

Nemours Children's Hospital, Florida



Pediatric Surgical Physician Assistant Residency Program



NEMOURS
CHILDREN'S HEALTH

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Program Curriculum

- **Didactic Curriculum**
 - Educational foundation
 - Integrated within clinicals so it is specific to each specialty
 - At minimum will include:
 - Attending M&M
 - Attending surgical education meetings
 - Attending surgical grand rounds
 - Mandatory journal article reading
 - Participation in patient rounds
 - Assist in cases in OR (for surgical clinicals)

- **Clinical Curriculum (52 weeks)**
 - Vacation time: 4 weeks
 - 1 Week Hospital Orientation
 - Suture clinic (1-on-1)
 - OR orientation
 - Epic training
 - WBT
 - General Surgery
 - 13 weeks total
 - Orthopedics
 - 12 weeks
 - Plastic Surgery
 - 4 weeks
 - Hospital Medicine
 - 8 weeks total
 - 2-3 weeks in each: PICU/NICU/EM
 - Urology
 - 4 weeks
 - Otolaryngology
 - 2 weeks
 - Electives
 - 4 weeks
 - CT surgery, neurosurgery, ophthalmology or repeat of core rotation

- **Evaluations**
 - Pre-rotation evaluation
 - Post-rotation evaluation
 - End of program evaluation

Program Objectives

- **Program Objectives:**
 - Practice evidence-based medicine
 - Strengthen surgical skills
 - Strengthen awareness of socioeconomic issues and its impact on patient care
 - Acquire knowledge of pediatric surgical subspecialties for appropriate patient assessment, diagnosis, treatment and management
 - Provide understanding of PA role within the operating room and pediatric surgical subspecialties
 - Provide exposure to variety of pediatric surgical subspecialties
 - Be able to identify medical and surgical emergencies that require urgent vs. emergent care
 - Further strengthen knowledge of surgical procedures, indications, risks and benefits
 - Develop, evaluate and carry out plan of care for pediatric surgical patients
 - Engage in collaborative care management
- **Staff:**
 - Tamarah Westmoreland, MD, PhD — Program Director
 - Anais Andara, PA-C — Program Co-Director, Plastic & Craniofacial Surgery point of contact
 - Ty Reutebuch, PA-C — Program Co-Director, General Surgery point of contact
 - Kait Maher, PA-C — Orthopedic point of contact
 - Yvette Simon, PA-C — Emergency Medicine point of contact
 - Camila Obregon, PA-C — Urology point of contact
 - Christine Willis, PA-C — Otolaryngology point of contact
 - Rebecca Tillery, PA-C — NICU point of contact
 - Jessica Allen, DNP, APRN, CPNP-AC/PC — PICU point of contact

Pediatric General Surgery Objectives

- Mandatory Reading (to be done prior to rotation starting)
 -
- Comprehend and practice enterprise protocols:
 - Appendicitis
 - ERAS
 - Pyloric stenosis
 - Intussusception
 - Lymphadenopathy
 - Mediastinal pathway
- Patient Care
 - Surgical PA residents on the pediatric surgery service should demonstrate the ability to:
 - Evaluate preoperative patients and ensure they are cleared for surgery
 - Manage the fluid, electrolytes and nutritional aspects of pediatric patient
 - Participate in rounds
 - Prioritize patient acuity
 - Manage inpatient postoperative patients
 - Manage inpatient emergencies
 - Plan patient discharge
 - Troubleshoot gastrostomy tube malfunction
 - Provide ostomy and gastrostomy tube care
 - Perform the following procedures:
 - First-assist in minimum of 10 laparoscopic cases
 - Replace a gastrostomy tube
 - Place a foley in female and male patient
 - Place NGT
 - Intra-op TAP block
 - Incision and drainage
 - Neonatal circumcision
- Medical knowledge
 - Surgical PA residents on the pediatric surgery service should understand:
 - The nutritional, fluid and electrolyte requirements of children
 - The pathophysiology, method of evaluation, and management of common pediatric surgical diseases including pyloric stenosis, intestinal malrotation, intestinal atresia, esophageal atresia, abdominal wall defects, anorectal anomalies, congenital lung anomalies, thyroglossal duct cyst, Hirschsprung's disease, appendicitis and pectus excavatum/carinatum
 - Pediatric dosing of medications
 - Radiographic studies: Indications and interpretation
 - Calculate and implement Pediatric Appendicitis Score

Pediatric General Surgery Objectives (Continued)

