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A needs assessment & implementation strategy of the emergency nurse practitioner post-graduate certificate.

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A Needs Assessment & Implementation Strategy of the Emergency Nurse Practitioner Post-Graduate Certificate

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Abstract

Nurse Practitioners have been utilized to meet the growing needs of emergency departments during the shortage of Emergency Medicine-trained physicians. Stakeholders have recognized the benefits that Nurse Practitioners (NP) bring to Emergency Departments (ED) in providing quality, evidence-based, cost-effective quality care. However, there is a confusion of the emergency nurse practitioner (ENP) role and scope of practice by facilities, physicians, state boards of nursing, credentialing bodies, and patients that limit the ENP from practicing at their full scope of practice. To establish the role and expand the NPs' knowledge and skills to meet the needs of the ED setting, a post-graduate ENP certificate was established. These programs have proven to be effective in increasing the ENP knowledge, procedural skills, and communication skills that are unique for the ED setting. Currently, there are three trajectories that an advanced practice nurse can take to apply for theENP certification board (1) the most used method is the portfolio based route; (2) completing an ENP program from a university; (3) a currently certified and licensed Family Nurse Practitioner (FNP) can complete an ENP focussed fellowship program. Kentucky has over 90 EDs, all that employ a minimum of one NP with the majority holding an FNP certification. However, that are no formal emergency-specific certification programs or continuing education programs. Kentucky emergency medical directors understand the gap in NP education for emergency-specific training and certification, but an advanced nursing practice expert needs to move this specialty nursing certification forward.

Keywords: Emergency Nurse Practitioners, ENP, ENP post-graduate certificate programs, ENP certification.

Introduction

Emergency departments (EDs) have utilized emergency nurses to assist physicians to meet growing demands since the 1970s and nurse practitioners (NPs) since the 1980s (Wilbeck et al., 2015). With the growing demand for NPs in the ED setting and with current physician shortages, the demand for appropriately trained NPs with emergency advanced-practice nursing competencies are higher than ever. However, there are limited educational programs available to prepare NPs for the unique needs of the ED (Wilbeck et al.,2015). Since the 1980s, NPs have staffed the ED with the majority certified as Family Nurse Practitioners (FNP) who practice without any formal emergency specific education (Ramirez et al., 2018).

In 2006, The National Organization of Nurse Practitioner Faculties (NONPF) established entry-level competencies based on population-specific preparation of family, adult-gerontology acute or primary care, pediatric acute or primary care, women's gender-specific, neonatal, and psych/mental health (NONPF, 2006). Since the Emergency Nurse Practitioner (ENP) is not listed as an entry- level, population-based competency group, the ENP certification is considered a sub-specialty: competencies are determined by certification organizations, and additional education is needed beyond the entry-level proficiencies (Ramirez, Wilbeck, & Evans, 2018). The American Academy of Emergency Nurse Practitioners (AAENP) (2018) defines the ENP role as care of the ED patient which encompasses the evaluation, management, and treatment of patients across the lifespan with illness or injury of varying complexity that is delivered by clinicians who are educated and trained to comprehensively address a wide variety of illnesses and injuries, ranging from resuscitation and stabilization of life-threatening health problems. Emergency care is not defined by a practice setting and takes place within urban, suburban, rural, and frontier/remote settings. The need for NP education specific to the emergency setting led to the development of specialized graduate academic programs. As of 2020 AAENP has approved ony 11 ENP academic programs in the US that are designed to prepare the NP specifically for

the emergency role (AAENP, 2020). Registered nurses who are not certified as an NP can enroll in an FNP program with added emergency-specific, critical care didactic training and clinical content, which will prepare the graduate to sit for both the entry-population boards as well as the ENP sub-specialty boards. Alternatively, candidates who have already obtained an FNP specialization can obtain a post-graduate certificate to meet ENP-specific competencies. In the past, ENPs were first certified as acute care NPs, but acute care programs lack pediatric and women's health content and do not support the ENP model, leaving FNP as the appropriate entry-level certification (Hoyt et al., 2018). The development of the Scope and Standards of Practice in 2016 by AAENP (revised in 2018), guides ENP education by detailing 15 skills competencies and 5 knowledge domains which are the foundation of ENP practice.

