changes that is coming from them. The meetings will be documented using attendance and interaction.

However, there are "critical points" during this process that will be key to deciding the next course of action. A key first step will be establishing the preceptor support content. These pieces will help with driving the change for the preceptor to take part in which is the engagement in the microlearning process and learning or mastering new skills such as feedback or understanding the preceptor roles. The patterns of response to the change triggers and interventions would equate ideally in the preceptors acquiring confidence and mastering skills to be an effective knowledgeable preceptor. This process should be engaging for those involved in

the transition. This should result in a supportive experience for the preceptor and organization. The important element in the Transition Theory is understanding that it is more than just the change itself, the moments preceding and after the change are equally important (see Appendix C).

Over-arching Aim:

To improve the APC workforce pipeline through the development and implementation of APC clinical preceptor support tools.

Project Goal:

Develop and implement preceptor support materials in the format of a micro-training video library .

SMART Objectives:

- Develop an easily accessible video library of "quick tips" for APC preceptors to utilize while precepting students or newly graduate APC.
- Write scripts for 20 educational video modules discussing evidence-based precepting practices within 6 months of beginning project.
- Film and edit 20 precepting video modules within 6 months of beginning DNP project.
- Publish and promote video series to APC preceptors within 1 month of finishing project and track evaluations.

By May 1, 2019, develop, implement, and evaluate a microlearning video series library for APC preceptors.

Section III: Methods

Context

Stakeholders

The primary stakeholder is Sutter Health as an entire organization since this is a strategic initiative to increase APCs within the organization. However, these videos will focus on an initial preceptor pilot group of approximately 10 to 15 preceptors. The Clinician Mix Optimization (CMO) group is a leadership team that is pioneering a program to determine the best physician to APC provider mix in the ambulatory clinic setting for the organization. Since this pilot program has the support of the CMO, it is expected to spread throughout the two main regions of Sutter Health in the future, the San Francisco Bay and Sacramento Valley regions.

Sutter Health is a large organization located primarily in northern California and has facilities in the southern part of the state and Hawaii. This organization is made up of hundreds of clinics serving over 3 million people and partnering with more than 12, 000 physicians. The reason for this initiative has to do with changing patient's access to care in the ambulatory setting to meet the needs in all the communities that Sutter Health serves.

Currently, providers in the clinics are a ratio of six physicians to one APC. Sutter Health understands that this ratio will not be able to keep up with future demands for health care services, so it is looking to make a drastic change of two APCs to one physician in the primary care arena of the ambulatory setting. This will open up the access issues within the ambulatory settings of Sutter Health meaning the time a patient must wait before getting an appointment with care provider or a care provider.

The executive sponsor for this project is the Senior Vice President for Patient Experience at Sutter Health. Mike Conroy, Chief Medical Officer of Sutter Medical Group is the pacesetter;

he is the leader of the work within the strategic initiative. He will move timelines accordingly or put a stop to work and redirect it if needed. The Director of the Office of Patient Experience is our workstream lead, and a subject matter expert (SME) for the feedback on the microlearning videos.

The extended team of SMEs is made up of PAs and NPs. They are invested in the success of these videos, due to their intimate knowledge surrounding the precepting process and lack of set education for preceptors. Another group of stakeholders would be the patient population that seeks care from Sutter Health. The patient populations served by Sutter Health are quite diverse with all ethnicities, age ranges, socio-economic backgrounds, education levels, and religions. Although they have no direct input in the process, patients often sit on councils to bring the patient point of view to the table, and advocate for that population. This is a diverse group of patients, and Sutter Health is spread across a great deal of Northern California.

Interventions

This project consisted of 20 microlearning videos that focused on a single subject per video to help preceptors with daily challenges of precepting. These videos presented as Supportive Tips for APC Training (STAT) which provided tips for common precepting issues such as how to give feedback, prepping your student for meeting a new colleague or patient, understanding their role as a preceptor, and other needed tips. The subjects of the series were decided upon by the SME group, pulled from literature regarding precepting along with items from Sutter Health University's Preceptor Foundations course (see Appendix D for additional details).

The videos were then be emailed out to the preceptors for the use when needed, such as when clinicians were having a new preceptee. This came from the student placement coordinator

who tracks the preceptee placements. Also, this series was placed in a library on the APC Preceptor Portal on the intranet. This resource was recommended in the onboarding letter that the preceptor received when notified of their new preceptee. Previously, the APC preceptors had no educational material available for them during their precepting experience, so this was a library of resource available at the touch of a button. This pulled from Meleis's Transition Theory. It was a supportive process for the preceptor that focused on the entire change process from the "change trigger" to the outcome of acquiring a new skill and mastering it.

In order to develop a pipeline of preceptors and future APCs, a program was developed to deliver educational materials in an easily accessible platform for APC preceptors. These videos were provided to preceptors with quick tips to guide students to success. The preceptors could access these microlearning videos as needed to help with common preceptor issues such as giving feedback or how to handle some patient interactions that providers may have while assisting APC students. Since time is precious, these sessions needed to be in short deliverable chunks of material that could be remembered and retained. Each video focused on a specific topic

Microlearning is delivered as a nugget of education that supports the retention of information. The modules covered information such as: things to do on your first day with a preceptee, feedback, expectations for patient interactions, assessing the preceptee's ability, and other tips. These modules provided directions for the provider preceptor who may not be familiar with ways to guide a preceptee related providing patient care, and did not focus on specific clinical skills related to the APC provider level practice. The skills demonstrated in these microlearning sessions were universal precepting practices that supported a learning experience for a preceptee. These education modules were usually no longer than about five

minutes and focused on the learner. These preceptor modules had the focus of being used as a quick tip or just in time education tidbit. The modules were accessible to anyone at any time utilizing a variety of devices: desktop computers, iPads, iPhones, and Android devices. Using a variety of delivery options made their accessibility even better for the when and where factor. All of these things wrapped the package up into a less time-consuming option for today's adult learners. The flip side of the coin was that by developing a project like this for Sutter the business assumed the cost as a one-time up-front labor and materials cost. Once the microlearning videos were written, produced and published, then it was a matter of the learner accessing them for use. There may be additional cost down the road for updates but that will not necessarily be updates to the current material, but more like additions to the library. With the benefits of microlearning to the learner and business side of things, the impact of such a learning platform was high with a positive impact on both fronts (Pandey, 2016). Following the micro-learning model provided a significantly more cost-effective model than a stand-alone APC residency program, and the microlearning videos supported the preceptors in helpful *just in time* learning segments that could be watched and reviewed whenever the preceptor found the need.

By developing and providing a library of *in the moment* microlearning video education modules to provider preceptors, these education bites will decrease the belief that precepting future APCs will impact preceptor's patient care and productivity. This increase in productivity can come from the patient experiencing a more in-depth patient experience and more opportunities for communication of issue or concern, creating a group dynamic, more individualized experience, and potentially an increase in the number of treatment sessions for the provider team according to the Faculty of Health Professions (n.d). However, the preceptors must be educated about the benefits of precepting by offering tools to support these benefits

which will impact the belief that providers cannot do both, provide excellent patient care and deliver a beneficial precepting experience. Increasing qualified providers through increasing willing preceptors will in return increase providers for future patients and lessen the load for existing clinicians.

The microlearning videos were a series of 20 videos that covered the subjects of feedback, learning plans, roles of a preceptor, phases of a preceptorship, assessing the ability of a preceptee, building relationships, and other topics. Many components of the videos surrounded soft skills precepting, and "tips" for the preceptor. These tips were quick and focused on one subject. These were some guiding principles for precepting, and have been shown to support precepting experiences regardless of the skills set one was precepting. They were universal precepting concepts that supported the preceptor to deliver a supportive effective precepting experience to their student APC.

According to Roberts, Wheeler, Tyler, and Padden there are many challenges facing APC preceptors including time, reimbursement, ability, support from academia and employers, and desire to be a preceptor which may affect the individual's drive to fill the preceptor role (2017). The purpose of this project was to develop educational materials delivered in an easily accessible platform for APC preceptors that would provide them with quick tips to guide students to success. The preceptors could access these microlearning videos as needed for quick tips to help with common preceptor issues such as giving feedback or how to handle some patient interactions that providers may have had while assisting APC students. Since time is precious, these sessions needed to be in short deliverable chunks of material that could be remembered and retained. Each video focused on a specific topic. Since these were "just in the moment" training modules they supported the clinicians in their time of need, which tied into Meleis's gaining a

network or support property of the Transitions theory. The goal was to provide a healthy supportive transition from having no resources to have a library of "as needed" resources. This presented the providers with options and materials available to the precepting community without being overbearing or impacting patient clinician interactions and schedules.

Gap Analysis

Sutter Health's current state regarding preceptor guidelines or processes for precepting APCs is fairly non-existent and what does exist is quite scattered. The spread of clinical practice standards throughout the organization is so broad that engagement with students and new employee APCs varies from setting to setting. Although this is a problem within Sutter Health, the healthcare industry as a whole has not set a standard for precepting APCs, and there is a lack of motivating factors for providers to take part in such an important process.

The ideal future state would be engagement by clinicians to willingly precept APC students and newly graduated APCs. By developing a series of modules for microlearning available to APC preceptors at any time and easily accessible, this should change preceptor's perspectives regarding education and precepting of students' APCs. These tips will provide a standard guideline for preceptors in Sutter Health related to feedback and communication, engaging a preceptee, and ways for a preceptor manage their time and patient panel. These modules will not focus on the clinical aspect of clinician scope and work, but more on the soft skills of precepting an individual like providing feedback and setting up a successful first day. These videos are about how to precept, explain, or teach a preceptee. With these items a standard engagement with students will follow and the goal would be for more clinicians to willingly precept if they see and hear the successes of other clinicians precepting in their care

center. This ideally will result in more APCs working at Sutter Health in the future and making an impact in a positive way (see Appendix E for additional details).