- Practice-Based Learning and Improvement
 - Surgical PA residents on the pediatric surgery service should demonstrate the ability to:
 - Evaluate published literature in critically acclaimed journals and texts
 - Apply clinical trials data to patient management
 - Participate in academic and clinical discussions
 - Participate in teaching medical students and physician assistant students
 - Attend conferences, educational meetings, grand rounds, M&Ms (Morbidity & Mortality)
 - Present one pediatric surgical topic at education meeting
 - Interpersonal and communications skill
 - Surgical PA residents on the pediatric surgery service should demonstrate the ability to:
 - Communicate effectively with other health care professionals, patients and patient families
 - Effectively and accurately record daily progress notes on each patient
 - Dictate concise discharge summaries and immediate postoperative notes in a timely manner
 - Professionalism
 - Surgical PA residents on the pediatric surgery service should:
 - Be receptive to feedback on performance
 - Be attentive to ethical issues
 - Be attentive to socioeconomic issues
 - Be involved in surgical decision making
 - Be sensitive to gender, age, race and cultural issues
 - Demonstrate leadership
 - Systems-Based Practice
 - Surgical PA residents on the pediatric surgery service should demonstrate the ability to:
 - Understand and be able to explain the indications for studies and tests obtained on patients
 - Assist in tasks involved in planning patient discharge such as — but not limited to — DME orders, setting up follow-up appointments, ensuring medications are ordered, etc.

Pediatric Plastic and Craniofacial Surgery Objectives

- Mandatory Reading (to be done prior to rotation starting)
 - Wound healing part I — Basic science
 - Wound healing part II — Clinical applications

- Patient Care
 - Surgical PA residents on the plastic and craniofacial surgery service should demonstrate the ability to:
 - Evaluate preoperative patients and ensure readiness for surgery
 - Manage the fluid, electrolytes and nutritional aspects of pediatric patient
 - Manage postoperative patients on plastic surgery service
 - Prioritize patient acuity
 - Present patients during rounds
 - Prioritize clinical responsibilities
 - Plan discharge and follow-up care
 - Troubleshoot wound vac malfunction
 - Adequately classify and manage craniofacial deformities
 - Adequately classify and manage pressure ulcers and burns
 - Properly consult other services
 - Treat and assess burned total body surface area using Lund and Browder chart
 - Perform the following procedures:
 - Burn debridement
 - Laceration repair, simple and complex
 - Wound closure
 - First-assist split thickness skin graft
 - First-assist in cleft lip repair
 - First-assist in cleft palate repair
 - First-assist in posterior pharyngeal flap
 - Wound care
 - Infant ear molding
 - Excision of extra digits

- Medical Knowledge
 - The surgical PA resident on the plastic and craniofacial surgery service should understand:
 - Management of fluid, electrolytes and nutritional aspects of post-op patients
 - General medicine principles (e.g., soft tissue infection)
 - Plastic surgery principles such as, but not limited to, skin graft, wound VAC, rotation and free vascularized tissue flaps, z-plasty, cleft palates, cleft lips, velopharyngeal dysfunction, indications for cranioplasty
 - Pharmacologic principles such as, but not limited to, pediatric pain management, narcotic management, dosing of injectable anesthetics
 - Wound healing process, causes of wound delay and care
 - Radiographic studies: indications and interpretation

Pediatric Plastic and Craniofacial Objectives (Continued)

- Practice-Based Learning and Improvement
 - The surgical PA resident on the plastic and craniofacial surgery service should demonstrate the ability to:
 - Evaluate published literature in critically acclaimed journals and texts
 - Apply clinical trials data to patient management
 - Participate in academic and clinical discussions
 - Teach medical students and physician assistant students
 - Attend conferences educational meetings, grand rounds, M&Ms
- Interpersonal and Communication Skills
 - The surgical PA resident on the plastic and craniofacial surgery service should demonstrate the ability to:
 - Respectfully interact with patient and patient's family
 - Respectfully interact with hospital staff
 - Accurately dictate progress notes, history, physicals and consult notes
- Professionalism
 - The surgical PA resident on the plastic and craniofacial surgery service should:
 - Be receptive to feedback on performance
 - Be attentive to ethical issues
 - Be attentive to socioeconomic issues
 - Be sensitive to gender, age, race and cultural issues
 - Demonstrate initiative
- Systems-Based Practice
 - The surgical PA resident on the plastic and craniofacial surgery service should:
 - Be aware of cost-effective care issues
 - Be sensitive to medical-legal issues
 - Have information technology/computer resources available

Pediatric Neurosurgery Objectives

Please be familiar with the following items by reading prior to rotation and then adding to your knowledge base as you come across them.