According to AAENP, a majority of the NPs working in the ED are not certified as ENPs. In a 2015 survey of NPs, AAENP found that of the 205,000 licensed nurse practitioners in the United States, 6% (>12,000) are practicing in emergency care settings. These settings include EDs, urgent/fast track units, observational units, ambulatory urgent care settings, and correctional care facilities. The AAENP survey further revealed that the majority of these NPs certified as an FNP (77.5%) or Adult-Gerontology Acute Care (AG-ACNP) (30.8%), with only 23% holding an ENP certification. Another study by the American Association of the Nurse Practitioner Certification Board (AANPCB) (2016) yielded similar results. A practice analysis of NPs practicing in EDs from January-April 2016 found that 88% of NPs working in EDs received emergency-specific training primarily through on-the-job training or continuing education rather than a formal education program. Lack of formal preparation has led to poor standardization of the ENP role, which results in confusion and a lack of confidence in the skills and competences of NPs working in high acuity ER settings.

In 2013, the American College of Emergency Physicians (ACEP) released a policy statement introducing guidelines regarding the role of Physicians Assistants and Advanced Practice Registered Nurses in the Emergency Department. This statement asserts NPs cannot replace the medical expertise

provided by emergency physicians. ACEP also states that any NP working in an ED should have acquired specific experience or specialty training in emergency care and should receive continuing education in providing emergency care. They stress (1) the importance for physicians to understand the scope of practice of NPs as defined by each state; (2) knowing state laws and regulations for NP practice; (3) possessing specific knowledge of the physician's role in NP collaboration or state-regulated supervision. ACEP recommends that all NPs participate in a supervised orientation program, including a knowledge base specific to ED policies and procedures and requisite skills to function safely and appropriately in the ED. The document states that physicians should be responsible for the overall direction of the NPs activities and that NPs should not provide unsupervised care (ACEP, 2013).

Green (2018) discusses that physicians have verbalized discontent with the expanding role of the ENP. They argue that there is no standardized pathway for emergency-specific NP education. FNP programs focus on primary care education and training, which includes care of minor acute illnesses and chronic care and incorporates few ED-specific clinical hours. This foundational level of education does not adequately prepare the FNP to work in the acute area of the ED. Green recognized that the ENP certification is important, but it is a relatively new certification that has not brought any greater acceptance of the ENP role in the ED. Practices are still hiring FNPs to fill positions with the knowledge that they will spend their first few years honing ED-specific competencies through on-the-job training. Appropriate education and ENP certification are the best vetting process to ensure ENPs are qualified, competent, and maintain the critical intellectual and procedural skills necessary to practice in the emergency environment. Dian Dowling Evans, Ph.D., ENP-C, a nursing professor at Emory University, acknowledges that NPs appropriately certified in emergency-specific care will allow employers to reduce the cost and time of onboarding. In 2018 Dr. Sandra Schneider, ACEP director of emergency medicine, discussed in an interview with Green, that emergency medicine urgently needs to address the question of the scope of NP practice in the emergency setting. ACEPs position states that advocacy organizations

are pushing for NP independent practice without considering the fundamental need for collaborative practice in the ED setting (Green, 2018). ACEP opposes independent practice for NPs within the ED setting because in most EDs, the ENP works closely with physicians in a multidisciplinary team approach. The essence of emergency medicine is a collaborative team approach to provide efficient, quality, evidence-based care for all patients in the emergency environment (Green, 2018).