GANTT

Sutter Health has decided in order to support future APCs, an APC preceptor program would be developed which occurred late in 2017 and early 2018. After initial discussions about whether it would be in a traditional classroom setting or virtually, it was determined that since APC time is precious, a microlearning format would best suit this demographic of providers. This project began in May of 2018 with the drafting of the initial scripts and will complete in July of 2019 will final evaluations of the microlearning sessions. The pilot group evaluation will begin in December 2018 (see Appendix F for additional details).

SWOT Analysis

For successful implementation of an APC preceptor microlearning education program the strengths, weaknesses, opportunities, and threats (SWOT) to the program along with the work breakdown structure (WBS) were evaluated. These helped with determining the best plan of action for moving forward. First, the SWOT analysis will be covered (see Appendix G).

Strengths

There were several strengths for this program. There was a great deal of support from the executive team in Sutter Health. Their goal was to transform Sutter Health and the clinician provider mix. The current ratios consisted of six physicians to one Advanced practice clinician (APC). This current clinician mix model would not be able to support the future healthcare environment, since there would be significant primary care physician shortage according to Spetz, Coffman, and Geyn (2017). Healthcare organizations as a

whole will have to make important changes to the way patients are supported in primary healthcare arena, and this was one way to support those changes, but with it comes the need for education of future preceptors.

Another strength of this program was the education modules that were developed in a video format and pushed out the preceptors. The only work that the prospective preceptors had to do was open the email and click a link to watch the video. Physicians and APCs were constantly struggling with the ability to manage an overwhelmed patient panel and schedule, pressed for time in their daily life, and looking for balance of life and work. These microlearning videos were not longer than four minutes, and they provided "tips" that were valuable to managing a student APC. The tips provided useful material that was more about how to guide a preceptee through the day using soft skills over the clinical aspect of care. Soft skills with patient care was something that clinicians have often previously mastered, and these "tips" reminded them of their use with the education element of precepting. It took minimal time to complete the video, and after watching the series, the providers were able to collect a CEU for their time if they choose to complete the required evaluation.

Weakness

The point that caused this program to lack provider spread was that it was not mandated by Sutter Health. The organization wanted the providers to take part in the program and fully supported the process and learning modules, but they were not able to "force" the providers to watch the segments. We pushed them out with the hopes that clinicians wanted the information and would willingly watch the videos since they were easily accessed. It was valuable information, but there was no true way to validate the information that was received, since there was no return demonstration.

Opportunities

The potential opportunities of this program were significant. One opportunity was an increased recruitment ability through a supportive, educational precepting experiences for students along with a collaborative experience for a newly graduate employed APC. This would potentially result in an increased retention and job satisfaction for both the preceptor and preceptee. The preceptor would benefit from those things by helping to increase the number of their collegial partners, which would result in a balance within their patient loads and job satisfaction.

Threats

A threat to this program was that the physicians and APC preceptor choose to ignore the education modules. This could happen due to feeling overwhelmed by current conditions, lack of time, or just believing it was not actually a benefit for them and their practice. This also resulted from complacency.

Work Breakdown Structure

Another key component of this project was the utilization of a WBS. With the WBS, a structure of the goals and scope was determined along with significant dates of completion. This process helped with organizing the project and developing key target dates. The first area was determining what the date would be for the roll out of the project. Since this project was pushed from leadership to develop a preceptor program for clinicians precepting APC students, they had a specific timeline for deliverables. The project took off for script development in May 2018 with the first film session occurring before July 4th, 2018. This first pilot of the video filming showed what worked and didn't work for the script writing and

final product requirements from the stake holders. We filmed four videos initially, and while they were made professionally, none made the final video series to be sent out. They were not approved by the director of my department for video library; she felt they were not specific enough for the program's library and wanted to tighten up the message with a more focused approach. Learning from that experience, researching preceptor material, script writing, filming, editing, and validating the product continued.

Once those items had been completed the research for a video and delivery platform was established and then tested. Research was conducted in order to determine the best video storage platform along with the best platform to send out the videos. The Sutter Health marketing department was contacted to see what Sutter Health's standard was for distribution of material to the masses within the organization. They provided several options, and it was determined that Myemma would be the best platform for this program. Myemma is a web-based program that sends out set emails with attachments and tracks how many of the emails and links were opened. It collects all of this data based on email receiver clicks and stores that in the program for the sender to review and analyze at a later time.

For engagement of the material to be evaluated, an evaluation for each video was written and placed in the Myemma platform and was sent out to the participants. All post data collection was housed together to be reviewed and analyzed. Each video had its own evaluation attached to validate that specific tool or tip, but as a whole you were able to trend them for the general data included in the evaluation. This evaluation helped determine if the objectives were met for clinical utilization of the material. While the surveys were individualized per video, there was a common theme throughout. The surveys asked if the material was valuable followed by a question specifically directed at material from the video.

The next series of questions determines what was most helpful, and asked if clarification was needed, and what three changes were made as a result of watching the videos along with how one would operate differently (see Appendix H).

Budget

This project was one that needed a budget due to the technical use of contractors and specialty skills. The budget is $29,000 which was divided into categories such as script writing, video filming and production, delivery platforms, man hours, travel, and any other duties that presented during this project. With this program if we wanted to see a return on investment (ROI) and was able to retain 10 APCs, then we would have a ROI of over $2.4 million. The cost of turnover of APCs was estimated to be approximately $250,000 to $300,000 (Gilliland, 2019). The initial budget about $15,000, but including staff wages and such, the amount spent was approximately $29,000. The author's hourly wages were not included in this budget, but if one were to do that an appropriate budge would be closer to $75,000. Since this was an internal project in the author's department, it was not counted into the initial budget (see Appendix I).

Communication Plan

The communication plan provides direction to the team on appropriate channels for communications and expectations with regards to urgent issues, updates, resolutions, project statuses along with who to communicate to and when. This communication plan is simply an accountability tool to help hold people to the standards of this project. The core group of the team consist of the project manager, Director of the Nurse Workforce and Leadership Development (NWLD) department, support staff, and contractors. There is also the next step

up which includes the SME group members, and then the executive team. This plan discusses communication platforms and expectations (see Appendix J).

Study of Interventions

The approach to assess the impact of the preceptor education video modules was a pre and post intervention analysis. The initial survey went out to students that had recently precepted within the organization (see Appendix K). It was determined if there were deficits in the precepting experience and determined if this was affecting the desire of the students to apply for full-time employment with the organization post-graduation. There was a follow up with students with a survey seeing if the next group had a different view on the precepting experience. However, these were two different student groups that the data was collected from, and so their cohorts did not have the previous experiences to reflect upon. The second group of students took a survey based on their precepting experiences with preceptors from the pilot group. The pilot group had the opportunity to view precepting modules, and then began their preceptor journey. This data was exported to excel for analysis. There were also multiple surveys sent out to the preceptors attached to each video module

Measures

The outcomes were measured using excel for the quantitative data and feedback for the qualitative data collected from surveys both pre and post rollout of videos. These surveys were emailed to the students that had preceptor experiences in the organization. The students that had filled out the survey pre-roll out of video modules answered 10 questions sent in a survey via Survey Monkey. That data was compared to the next cohort's experience with precepting, to see if they felt supported during their experience which resulted applying for employment at the organization.

The second group of factors that were measured were the preceptor group and their experiences with the preceptor video modules. This measurement of engagement used data reflecting activity of people opening their emails utilizing Myemma. Myemma is a software program that captures analytics by measuring clicks and was initially the platform of choice for delivering the email to the preceptors. Since analytics will report how many emails were opened and if the embedded video link was clicked on, the team was looking for a 25% engagement in viewing the videos. However, the clinicians were not opening their emails, so Myemma was not really offering much in the way of data. At that point a rapid change cycle was put into place, and the option pushed forward was for the clinical placement coordinator team to send out a pdf with each student placement that had a catalog of the links as seen in Appendix D. The viewing data was then collected from the video platform, Vimeo, and you could see spikes in the open rates around the times students were placed. Since clinicians often have a full patient panel, their schedules were tightly packed, which reduced the opportunities for them to engage in sifting through emails. If it was not specifically pertinent to their clinical duties, they seemed not open it.

Another way outcomes were measured was through the awarding of one-hour CME credit to providers. In order to collect this hour of credit, the provider had to view the entire video series and fill out an evaluation form on all videos post viewing. The evaluation form included the Likert scale to help determine value of the videos, and participants had the opportunity to provide feedback as well in a comments box. The outcome expectation for this was 25% of providers collecting the CME. There was a specific time trial of the entire process for each microlearning video to ensure they met the time requirements to award a CME. This was performed by 7 clinicians, and it put the time at over 1 hour to watch all the videos and

complete the survey.

Analysis

The evaluation was captured using a software called Smartsheets along with statistics from Vimeo. Here one can evaluate raw data as well as group data or feedback. The benefit of using Smartsheets (see example Appendix L) and Vimeo for the upfront and backend of the processes was that there was an analysis of how many preceptors were opening the videos and watching the video versus how many preceptors were actually completing the evaluations for CMEs. It built a better picture of engagement through descriptive statistics of participant engagement as reported. There was also a post-evaluation connected to the module and that data was collected and analyzed to measure engagement. A separate survey was sent out to the preceptors using Qualtrics for capturing survey data regarding ease of use and understanding of the preceptor video modules (see Appendix M).

Ethical Considerations

This DNP project was approved by the USF SONHP DNP committee as a quality improvement project not requiring IRB approval (see Appendix N) The participants were informed that the outcomes of this project would not affect their job performance evaluations. This project was about developing tips that would support APC preceptors when managing students or newly graduated APCs. However, this project does support the Jesuit value of "forming and educating agents of change" (Creighton University, n.d.). This program supported thoughtful reflection in communication with patients and students, as well as offered ways to provide encouragement and growth that built the next generation of APC providers to have empathy and compassion with all people they interact with. These videos focused on how to help the preceptor work with their preceptee, and not on teaching a preceptor on how to

preceptee. With that in mind, the conversation was changed to one of reflection and growth for the preceptor. Often preceptors forgot what they role model when precepting, and this program asked preceptors to be in the role model function as much as possible and bring the profession up to the top standards that all patients and students expect.