- Neuroanatomy
- Neuro Exam — Knowledge of neuro-exam and how those findings are relevant
 - Pathologic exam findings to be familiar with:

Hoffman	Absent corneal reflex
Oppenheim	Absent oculovestibular reflex (caloric)
Babinski	Absent oculocephalic reflex (doll's eye)
Clonus	Posturing
Horner's syndrome	Nystagmus
- Medications to be familiar with including use and dosage:

3%NS	Clindamycin
Mannitol	Omnipaque
Steroids	Keppra
Ancef	
- Diagnostic Studies — Recommend be familiar with structures on imaging, when to order and why specific for neurosurgery:

CSF analysis	Shunt series X-ray
MRI brain/spine	Ultrasound brain and spine
CT brain/spine	Flexion/extension X-ray, MRI
- Common Diagnoses — Knowledge of following subjects (including pathology, presenting exam pertinent findings, history, diagnostic studies to order and findings to note, as well as treatment options):

SIADH	Myelopathy
Hyponatremia	Seizures
Diabetes insipidus	AVM
PRES	Subdural empyema
Cushing's triad	Cerebral abscess
Hydrocephalus	Coma
Chiari	Dermoid cyst
Craniosynostosis	Aqueductal stenosis
Brachial plexus injury	Encephalocele
Tethered cord	Craniopharyngioma
Spina bifida	Meningitis

Pediatric Neurosurgery Objectives (Continued)

Plagiocephaly	Dandy walker malformation
Disc herniation	Herniating syndromes
Scoliosis	Klippel-Feil syndrome
Brain lesions	Arachnoid cyst
Head trauma	Pseudotumor cerebri
IVH	Macrocephaly
Ventriculomegaly	Spinal stenosis
Selective dorsal rhizotomy for spasticity/cerebral palsy	

- Miscellaneous

ICP	Wound care
EVD	OR positioning
Shunt tap	Pins for cranial surgery
Assisting in the OR	Shunt programming (when, how and why)

Pediatric Otolaryngology Objectives

- Mandatory Reading (to be done prior to rotation starting)
 - Primary Care Otolaryngology 3rd Edition [Oto-Primary-Care-WEB.pdf \(entnet.org\)](#)
- Patient Care
 - Surgical PA residents on the otolaryngology service should demonstrate the ability to:
 - Perform and complete a full head and neck examination
 - Interpret polysomnogram
 - Interpret audiogram
 - Present consults to attending physician
 - Plan discharge and follow-up care
 - Manage tracheostomy care and complications
 - Understand and explain management of airway emergencies
 - Perform the following procedures:
 - Microscopic otoscopy
 - Cerumen removal
 - Control of epistaxis
 - Tracheostomy tube placement and management
 - First assist in head and neck cases
 - Suturing and suture removal
- Medical Knowledge
 - Surgical PA residents on the otolaryngology service should understand:
 - The practice guidelines for common ENT surgical procedures such as bilateral myringotomy with tube placement, adenoidectomy and tonsillectomy
 - The pathophysiology, method of evaluation and surgical role for conductive vs. sensorineural hearing loss
 - The evaluation of neck masses and formulate a differential diagnosis
 - Radiographic studies: Indications and interpretation
- Practice-Based Learning and Improvement
 - Surgical PA residents on the otolaryngology service should demonstrate the ability to:
 - Evaluate published literature in critically acclaimed journals and texts
 - Participate in academic and clinical discussions
 - Attend conferences, educational meetings, grand rounds, multidisciplinary team conferences

Pediatric Otolaryngology Objectives (Continued)

- Interpersonal and Communications Skill
 - Surgical PA residents on the otolaryngology service should demonstrate the ability to:
 - Effectively communicate with patients and their families
 - Effectively communicate with hospital staff
 - Accurately record progress and consult notes
 - Dictate concise discharge summaries

- Professionalism
 - Be receptive to feedback on performance
 - Be attentive to ethical issues
 - Be attentive to socioeconomic issues
 - Be involved in surgical decision making
 - Be sensitive to gender, age, race and cultural issues

- Systems-Based Practice
 - Surgical PA residents on the otolaryngology service should demonstrate the ability to:
 - Incorporate considerations of cost awareness in patient care as appropriate
 - Enhance patient safety by utilizing social work when appropriate
 - Participate in identifying system errors