Additional confusion regarding the scope of ENP practice comes from variation in ENP licensure requirements. The board of nursing in each state can have a different interpretation of the ENP certification and licensing protocols leading to confusion which can contribute to the lack of awareness regarding the importance of ENP certification (Evans & Wilbeck, 2018). Some states that base licensure specifically on the 2008 AACN consensus model do not recognize the ENP as an entry-level practice specialization. Therefore, those states require that candidates earn an FNP as an entry-level certification first or in conjunction with ENP training to be licensed in the state. Other states consider ENP specialization as an acceptable, entry-level, first-degree, and will award licensure without concurrent specialization. Conguency of emergency-specific training that builds on the FNP population role and includes the practice standards definded by the AAENP (2018) is necessary to ensure NPs working in the ED setting are functioning optimally but, more importantly, providing safe, standardized care with the critical intellectual and procedural competencies necessary for emergency practice. (Green, 2018).

Literature Review

Several studies have been conducted to evaluate the clinical competency of the NP working in the ED. Most studies compare the NP to the MD practice in satisfaction or care, reduction of length of stay, door to provider times, door to pain medication, as well as reducing the time to discharge. All studies indicate an improved level of efficiency within the ED when the NP role is optimally applied (Smith & Hodgins, 2018; Tucker & Bernard, 2015; Jennings et al., 2015, Chang et al., 1999; Dinh et al.,

2012). The studies found positive feedback for the support of NPs practice in the ED. However, most of these studies were only at one facility using a convenience sample. Smith and Hodgins (2018) conducted a synthesis of research of the ENP practice and found limited observation of the clinical outcomes comparing the educational preparation, scope of practice and experience levels of NPs in the ED. They did find that most facilities underutilize ENP and limit their practice. AAENP (2015) conducted a membership survey as a needs assessment for national interest for the ENP certification and found that 73.6% would likely take the certification exam when available. This was a limited convenience sample of persons that belonged to the specialty group.

Needs Assessment

Currently, in Kentucky, there are over 90 EDs, with 26 deemed major regional medical centers, each employing a minimum of one NP with very few that are ENP certified. There are currently 7,960 practicing NPs in the state of Kentucky with a majority certified as FNP (6010) and adult-gero primary care (288) by the KBN. Similar to the national trend, most NPs employed in Kentuckys ED are trained on-the-job due to sparse numbers of board-certified ENPs in the state. This limits the availability of emergency-specific trained NPs for emergency care settings.

Status of Kentucky

The Kentucky Board of Nursing (KBN) released an opinion statement in the Spring of 2017, stating that primary care NPs should not provide care for the unstable, critical, or complex patients because that is practice is outside of their scope of practice (Hagan, 2017). The primary care NP must seek additional formal post-graduate education to expand beyond the primary care role. The statement also clarified that a primary care NP could see patients in a fast track area of the ED and treat patients who present with problems that are commonly seen in primary care settings, such as otitis media, minor injuries, sprains, etc. (Hagan, 2017). This led to several EDs in Kentucky to question the scope of practice and preparation of NPs working in emergency care. To clarify the KBN's opinion of ENP certification, a

correspondence was obtained from Myra Goldman (2019) APRN Education/Practice Consultant, which, in part, states:

> "While specialty certification would demonstrate educational preparation and clinical competency for the FNP to work in the ED, it is not, as defined in the regulation, as one of the roles of population foci recognized for licensure. In a review of practice opinions over the past two years, the practice committee has often been of the opinion that as long as the Advance Practice Registered Nurse (APRN) is educationally prepared and clinically competent to perform the procedures necessary to care for the individual in a specific setting, and provided it is consistent with their role as population focus, then it has been determined to be in the scope of practice. However, even though the Board may determine it is within an APRN's scope of practice, those that employ a nurse practitioner may not view it as being in their scope of practice. If the employer determines that the APRN may not perform the procedure or puts limitations on APRN practice within that setting, then the APRN would need to able by the contract or job description under which they were hired" (M. Goldman, personal communication, Feburary 14, 2019).