This project also accounted for many of the American Nurse Association (ANA) standards of ethics such as: respect for human dignity, relationships with patients, nature of health, and collaboration which ties into the Jesuit values of forming and educating agents of change (2017). The Jesuit values at University of San Francisco includes "Cura personalis- care of the whole person" which fits nicely with this project. In the videos, the elements of human dignity and relationships was explored often. The nature of health, patients and self, was discussed, and the importance of treating the whole patient along with ensuring that providers were managing their self-care to avoid burnout and compassion fatigue. The ANA supports these measures because the patient is always at the center of care, and these standards of ethics revolve around the patient and all interactions of teams. In order to build a successful preceptor video series, these elements of ethics and standards were included.

Section IV: Results

This initial phase of this program was begun by sending out a survey to students that had completed their recent preceptorship with the organization. The results came back mixed, and some students felt like they had had a successful experience and would likely consider applying for a position with the organization. Other students stated their experience was suboptimal and they would not consider applying. As the CMO team reviewed this survey, they realized the importance of supporting future APCs by promoting a positive student experience. This second part was a catalyst to help support the current preceptors precepting APC students and new hires, since the future physician shortage was driving proactive processes to ensure enough clinicians were in the ambulatory setting to provide care to the patient populations.

This next process began with determining the key subjects that needed to be covered in a preceptor program and how it would be delivered. Initially three options were given to the preceptor clinician mix optimization group to decide if this education would be provided during a one-day class for the clinicians. It was determined that a library of videos that could be accessed for ease would be the best option for busy clinicians. Initially it was decided that the videos would be sent to the clinicians in an email using the delivery platform Myemma. However, the analytics showed the clinicians were not opening their emails. The response rate was anywhere from 1 to 3% open rate. Due to the low open rate it was determined that the process should be changed.

The library series was put together in a PDF and sent out to the new preceptors. The next data points were collected using the video platform Vimeo, which gave analytics as to how many people were watching the videos and for how. This PDF was sent out to the clinician preceptors

upon notification of them receiving one of the student placements in the pilot. The pilot group was approximately 25 students. This meant the pilot preceptor group was 25 preceptors as well. Also, this PDF was routinely sent out to the group precepting APC students as well being placed on the APC portal page for easy access.

The one component that could have had an impact on the student scores was that the students taking the pre-intervention survey, and those taking part in the post survey were not the same group of students, which would be difficult to capture, since different clinical rotations require different clinical experiences. However, there was a shift in outcomes from the pre and post student surveys. In an ideal situation, the students would be the same ones to take both the pre and post survey.

One area that was hoped to drive clinician engagement was that if they completed the entire series of videos and filled out the surveys for all of the videos they would have the opportunity to collect 1 CME, but not one of the pilot preceptors took part in this opportunity. They did not seem to be concerned with the surveys. The results of those watching the videos was higher than those that had completed the survey.

Pre-Intervention

The initial survey that went to the students was sent to 25 students in May 2018. From 25 students it was sent to only 12 replied back which is a 48% response rate, and 10 of the 12 students had been previously been precepted at the organization previous year which was the base group to answer the questions since they had past experience with the organization. These students precepted with nurse practitioners (36% of students), physician assistants (27% of students), and physicians (36% of students). According to the question, “Did your experience with a Sutter preceptor meet your school’s clinical objective?”, 91% of the respondents stated

yes with 9% responding no. The next question was surrounding the topic of working for the organization following graduation in which 58% stated yes and 42% stated no. One particular comment stood out from the students, “The clinic where I was, I felt like most of the MDs there aren’t supportive of NPs, in addition, the company isn’t paying NP’s enough”. While the pay wasn’t something within the scope of this project, providing tips for the clinicians precepting is something that is addressed.

Post-Intervention

For this phase, a second survey was sent out to the 25 clinical APC students of which 10 responded which is a 40% response rate. A key question asked during the survey is if they would be interested in working for the organization after graduating, and 100% of the respondents stated yes meaning they would like to join the organization. Another question posed to the students was “How satisfied were you with your Sutter Health clinical experience?” and of the group, 8 answered “extremely satisfied”, 1 responded “very satisfied”, and 1 did not respond to the question. This appears to be an improvement on the previous student experience.

For the clinical preceptors, their data revolves around the microlearning modules ease of use, understanding, and quality. The survey was sent using Qualtrics to the 25 pilot preceptors which 14 responses were collected. This is a response rate of 56%. The sample group was APC preceptors that were a part of the pilot. It was in English. The possibilities were on the Likert Scale of Strongly agree to Strongly disagree (see Appendix M).

The following were the questions and responses:

- “The microlearning videos are easy to view.”
    - 11 respondents (78%) “strongly agree”
    - 3 respondents (22%) “agree”

- "The language in the video was easily understandable."
    - 12 respondents (85%) stating they "strongly agree"
    - 2 respondents (15%) stating "agree"
- "The videos are high quality."
    - 12 respondents (85%) "strongly agree"
    - 2 respondents (15%) "agreed"
- "The videos were informative."
    - 11 respondents (78%) "strongly agree"
    - 2 respondents (15%) "agree"
    - 1 respondent (7%) "neither agree nor disagree"
- "The videos are helpful for precepting."
    - 11respondents (78%) "strongly agree"
    - 3 respondents (22%) "agree"

Along with this Qualtrics survey, each microlearning module had a series of questions attached. An example of this can be viewed in Appendix L for additional details. These surveys did not have many respondents; the most for one was 8 responses, 5 of which were the time trial participants. Each survey consisted of 5 main questions. No one collected a CEU for this process, and there is no way without the completed follow-up survey to determine if a clinician watched all 20 videos as required by completing all 20 surveys (see the Table 1 in Appendix O).

Section V: Discussion

Summary

The goal of this project was to support clinician preceptors with a new preceptor program that focused on providing precepting tips offered via video modules. The modules met the requirements of being easily accessible, quickly reviewed, and pertinent to their practices and processes but general enough to cover a variety of skillsets. Prior to these modules, the preceptors in the organization at the clinician level had no formal training or expectations for precepting students. With the utilization of Meleis's Transition Theory, this program was able to include many elements to help with moving this program from an idea to a resource. These videos were developed with the idea of supporting the APC preceptor group in a way that built out their mastery of precepting in and engaging way that gave them confidence to manage tough situations like feedback or the "know it all" student. Meleis's Transition Theory supported the foundation of looking at the program from the "change trigger" at the organizational level to the critical points in the properties ultimately ending on a positive response.

Interpretation

This series of videos offers an opportunity to quickly deliver small pieces of information to the clinician workforce without committing them to a day-long class or seminar. It offers a new innovative way for the message of precepting to be delivered to the pilot group. However, the pilot struggled with finding a way to encourage and draw engagement in the process. This process spoke to the ease and basic material but did not discuss the greater group of preceptors in the organization and how to get them to collectively change their perspective on precepting.

This material was an investment of money from the organization, but if it positively impacts the retention of 1 APC, then the ROI is significant, and that can't be overlooked. Those that engaged in watching the videos found them informative and helpful. This piece is the "critical point" as discussed in Meleis Transition theory. This "critical point" is the point of engagement and moving forward with changes as learned in the videos by the preceptors. The majority of the group found the videos informative, helpful, high quality, and easy to view with over 50% of the respondents answering positively. This shows a positive correlation, but it cannot determine with certainty that this alone will cause a shift in precepting experience for the preceptor. It simply shows that the videos were informative and helpful to those that engaged in the program.

Limitations

A potential limitation or barrier is that these videos will not be "required" for preceptors to view prior to precepting a student or newly graduated APC. The physicians and other clinicians taking part in precepting do not work for Sutter Health, but typically report to Sutter Medical Group. In order to make this mandatory, the leadership in the medical group will have to dictate that process. These will be in a supplemental, "as needed" video library. With the knowledge of the fact that these will not be mandated as part of the precepting requirements, it will be important to spread the word of this available resource and develop buy-in from the end users. Also, another factor to consider is the storage of the videos and how easy it will be to find them on the Sutter Health intranet. If they are not easily accessible, individuals will give up looking for them. Providers count their "clicks" in the computer and the more "clicks" it takes to get to the needed information, the less likely the follow through will be. If access to this library

can be found on the main portal page, then they will have more visibility thus making it easier for providers to find and use.

Another potential limitation is the standard roll out throughout Sutter Health with regards to sending the preceptors the videos. The pilot group is a controlled group of individuals, but the long-term process will need to be developed for distribution, and there are many different individuals that manage APC preceptors throughout Sutter. There is not one point of contact which will add an element of process confusion if it is not addressed up front. This could create a barrier to long-term utilization of the videos and materials.

Preceptors need tools, but often overlook the valuable resources in the precepting arena. These videos will provide that information to the preceptors in a quick, easily accessible learning module. However, preceptors may feel like this is yet another period of time they do not have, and this in itself will be a barrier. The basic idea in the clinical setting is that precepting is just showing or talking a person through the steps of the "job". This is not the case, and the videos will open up so many other aspects of precepting such as: the four roles of a preceptor, the phases of precepting, feedback, managing difficult patients, and other key elements. The fact the videos cover basics of precepting may turn some clinicians off, but if they took the time to view the videos, they would be pleasantly surprised about intricacies related to precepting.

Future studies are needed to examine if the implementation of the preceptor support videos increased preceptor participation and ACP student retention within the organization. Developing a platform to gather more data and original research on the engagement and development of preceptors to help build a robust APC pipeline would be helpful to the long-term organizational vision. These studies could determine what elements have been

successful with this program as well as what elements need to be removed or remodeled. This pilot program has built the foundation and opportunity for future studies to develop additional resources for preceptors to engage in and absorb. These resources could help with elements of education, increasing engagement, and/or decreasing burnout. The possibilities could go in any direction.

Conclusions

Precepting future APCs is a commitment that providers and organizations must embrace. In order to meet the future needs of growing populations seeking treatment for healthcare concerns, the APC provider group must be developed to care for those individuals with compassion and kindness. These microlearning videos will help providers manage their precepting responsibilities while keeping balance in their daily practices. The short-term implication with regards to changes in practices will be the ability to role model specific tips that have come from the series, and the long-term implications will be a change in the dynamics and resource pools available to precept and provide care for patients. By developing a large willing pool of preceptors, there will be a decrease in compassion fatigue and burnout due to multiple individuals carrying the load of precepting versus a select few that seem to be in that role as of right now. Through the development of this pool, preceptors may be more willing to take part in the precepting of their future colleagues and invest in the process.

Ultimately, the outcomes will be an increase of willing preceptors and a decrease in compassion fatigue and burnout, which will result in a positive experience for the patients of Sutter Health. This will reflect in a larger pool of providers working for Sutter Health lending to less wait times for scheduled appointments which will be shown in an increase of access for

patients. The larger the resource pool for patients and preceptees, the better off Sutter Health will be in managing long term care and becoming the place providers choose to work.

APC preceptors will be key to the future of APC students. This group of preceptors has the opportunity to develop their future workforce, but if the preceptors are not willing or engaged in precepting, then care being delivered in the ambulatory setting along with future colleagues of the profession will feel the impact. When preceptors engage in developing their colleagues, they have the opportunity to make a positive impact for Sutter Health and help to transform the ambulatory setting to one that is able to manage larger patient populations on tighter budget constraints. While creating an APC preceptor microlearning video library may sound like a little touch point within the precepting world, creating something that supports the APC precepting process shows that Sutter Health is invested in the future of APCs in the organization.

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Section VIII: Appendices

Appendix A. Evaluation Table

Citation	Conceptual Framework	Design/ Method	Sample Setting	Major Variables Studied and Their Definitions	Measurements	Data Analysis	Findings	Appraisal
Roberts et al. (2017)	None	Descriptive, exploratory study surveys with demo-graphics and descriptive statistics	NPs located in the United States	Characteris-tics of NPs who precept - exposure and interest in teaching or precepting - incentives and benefits that support precepting - interest in participatin g in registry	Initial questionnaire in 2015 with secondary questionnaire follow up in 2016	Descriptive statistics and content analysis	Respondents valued learning. Benefits: access to resources, library, bookstores; collaboration with faculty and other preceptors. Barriers: time constraints, EMR issues, lack of support, space, staff, experience, resources, precepting training.	**Strengths**: Consistent of analysis with APRN White Paper. **Limitations:** Only some NPs took both surveys, convenience sample from one organization, evaluated perceptions vs objective data. Level III, B Good Quality
Panzavecchia & Pearce (2014)	None	Qualitative descriptive design	30 preceptors in three hospital settings	How preceptors felt about their role	Questionnaire and interviews	Descriptive statistics and content analysis	Lack of preparation to be preceptor, idea that preceptor is support, lack of support for preceptor, lack of time.	**Strengths:** Information helpful for planning preceptor program. **Limitation:** Size of study small

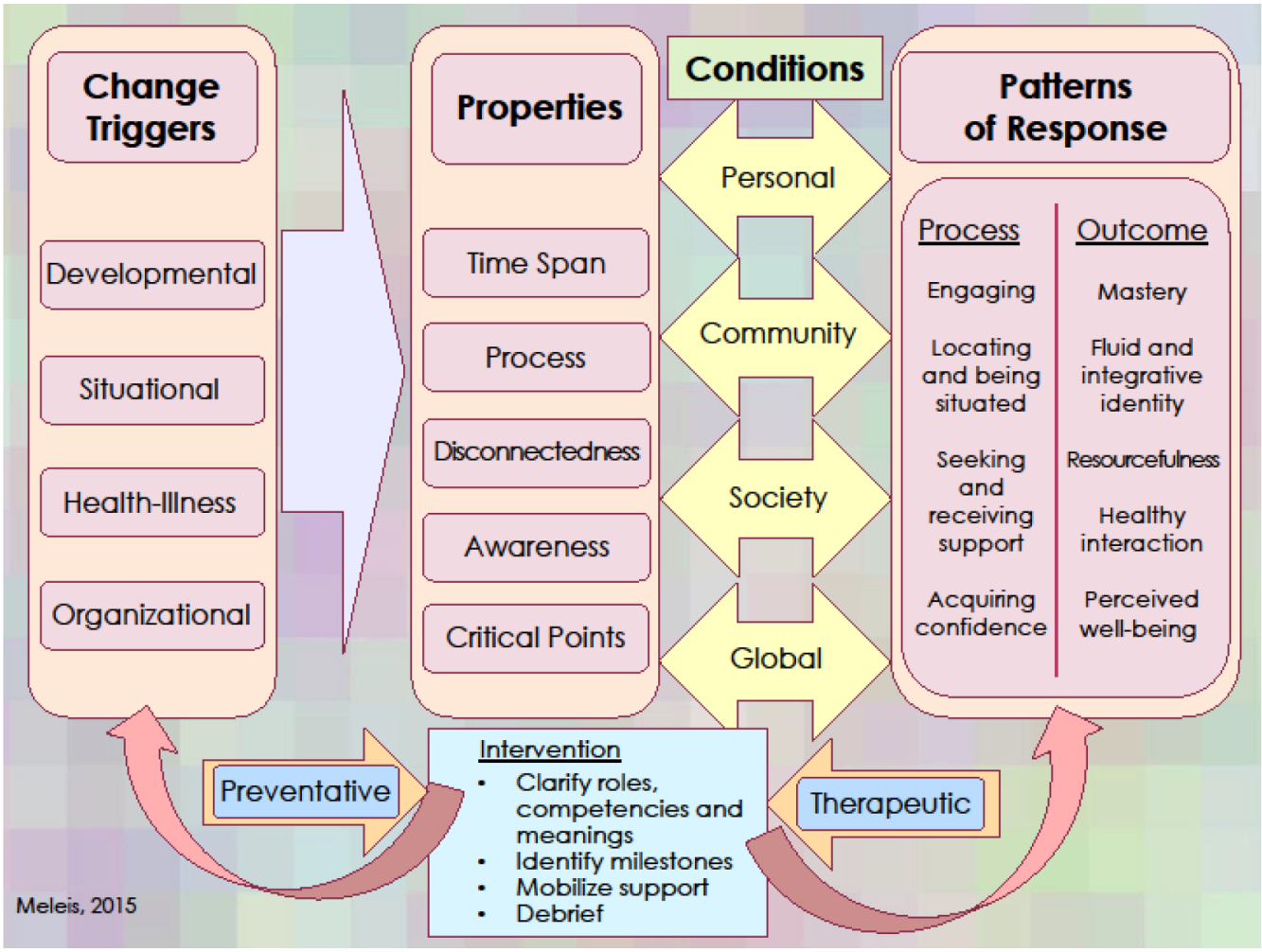
								Level III, B Good Quality
Koetting et al. (2014)	None	Descriptive, cross-sectional design	Former NP preceptor during year 2009-2013 from a pool of 1,469 preceptors	Discussed the importance of a preceptor program, preferred method of delivery of information, faculty contact, clinical rotation expectations	Survey tool with 15 questions	Thematic categories using constant comparative methods of qualitative analysis	Majority felt preceptor orientation for how to be a preceptor not helpful. Email preferred method of communication, had means to contact faculty, a toolbox would be helpful.	**Strengths:** Provided statistical information. Limitation: Anecdotal information. Level III, B Good Quality
Gonzalez-Colaso et al. (2013)	None	Cross-sectional study survey	Pas in the National Comm-ission on Certification on Pas's database	Pas experiences as a preceptor, barriers and incentives to precepting	Survey with 74 items	Descriptive statistics with means and proportion using SAS version 9.2 with statistical sig $\alpha = 0.5$	Incentives: give back, teaching is rewarding, stay up to date in practice, Barriers: Support and productivity conflicts.	**Strengths:** First large study related to Pas related to precepting. **Limitations:** Cross-sectional study does not allow drawing causal inferences, results could be subject to nonresponsive-ness, not designed to explain respondents' interpretation of

								barriers and incentives Level III, A High Quality
Logan et al. (2015)	None	Emailed survey and lit review and question-naire for students	Single institution NP survey to 160 NPs	Evaluations, specialty vs primary care rotations, financial incentives for precepting	Initial survey with follow up to determine about need for class, and questionnaire for students	Survey answers evaluation	Most schools find challenges finding preceptors for NPs. Benefit to academia and organizations is building a robust preceptor program.	**Strengths:** Supported by most literature about barriers and incentives for precepting NP students. **Limitations:** Small group of data points Level III, B Good Quality

Appendix B. Evidence Synthesis Table

Interventions	Roberts et al. (2017)	Panzavecchia & Pearce (2014)	Koetting et al., (2014)	Gonzalez-Colaso et al. (2013)	Logan et al. (2015)
Interest in acting as a preceptor			X	X	X
Discussed barriers	X	X	X	X	X
Discussed incentives	X	X		X	X
Developed a preceptor process		X			X

Appendix C. Meleis Theory



Appendix D. Microlearning Video Links

SHU Micro-learning

Sutter Health University

Sutter Health University presents the micro-learning video series for

APC PRECEPTORS

Thank you for dedicating your time and expertise to being a preceptor! It may seem intuitive to translate all you know as a provider to an incoming student. It might help to have some short guiding principles to go by too! That's why Sutter Health University has designed a series of videos to support you in your efforts. If you get stuck or need a little extra lift to get aboard, please get in touch with us at preceptingcare@sutterhealth.org. We are here to help. Happy Precepting!