Seeking Certification

The 11 ENP academic programs currently approved by the AAENP in the United States are unable to provide ENP certification in adequate numbers to meet the significant need for ENPs. The program that is closest to Kentucky is Vanderbilt University in Tennessee with others in Pennsylvania and Illinois. All programs are private institutions with no public universities offering an ENP program at this time. In 2015 the AAENP conducted a membership survey and asked if an ENP certification was available, would non-certified NPs seek certification. Almost 74% reported they would likely take the certification exam. This high response rate demonstrates significant interest in ENP certification (AAENP, 2015).

Telephone Survey

Regional Key Stakeholders were identified and contacted in a personal telephone survey to gain support from emergency medical directors or nursing directors for an ENP cetificate program. This telephone survey found that all key stakeholders would be in support of a program for FNPs to obtain emergency-specific education and clinical skills. This finding was seen as positive support for a post-graduate ENP program that will provide a highly qualified, evidence-based ENP workforce for EDs in the state of Kentucky. An additional personal survey conducted among NPs practicing in emergency care settings estimated that 50-60% of interviewed participants expressed interest in a post-graduate ENP program. This indicates there is need and interest in a local ENP certifiaction program. However, several recent mergers of EDs in Kentucky, changes in ED leadership, the COVID-19 pandemic, lack of realized benefits by key stakeholders, and prioritization for ED residents are all barriers to starting a program. Prioritization of medical residents for procedures and clinical sites is a signigicant barrier for ENP education and certification because those sites have a limited capacity, and learning these skills is a necessary component to ENP training. An additional barrier exists because patients have limited knowledge of the scope of NP practice. Given many other factors, emergency specialty practice is not a concern to the general public. Educating the private sector about the benefits of reciving care from an ENP in the emergency care setting could provide additional support for ENP certification.

Problems Identified

Although key medical directors stated that they would like ENPs to be certified, all of them fell short in offering direct clinical support for the program. This limits the ability to create a clear pathway for students to obtain emergency-specific skills and competencies. Several ED medical directors stated that emergency residents will take priority for clinical sites and skills. Dr. Danzel with UofL emergency services stated that any procedural skills will be restricted to residents only, and clinical spots will be only be available to ENP students from the months of October to June (Dr. D. Danzel, personal

communication, October 27, 2019). He intimated that ENP students would not be able to perform key proceedures such as intubations, chest tube insertions or reducing fractures because there is not enough of those types of procedures to sustain both resident and ENP certificate training. Norton Healthcare Sytem utlizes a private contracted physcians group, Southern Emergnecy Medicine Specialisty, to provide emergency physicians to staff their EDs. Dr. Robert Couch was the Director of this private contracted group passed away before obtaining a face-to-face meeting to discuss the program and possible sites. Currently, there has been no replacement for his role. Politics has also played an important role in the lack of potential clinical sites., About half of the EDs in the city are managed by private contracting physician groups that compete for services. Private groups tend to be profit based and place less of an emphysis on forming a highly skilled workforce. These groups, in general, tend to be content with paying an uncertified NP less to do the job. However, this may be slowly changing. Recently the ER provider group at Nortons Women & Children was converted from a private contracted service to hospital employees. The Norton organization overall is committed to ensuring that all providers maintain population specific training in their area of work. If Norton continues to change over their EDs from private contractors into hospital employees this could increase the local demand for NPs that are specifically trained as ENPs. Recently, U of L Health just acquired Kentucky One Heathcare creating a merger among several hospitals with EDs. U of L Health is currently in the process of streamlining all hospital EDs under one management team. It will be at least a year before U of L Health will have a comprehensive understanding of ED demand and approiate sta ffing needs now that the system is merged. This information will be useful in future planning of an ENP certification program but currently the system is in a state of flux and it is difficult to determine current demand. Indifferent physician support for the program,as well as the aforementioned recent mergers and shifts in leadership and infrastructure all serve as barriers to the immediate development of an ENP certifiacte program. In addition, at one site in Danville, Kentucky, the medical director verbalized a high interest during the

telephone survey for the development of the ENP program. During follow up, political issues between the Danvilley, KY facility's medical director and UofL's medical director caused him to back out of a face-to-face meeting intended to outline the program and obtain written support (Dr. Guerrant, personal communication, December 9, 2019). Lack of dedicated clinical sites and uncertainy in availability of skills training limit the ability to train ENPs in specific skills necessary to meet ENP competencies. Skills labs that are university based, a critical component for the development of the ENP program, also give priority to residents. The absence of skill lab space for a future ENP program would make it necessary for the program to set-up dedicated ENP student skills/procedures labs, which would increase program administrative costs.