Hover your cursor over the information icon for a brief description of each video then click on the title and enter the password: **sutter**

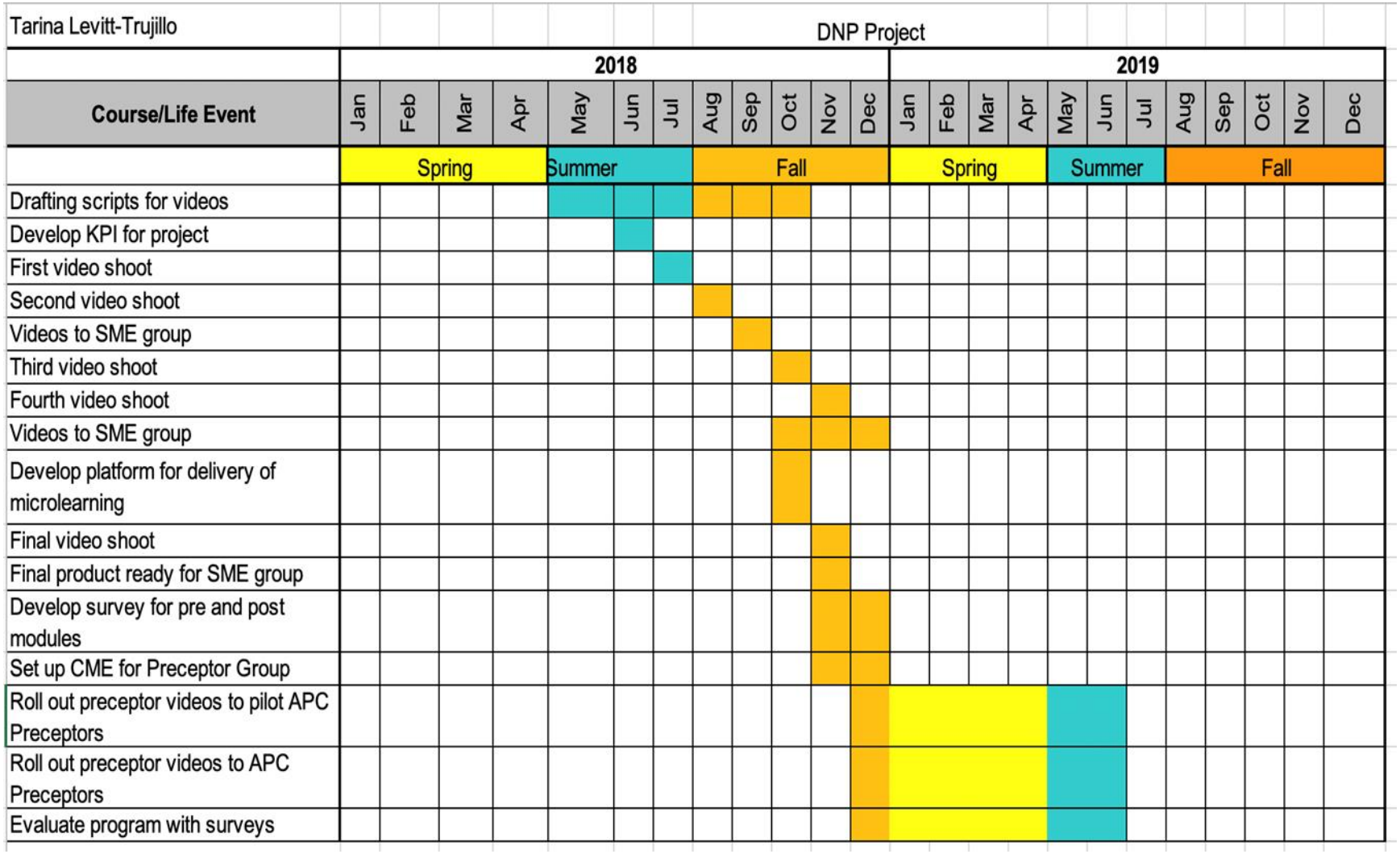
?	To Watch, Click the Title	Tell Us What You Think!
ⓘ	5 Steps to a Great First Day	Survey for 5 Steps to a Great First Day
ⓘ	The Learning Plan	Survey for The Learning Plan
ⓘ	Four Roles	Survey for Four Roles
ⓘ	The 5 Phases of a Preceptorship	Survey for The 5 Phases of a Preceptorship
ⓘ	Priming the Pump	Survey for Priming the Pump
ⓘ	Did You Assess Their Ability	Survey for Did You Assess Their Ability
ⓘ	Ace Your Feedback	Survey for Ace Your Feedback
ⓘ	Expectations for Patient Interactions	Survey for Expectations for Patient Interactions
ⓘ	Next Time	Survey for Next Time
ⓘ	Building Your MA Relationship	Survey for Building Your MA Relationship
ⓘ	Probing for Evidence	Survey for Probing for Evidence
ⓘ	ARCC	Survey for ARCC
ⓘ	Mess Up, Bounce Back	Survey for Mess Up, Bounce Back
ⓘ	The Reason	Survey for The Reason
ⓘ	More or Less	Survey for More or Less
ⓘ	Self-Diagnosing Patient	Survey for Self-Diagnosing Patient
ⓘ	The Opioid Conversation: How to Prepare Them for It	Survey for The Opioid Conversation: How to Prepare Them for It
ⓘ	Preserving the Relationship	Survey for Preserving the Relationship
ⓘ	A Softer Start	Survey for A Softer Start
ⓘ	Take Care of Yourself	Survey for Take Care of Yourself

Supportive Tips for APC Training

Appendix E. Sutter Health Preceptor Gap Analysis

Target Project	Available Resources	Gaps Identified	Implications	Action to Address Gap	Timeline
Ambulatory setting needs more APCs to support the growing patient population. Sutter Health will be increasing the APC to physician ratio to 2 APCs to 1 physician.	Sutter Health has committed financial support to making the shift, along with education for preceptors	Lack of standardized precepting processes	Scattered information that does not produce a robust program for precepting students, which directly impacts a recruiting arm for Sutter Health with outreach to up and coming APCs.	Develop a preceptor video series made up of microlearning session available to APC preceptors as just-in-time training.	May 2018-Dec 2018

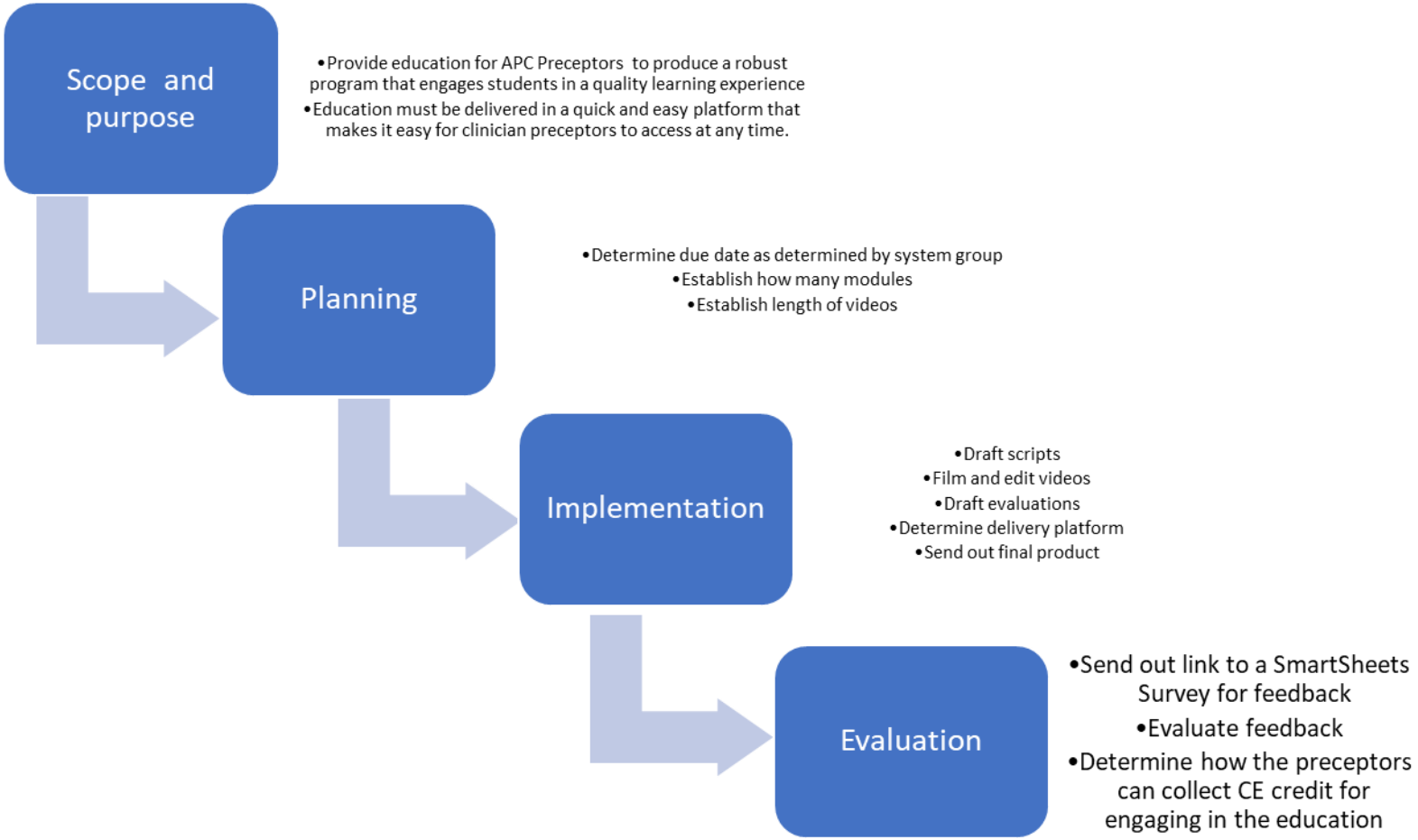
Appendix F. Gantt Chart



Appendix G. SWOT Analysis

Strengths	**Weaknesses**
• Support from Sutter Health executive leadership • Videos are short in length • Videos are pushed to the providers - they will not have to search them out in the Sutter Health intranet • CMEs will be a motivator	• Not mandated or required for precepting • Abbreviated form of a tried and true preceptor program • Not validated through return demonstration • Clinician complacency • Lack of clinician engagement
Opportunities	**Threats**
• Increased ability for recruitment • Increased retention • Increased job satisfaction	• Lack of organizational support from clinicians and support staff