Another barrier to determining need for an ENP certificate program is the death of information regarding the current status of ENPs practicing in the state of Kentucky as there are no tracking information on ENP certified NPs in the state. There also is no tracking of NP practice setting to identify those that are working in an acute care, emergency environment. Several social media sites were utilized to identify NPs currently employed in the acute care emergency department with minimal responses. Identification of ENP and NPs practicing in the ED would show the statistics to identify the need for additional emergency-specific educational needs in the state of Kentucky.

Program Development

The program development for the ENP post-graduate certificate program started with the research of the existing programs. There are currently 11 ENP certification programs at this time and each program has its unique style that can be attractive to NP that desire emergency specific skills and knowledge (AAENP, 2020). A post-graduate program provides high-intensity postgraduate didactic and clinical training that will deliver a cost-effective opportunity to prepare ENPs for a seamless transition into collaborative, high quality, evidence-based care for the emergency patient (Rudy & Wilbeck, 2017). Requirements for the ENP program include 500 direct supervised clinical hours in the emergency setting.

In a study by Bray et al. (2009) that examined the minimum clinical hour requirements for an FNP, the findings indicated that there is no scientific evidence proving the exact number of clinical hours needed for clinical confidence. However, they did recognize that researchers needed to identify not only the numbers of clinical hours but also the type of clinical required for the ENP student to demonstrate competence. The study authors point out that quality, ED-specific sites are superior for delivering the content necessary for ENPs to demonstrate competent care delivery. The suggestion is that 500 hours of quality clinical hours was the recommendation for clinical confidence.

The AAENP established practice standards for the ENP in June of 2018 (AAENP 2018). These practice standards must be built into any ENP program, represent the integration of knowledge, psychomotor ability, and point to the need for the ENP student to perform procedures within the emergency care setting in collaboration with the multidisciplinary healthcare team. Procedures in this specialty encompass simple laceration repair to life-saving procedures. The practice analysis data collected sequentially identified procedures frequently performed in the emergency environment within 5 domains of ENP practice (Appendix 1) and 15 specific procedural areas (Appendix 2). *ENP Exam*

The AANPCB (2018) reports the AANP is the only certifying board to offer ENP certification. There are three options for eligibility for the exam. These options are available only for AANP or previously ANCC certified FNPs who hold and maintain an active RN license.

1. Option 1
    a. Minimum of 2000 direct, emergency clinical practice hours as a certified NP in the past 5 years.
    b. Evidence of 100 hours of emergency-related continuing educational credits.
    c. Minimum of 30 continuing education credits of emergency-related procedural skills within those 5 years that are listed in Appendix 2.
2. Option 2
    a. Completion of an approved emergency care graduate or post-graduate NP program, or a dual FNP/ENP program.
3. Option 3
    a. Completion of an approved emergency fellowship program