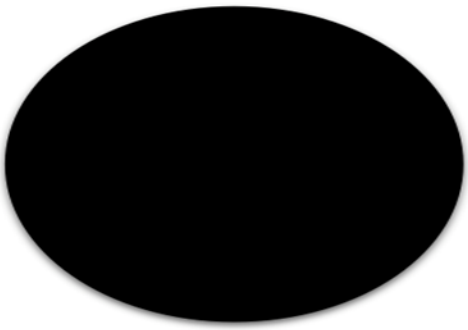
Appendix H. Work Breakdown Structure



Appendix I. Budget

Budget

% of Income Spent



100%

Summary

Total Income
$29,000
Total Expenses
$29,000
Total Savings
$250,000
Cash Balance
-$250,000

Income

Item	Amount
Department Budget	$29,000.00

Expenses

Item	Amount
Videographer	$6,500.00
Producer	$7,500.00
Internal Team Budget	$15,000.00

Annual Savings

Date	Amount
1 APC	$250,000.00

Appendix J. Communication Plan

Name/Nature of Communication	From	To	Content Provided By	Type (Man/Mktg/Info)	Frequency	Format Used	Delivery Media	Comments
Sponsors								
Urgent Issues	Project Manager	Director of Nurse Workforce and Leadership Development (NWLD)	Project Managers, Contractors, Team Members		As needed		E-mail, In-office communication	Project Manager will discuss issues as they arise
Issues Updates/ Resolutions	Project Manager	Director of NWLD	Project Managers, Contractors, Team Members		As needed		Verbal updates, E-mail, Memos	The Project Manager or Director will update the SME group during weekly meetings
Status Report	Program Manager	Program Director	Program Manager, Project Managers	Mandatory	Weekly	Weekly report out meeting to SME group	E-mail, Shared Storage, Skype meeting	The Program Manager will gather information for report out
Special Presentation or Meetings for Updating Executives	Director of NWLD	Executive Team	Program Manager, Program Director, Team Members, and Contractors	Informational	As needed	To be determined, based on requirements	Meeting	
Team Members								
New Program Issues or Action Items	Program Manager, Project Managers and Team members, and other persons	Director of NWLD	Project Managers, Contractors, Team Members		As needed	E-mail, In-office communication	E-mail or Meeting with Director of NWLD.	
Issue Items Status / Updates / Resolution	Program Manager, Project Managers and Team members, and other persons	Project Manager or Director of NWLD	Project Managers, Contractors, Team Members		As needed	E-mail, In-office communication	E-mail or Meeting with Director of NWLD.	Will revise plan as needed to meet needs of team.
Project Status Reports	Project Manager	Director of NWLD	Project Manager and Team Members		Monthly or as needed	Meeting	Verbal	These reports will provide updates and preparation for roll-outs.
Program Status Report	Program Manager	Director of NWLD	Project Manager and Team Members		As needed	E-mail, In-office communication	E-mail or Meeting with Director of NWLD.	
Stakeholders								
New Issues/Action Items	Stakeholders	Project Manager and Director of NWLD	SME Group		As needed	Meeting or email	Meeting or email	
Urgent Information Impacting Team and External (I/S) Stakeholders	Stakeholders or SME Group	Project Manager and Director of NWLD	Stakeholders or SME Group		As needed	Meeting or email	Meeting or email	

Appendix K. Student Preceptorship Survey and Results

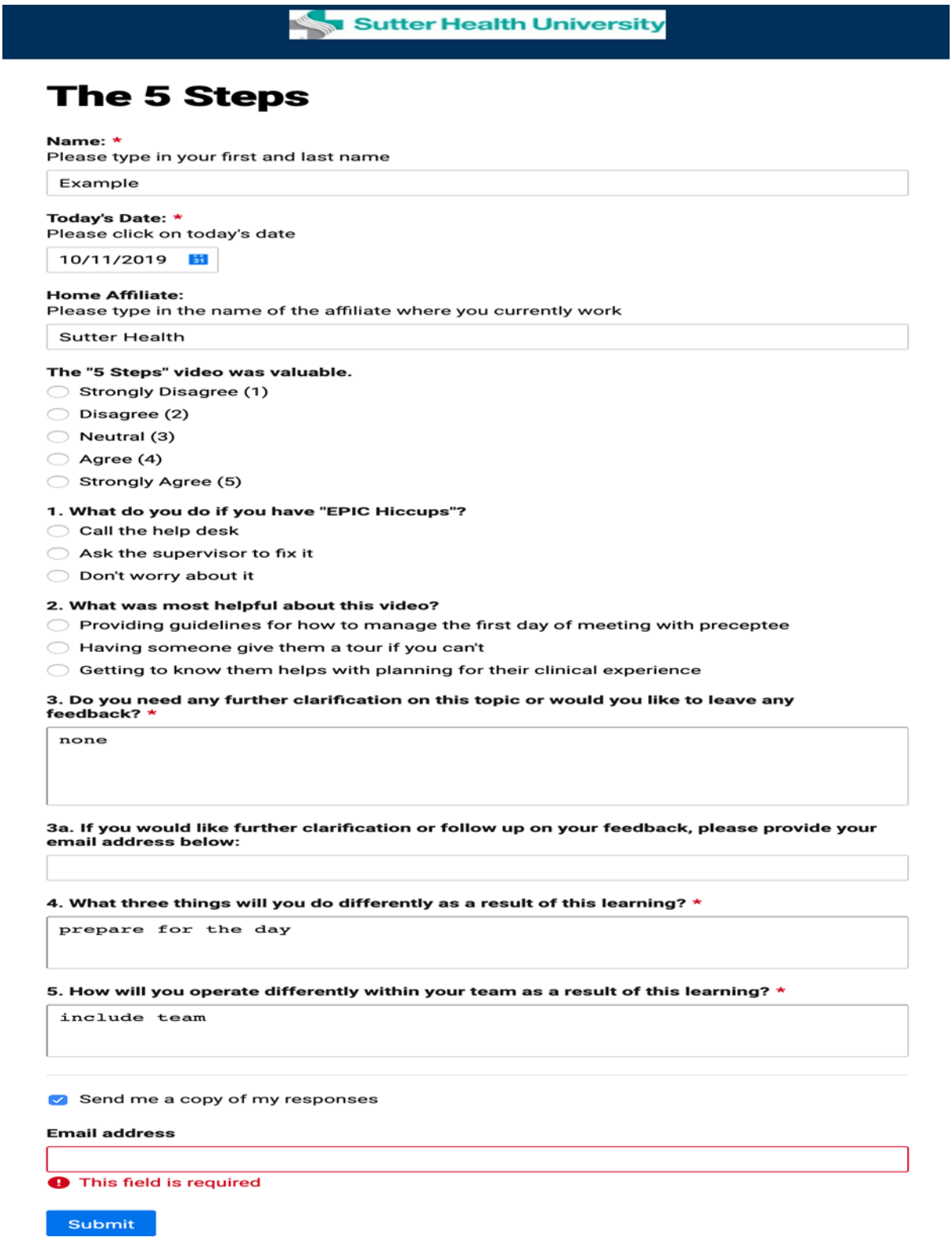
STUDENT PRECEPTORSHP SURVEY RESULTS: 5/14 to 5/21/2018: 12 Respondents

Question #	Result	Comments
1. Have you precepted with a Sutter clinician at a Sutter facility within the past year? If no, you do not need to continue this survey.	Yes 75% No 25%	
2. Indicate the time you have precepted with a Sutter Health APC or MD, i.e. how many days/week and how many weeks?	1-4 days/wk for average of 15 wks	3 to 4 days a week, for 16 weeks. 3 days a week. 3 days a week for 14 weeks. 2-3 days/week for 28 weeks. Three - four days per week for one year. 1 day per week for 12 weeks. 1-2 days/week for 15 weeks. 2016, 2 days a week for 12 weeks. January 18th until April 26,2018 1-2 times a wk. 1-3 days per week, total of 45 weeks (3 semesters). I have been placed with a Sutter provider since Aug 2017. I have been with a different provider with 1 or 2 days per week.
3. At what point in your APC curriculum did your Sutter preceptorship begin (e.g. Clinical 1 of 3)?	Varied periods from start of clinicals to the end.	Clinical 2 of 3. Clinical 1. May 2018. September 2017. Semester 3 of 5. 2 of 3 and 3 of 3. Clinical 3. Clinical 5 of 5. Clinical 3 of 4. September 2017. I began in my clinical rotation 1 of 3 and have continued through clinical semester 3.
4. What type of clinician did you precept with: NP, PA, MD, CNM, other	NP: 36% PA: 27% MD: 36%	Both MD & NP in 28 wk period. MD & CNM.
5. Describe your experience with the on-boarding process to work with a preceptor. outstanding, excellent, satisfactory, needs improvement	Outstanding: 55% Excellent: 36% Satisfactory: 9% Needs improvement: 0%	I wish I had a short training course for EPIC before starting with my preceptor. They were both willing to share their knowledge and supportive of me learning. It had some rough patches because the staff at Sutter did not check their emails about my arrival, but the on-boarding person (Wendy) was able to clarify the situation fast enough. She even spent time on the phone with me to ensure there were no more glitches. Both had experience as preceptors.

		My preceptor was L[redacted]at Los Banos Memorial Hospital. She was an exceptional preceptor! The first Preceptor I was going to shadow fell through. [redacted] made sure she found an excellent preceptor for me. I was so grateful.
6. Was your access to Epic made in a timely manner? Yes/No; if no, what was the wait time and the reason?	Yes: 82% No: 18%	My password did not work and it did not allow me to make entries in the patients' chart. I felt like a burden to the preceptor. However, I only had MA access which made it difficult to chart in certain instances. Had to wait for the next class - 3 weeks, I believe.
7. Were you able to use Epic during patient encounters? Yes, No, free text 'please describe'	Yes: 82 No: 18	But I wasn't too versed with it, fortunately EPIC was user friendly; however I had a hard time navigating some areas of EPIC. I was not allowed to document live but was able to access information before the visit and after the visit. Sometimes due to having the MA access, I could not chart on certain things. Yes, with some understandable limitations, but the orientation to Epic was inadequate.
8. Did your experience with a Sutter preceptor meet your school's clinical objectives? Yes, No, free text 'please describe'	Yes: 91% No: 9%	My best experience was while working with the NP at Sutter OBGYN in ELk Grove. She was terrific. All the other OBGYN MDs seemed to have no time for an NP student. hence the first few weeks were questionable. It took a while to find the NP in Elk Grove and it was all thanks to the Manager [redacted] who decided to find me that preceptor. It was the best learning experience. Not enough procedures. [redacted] took time out of her busy schedule to precept me. She always made me feel welcome to ask questions. Plus, not only did she make the time to answer those questions she made sure I understood them. [redacted] is a great mentor, leader and physician. She met my HNU's clinical objectives above and beyond.

9. Are you interested in working at a Sutter clinic following graduation? Yes, No, free text 'please describe'	Yes: 58% No: 42%	The clinic where I was, I felt like most of the MDs there aren't supportive of NPs, in addition, the company isn't paying NP enough. I enjoyed my experience and admired the organization's commitment to patient care. It was very professional and focused on patient satisfaction. I have been offered a job at a Sutter clinic. From my Sutter Health experience, I love the team work and collaboration amongst staff. I enjoyed working in an atmosphere where staff is appreciated and supports one another. I also love the diversity of the patient population. I would love to if there are openings!
10. If you have graduated or will be graduating this semester, have you applied or had an interview at a Sutter office? Yes, No, free text 'please describe'	Yes: 9% No: 55% other: 36%	I have not explored that option yet but would like to hear more information about it. I am continuing my education for the DNP, hence I cannot apply until I pass my boards next year. See above. Tentative start date July 3, 2018. Not yet. Plan to apply closer to my graduation date.

Appendix L. Sample of Evaluation for CMEs



Sutter Health University

The 5 Steps

Name: *
Please type in your first and last name

Example

Today's Date: *
Please click on today's date

10/11/2019

Home Affiliate:
Please type in the name of the affiliate where you currently work

Sutter Health

The "5 Steps" video was valuable.

- Strongly Disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly Agree (5)

1. What do you do if you have "EPIC Hiccups"?

- Call the help desk
- Ask the supervisor to fix it
- Don't worry about it

2. What was most helpful about this video?

- Providing guidelines for how to manage the first day of meeting with preceptee
- Having someone give them a tour if you can't
- Getting to know them helps with planning for their clinical experience

3. Do you need any further clarification on this topic or would you like to leave any feedback? *

none

3a. If you would like further clarification or follow up on your feedback, please provide your email address below:

4. What three things will you do differently as a result of this learning? *

prepare for the day

5. How will you operate differently within your team as a result of this learning? *

include team

Send me a copy of my responses

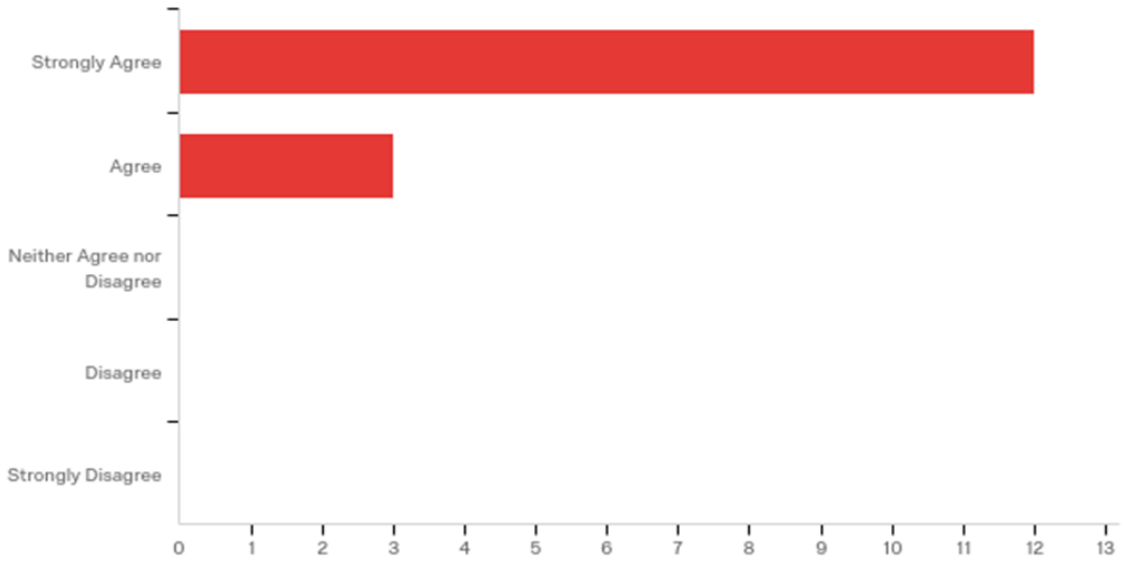
Email address

This field is required

Submit

Appendix M. Preceptor Survey Responses

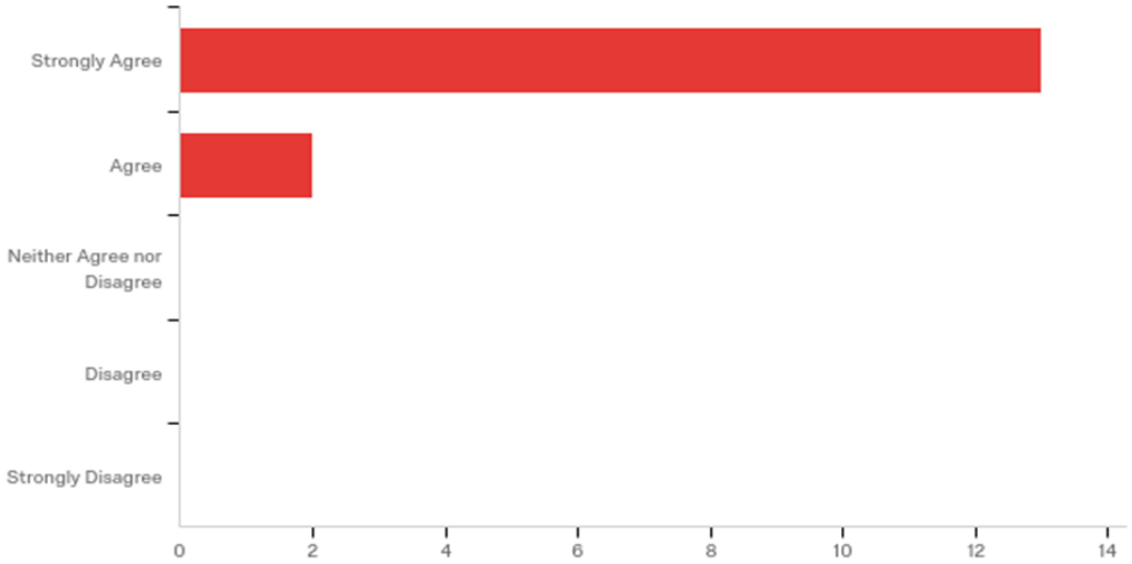
Q1. The microlearning videos are easy to view.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The microlearning videos are easy to view.	1.00	2.00	1.20	0.40	0.16	15

#	Answer	%	Count
1	Strongly Agree	80.00%	12
2	Agree	20.00%	3
3	Neither Agree nor Disagree	0.00%	0
4	Disagree	0.00%	0
5	Strongly Disagree	0.00%	0
	Total	100%	15

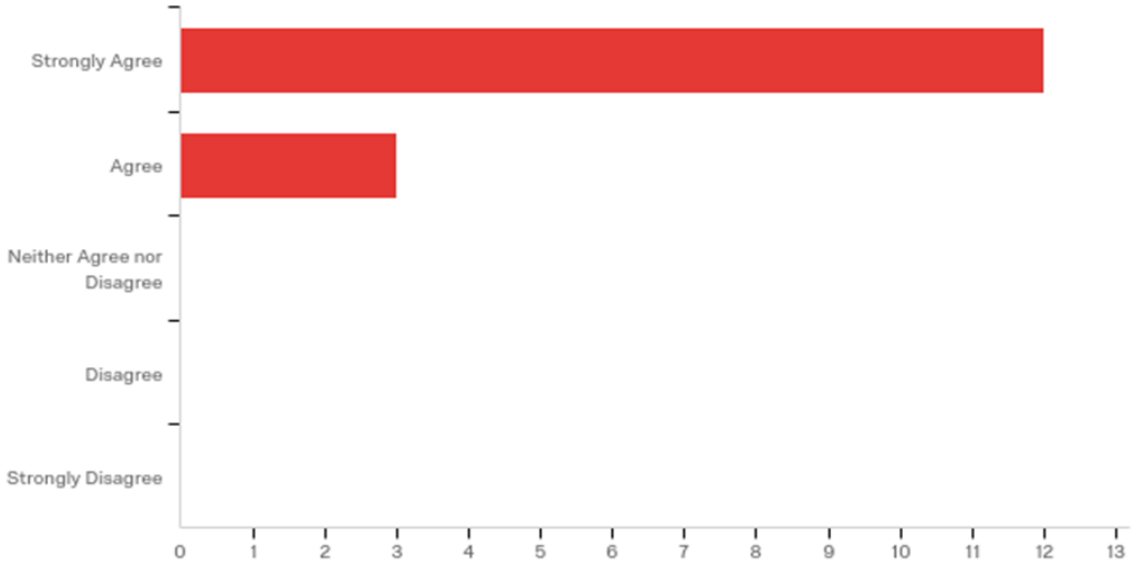
Q2. The language within the video is easily understandable.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The language within the video is easily understandable.	1.00	2.00	1.13	0.34	0.12	15