Tyler et al. (2018) used the AANPCB 2016 practice analysis to create a content outline and specifications for the ENP certification examination, and to obtain descriptive information about the ENP specialty practice. This led to the refining of the professional scope and standards of practice, job description, performance appraisals, research, and policy development. These practice analyses are the basis for methodology and process that is used by a professional organization in the development of the specialty practice. They used this analysis in two phases to develop the FNP certifying exam. The first phase created a qualitative description of the basics if ENP practice that included the task performed, the knowledge required, and procedures that are commonly performed in the emergency care. The second phase validated the qualitative description through a national survey. Using these two unique rating scales (i.e. frequency and harm scales) they were able to define the five ENP practice domains and 22 job tasks across the domains, 10 types of patient conditions/emergency types, 42 knowledge areas, and 68 procedures performed by ENPs. This created a layout for the foundation of the ENP certifying exam. The Cronbach alpha reliability for the 6 rating scales used ranged from 0.86-0.94 which demonstrated reliability as it is well above the recommended 0.70 threshold (Tyler et al., 2018). This led to the creation of emergency-specific practice specialty, which is now well established by multiple organizations that define emergency practice settings, job descriptions, educational programs, competencies, and national certifications, and that are the basis for content in emergency-practice specialty journals, as well as is the focus of ENP research (Tyler et al., 2018).

Testing for the ENP exam focus is on the Five Domains seen in Appendix 1 (AANPCB, 2018). The AANPCB ENP certification exam tests on these Five Domains, and the percentages or frequency of exam questions as well as patient conditions frequency on the certifying exam is broken down as follows.

- Medical Screening 20%
- Medical Decision Making/Differential Diagnosis 27%
- Patient Management 31%
- Patient Disposition 14%
- Professional, Legal, and Ethical Practices 8%

Patient Conditions

- Thoracic-respiratory disorders 15%
- Cardiovascular disorders 12%
- Dermatological/Skin tissue disorders 8%
- Abdominal & Gastric disorders 14%
- Musculoskeletal disorders (non-traumatic) 11%
- Renal/Genitourinary disorders 8%
- Nervous System disorders 6%
- Head, Ear, Eye, Nose & Throat disorders 8%
- Psycho-behavioral & Other disorders 7%

These conditions as well as frequencies were based on the ENP practice survey conducted by the AAENP in 2018 that reflect the current emergency environment for the exam content. Medical management and differential diagnosis make up more than one quarter of the test and is proven to be the building block of ENP competent practice (AANPCB, 2018).

Conclusion

The lack of emergency-specific trained Nurse Practitioners accompanied by lack of support and understanding of the role of an ENP by states boards of nursing and stakeholders has led underutilization of the NP in emergency care areas. Nurse Practitioners across the nation need to seek national ENP certification as well as educate key stakeholders to the standards and scope of practice for the ENP. Evidence for these needs is found across the literature and is the bedrock on which a sustainable rationale is built creating an ENP certification specialty. An entry-level ENP certification process has the potential to improve patient outcomes and provide efficient ED care provision through the utilization of NPs in the emergency care setting. With a lack of both emergency trained physicians and emergency-specific trained NPs, the overcrowding in EDs has worsened due to increased acuity and volume of patients. Collaborative multidisciplinary teams with physicians and nurse practitioners are needed to meet these demands. It is critical for the physicians, key stakeholders, and patients to understand the role of the emergency educated NP to improve efficiency and patient outcomes in this demanding emergency environment. In Kentucky there has been several barriers that are needed to be overcome in an effort to fully support an ENP program at this time. Support for formal educational

programs by medical directors, physicians and NPs desiring or currently employed in the ED that remain consistent with the ENP standards of practice will strengthen interprofessional relationships and improve the effective utilization of ENP in the state of Kentucky. The success and vitality ENP educational program that is met with enthusiasm by EDs can translate into increased collaboration for efficient EDs.

Appendix A

Five Domains of ENP Practice

1. Medical Screening
2. Medical Decision Making / Differential Diagnosis
3. Patient Management
4. Patient Disposition
5. Professional, Legal, and Ethical Practices

Medical Screening

- Classify patient acuity level
- Stabilize the critically ill patient
- Perform a medical screening exam
- Apply crisis management knowledge
- Apply disaster and mass casualty management knowledge

- **Medical Decision Making/Differential Diagnosis**
- Prioritize the list of differential diagnoses, considering the potential diagnoses with the greatest potential for morbidity or mortality
- Evaluate patient safety/harm reduction
- Implement medical decision making for management plan development
- Interpret diagnostic studies (EKG, radiology, body fluid)
- Utilize evidence-based practice