#	Answer	%	Count
1	Strongly Agree	86.67%	13
2	Agree	13.33%	2
3	Neither Agree nor Disagree	0.00%	0
4	Disagree	0.00%	0
5	Strongly Disagree	0.00%	0
	Total	100%	15

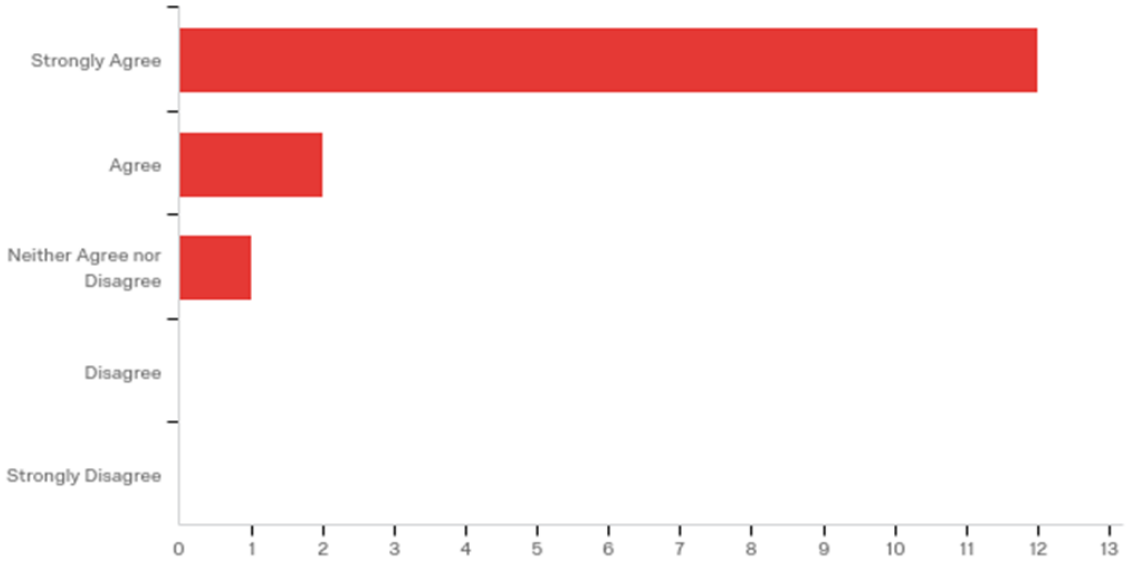
Q3. The videos are high quality.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The videos are high quality.	1.00	2.00	1.20	0.40	0.16	15

#	Answer	%	Count
1	Strongly Agree	80.00%	12
2	Agree	20.00%	3
3	Neither Agree nor Disagree	0.00%	0
4	Disagree	0.00%	0
5	Strongly Disagree	0.00%	0
	Total	100%	15

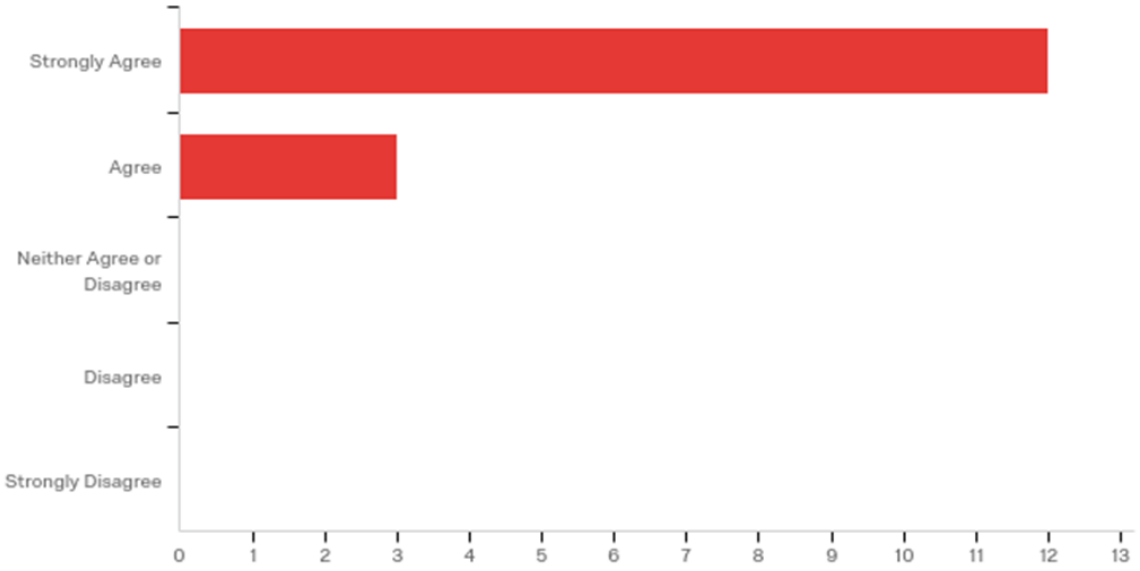
Q4. The videos were informative.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The videos were informative.	1.00	3.00	1.27	0.57	0.33	15

#	Answer	%	Count
1	Strongly Agree	80.00%	12
2	Agree	13.33%	2
3	Neither Agree nor Disagree	6.67%	1
4	Disagree	0.00%	0
5	Strongly Disagree	0.00%	0
	Total	100%	15

Q5. The videos are helpful for precepting.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The videos are helpful for precepting.	1.00	2.00	1.20	0.40	0.16	15

#	Answer	%	Count
1	Strongly Agree	80.00%	12
2	Agree	20.00%	3
3	Neither Agree or Disagree	0.00%	0
4	Disagree	0.00%	0
5	Strongly Disagree	0.00%	0
	Total	100%	15

Appendix N. Statement of Non-Research Determination

Student Name:_____Tarina Levitt-Trujillo_____

Title of Project: Strengthening the Advanced Practice Clinician Workforce Pipeline Through Preceptor Education and Support

Brief Description of Project: Develop a series of micro-learning modules to support APC preceptors support students and newly graduated APCs. These are "Just in Time" modules that will help the preceptors manage preceptee issues.

D) **Aim Statement:** By May 1, 2019, develop, implement, and evaluate a micro-learning video series library for APC preceptors.

B) Description of Intervention:

Video modules will be delivered to preceptor email and available in a library for preceptor to review as needed. The modules will offer tips on how to give feedback, plan daily experiences for preceptee, understanding role as preceptor, and other "tips". By completing modules, CMEs will be available.

C) How will this intervention change practice?

Preceptors will be more willing to take APC students, and assist with the development of these individuals. This will help with retention of this resource within the organization as well as build a robust APC pipeline for . These modules will offer tips to change the way that preceptors may have previously acted towards students and new graduates, encouraging a positive interaction and understanding.

D) Outcome measurements:

The outcomes will be measured using analytics from the delivery platform Myemma. These analytics will determine how many emails were opened, and we are looking for a 25% engagement in the videos. Another way to measure outcomes of engagement will be through rewarding CMEs to the clinicians engaged in the videos that have completed a post evaluation. Another option to explore would be an evaluation of the preceptors by the preceptees.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used:
(http://answers.hhs.gov/ohrp/categories/1569)

X This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

Project Title:	**YES**	**NO**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	**X**	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	**X**	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	**X**	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards.	**X**	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	**X**	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	**X**	
The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	**X**	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	**X**	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: *"This project was undertaken as an Evidence-based change of practice project at X hospital*	**X**	

or agency and as such was not formally supervised by the Institutional Review Board."		

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME (Please print):
___Tarina Levitt-Trujillo_____
Signature of Student:
_____DATE_____

SUPERVISING FACULTY MEMBER (CHAIR) NAME (Please print): ___
_Dr. Alexa Curtis__
Signature of Supervising Faculty Member (Chair):
_____DATE_____

Appendix O. SmartSheets Participant Data

Title	Time Trial Participants	Preceptor Participants	Total SmartSheets Participants
Preceptor's 4 Roles	5	2	7
ACE Your Feedback	5	0	5
ARCC	4	0	4
Assess Ability	4	0	4
Coaching for Opioid Interactions	5	0	5
Expectations for Interactions	4	0	4
Learning Plan	5	2	7
Building Your MA Preceptor Rela	5	3	8
Mess up, Bounce back	4	0	4
More or Less	4	0	4
Next Time	4	1	5
Phases of Preceptorship	5	1	6
Preserving the Relationship	4	0	4
Priming the Pump	4	1	5
Probing for Evidence	4	0	4
Self Diagnosing Patient	5	0	5
Softer Start	5	0	5
Take Care of Yourself	4	0	4
The Reason	4	0	4

Appendix P. Organization Letter of Support

March 4, 2019

To Whom It May Concern:

This letter of support acknowledges that Sutter Health is aware and supports Tarina Levitt-Trujillo MSN, RN, PHN in the development of her doctoral project for Doctorate of Nursing Practice Program, University of San Francisco.

Tarina partnered with the steering committee for an advanced practice clinician system initiative and was tasked with developing electronic learning content for new student preceptors within our organization. She completed this and is now tracking usage throughout 5 medical groups.

Please let me know if you have any questions.

Thank you,
Surani

Surani Hayre-Kwan, MSN, MBA, RN, FNP-BC, FACHE, FAANP
Director, Professional Practice & Nursing Excellence
Office of Patient Experience
Sutter Health
Administration