Patient Management

- Order and interpret diagnostic studies based on the pre-test probability of disease and the likelihood of test results altering management
- Perform diagnostic and therapeutic procedures/skills as indicated
- Select and prescribe appropriate pharmaceutical agents using current evidence-based practice
- Collaborate and consult with other healthcare providers to optimize patient management
- Evaluate the effectiveness of therapies and treatments provided during an observation
- Reassess to identify potential complications or worsening of the condition
- Consider additional diagnoses and therapies for a patient who is under observation and change treatment plan accordingly
- Simultaneously manage multiple patients using situational awareness and task switching
- Initiate/maintain emergency stabilization
- Apply pharmacological therapies
- Initiate and/administer resuscitation
- Perform observation and reassessment
- Administer pain management according to national standards
- Organize and administer sedation (as per facility guidelines)
- Facilitate team-based practice/ management

Patient Disposition

- Determine appropriate and timely patient disposition including admission, discharge (including follow-up plan), observation, or transfer as appropriate
- Initiate/facilitate consultation and collaboration
- Integrate patient and family education and counseling
- Formulate appropriate disposition

Professional, Legal, and Ethical Practices

- Record essential elements of the patient care encounter to facilitate correct coding and billing
- Integrate cultural competence into patient care
- Identify the needs of vulnerable populations and intervene appropriately
- Manage patient presentation demonstrating knowledge of EMTALA regulations
- Adhere to professional ethical standards in emergency care
- Assess staff/personal safety
- Support intra- and interdisciplinary communication
- Assess for maltreatment/abuse/ neglect
- Incorporate utilization of Forensic specialists when appropriate
- Consider legal, professional, and ethical issues in practice
- Exhibit cultural competence in practice
- Acknowledge and intervene for vulnerable populations
- Utilize performance improvement to provide quality patient care

(AAENP, 2018)

Appendix B

ENP Procedural Areas

Airway Techniques
- Intubation
- Airway adjuncts
- Mechanical ventilation
- Non-invasive ventilatory management
- Ventilatory monitoring

Resuscitation
- Cardiopulmonary resuscitation (lifespan)
- Post-resuscitative care
- Blood, fluid, and component therapy
- Central venous access (US-guided)
- Intraosseous infusion
- Defibrillation

Anesthesia & Acute Pain Management
- Local anesthesia
- Regional nerve block
- Procedural sedation and analgesia

Gastrointestinal
- Gastrostomy tube replacement
- Nasogastric tube
- Paracentesis

Cardiovascular and Thoracic
- Cardiac pacing
- Cardioversion
- ECG interpretation
- Thoracentesis
- Needle/Tube thoracostomy

Cutaneous
- Escharotomy
- Incision and drainage
- Trephination, subungual
- Wound closure techniques
- Wound management

Head, Ear, Eye, Nose, and Throat
- Control of epistaxis
- Slit-lamp examination
- Tonometry
- Tooth stabilization
- Corneal foreign body removal
- Drainage of hematoma (auricular, septal)

Systemic Infectious
- Personal protection (equipment and techniques)
- Universal precautions and exposure management

Musculoskeletal
- Arthrocentesis
- Compartment pressure measurement
- Fracture/Dislocation immobilization techniques
- Fracture/Dislocation reduction techniques
- Spine immobilization techniques

Nervous System
- Lumbar puncture

Obstetrics and Gynecology
- Precipitous Deliveries
- Sexual assault examination
- Bartholin cyst incision and drainage

Psychobehavioral
- Psychiatric screening examination/medical stabilization
- Violent patient management/Restraint

Renal and Urogenital
- Bladder catheterization
- Urethral catheter
- Testicular detorsion

Toxicological
- Decontamination

Other Diagnostic & Therapeutic Procedures
- Foreign body removal
- Collection and handling of forensic material
- Diagnostic ultrasound
- Procedural ultrasound

(AAENP, 2018)

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