Pediatric Orthopedic Objectives

- Acquire knowledge of pediatric orthopedic subspecialties to allow for appropriate assessment, diagnosis, treatment and management of the pediatric orthopedic patients in a busy children's hospital setting.
- Strengthen physical assessment skills essential for the care of the pediatric and adolescent orthopedic patient.
- Develop baseline understanding of indications and associated benefits, risks and potential complications related to the diagnosis and treatment of specific orthopedic diagnoses and procedures using evidence-based medicine.
- Progressively increase responsibility in providing care to patients including assisting in orthopedic procedures and managing inpatients.
- Evaluation and management of pediatric fractures.
- Develop skills for clinic and invasive procedures.
- Provide fundamental knowledge of the physician assistant first-assist role within the operating room.
- Experience the physician assistant collaborative role among the health care team and other medical disciplines within the hospital.
- Integrate a knowledge base necessary to educate patients and families.
- Learn how to critically review and apply pediatric orthopedic literature to clinical practice.
- Learn to describe and interpret X-ray imaging.
- Become familiar with caring for medically complex children including orthotics and ambulatory devices.
- Learn to apply casts and splints.
- Present surgical cases twice weekly to orthopedic team in collaboration with medical residents and fellows.

Pediatric Orthopedic Objectives (Continued)

- Be able to identify and describe pathologies as follows:
 - Idiopathic and neuromuscular scoliosis
 - Monteggia fracture
 - Galeazzi fracture
 - Nursemaid's elbow
 - Developmental hip dysplasia
 - Slipped capital femoral epiphysis
 - Legg-Calve-Perthes disease
 - Genu valgum/varum
 - Blount's disease
 - Osgood-Schlatter disease (tibial apophysitis)
 - Cozen phenomenon
 - Ligamentous tears of the knee
 - Pes planovalgus (flat foot)
 - Congenital talipes equinovarus (club foot)
 - Tarsal coalition

Pediatric Emergency Medicine Objectives

- Overall Educational Goals and Expectations
 - Obtain knowledge and experience in the fundamentals of emergency medicine to develop the qualities and skills to function as a competent physician assistant
 - Surgical PA residents will be expected to participate as a medical provider and will be responsible for initial evaluation and presentation of patients to APP preceptor or ED attending

- Professionalism
 - Surgical PA residents are expected to be on time for assigned shifts and to notify clinical facilitator or shift preceptor of any planned or unexpected schedule changes, conflicts or absences.
 - Demonstrate respect towards all hospital staff, patients and parents.
 - Respect and uphold Nemours Children's policy pertaining to patient's privacy and confidentiality to maintain integrity and reflect compassion.

- Education Expectations
 - Surgical PA residents on the pediatric emergency medicine service should demonstrate the ability to:
 - Communicate effectively with patient/parent to determine purpose for visit to the Emergency Department
 - Perform appropriate, focused history, review of systems (at least 10 systems), physical exam and identifying patient acuity level
 - Present patients to preceptor with clear verbalization to reflect patient's subjective and objective findings differential diagnosis(es)
 - Collaborate with preceptor in ordering and interpreting imaging and laboratory test and utilized ED order set in EPIC
 - Utilize ED Clinical Pathways and evidence-based practice guidelines to develop appropriate treatment plans
 - Effectively communicate diagnoses and plans with patients and families
 - Recognizing, communicating and assist in managing surgical emergencies utilizing guidelines per ED and specialty protocols (also including BLS and PALS)
 - Plan patient discharge and discuss follow-up recommendations and appropriate criteria for return to ED
 - Perform procedures with local anesthetics (i.e., topical, nerve blocks, sedatives) and/or under conscious sedation utilizing Ketamine

Pediatric Emergency Medicine Objectives (Continued)

- General Medical Knowledge and Objectives (disease/conditions and practice enterprise protocols per surgical subspecialties in Emergency Department [but not limited to]):
 - General Surgery
 - The pathophysiology, method of evaluation and management of common pediatric surgical diseases including appendicitis, pyloric stenosis, intussusception, cholecystitis, choledocholithiasis, foreign body ingestion, intestinal obstructions, malrotation, volvulus, pilonidal abscess, hidradenitis suppurativa, ovarian torsion/mass, pelvic mass causing hemodynamic instability
 - Pediatric dosing of medications, correcting electrolyte imbalance, and dehydration resuscitation calculations for bolus and maintenance fluids
 - Radiographic studies: Indications and interpretation
 - Calculate and implement Pediatric Appendicitis Score
 - Perform the following procedures:
 - Troubleshoot gastrostomy tube malfunction/replace gastrostomy tube
 - Reduce stoma prolapsed, apply stoma appliance provide ostomy and gastrostomy tube care/education to prevent unnecessary returns to the ED
 - Laceration repair utilizing:
 - Sutures, skin adhesive and/or staples
 - Incision and drainage of abscess
 - Stabilize post-circumcision bleeding
 - Broviac repair
 - Placement of nasogastric tube
 - Reduction of incarcerated hernias
 - Gastroenterology
 - The pathophysiology, method of evaluation and management of common pediatric surgical diseases: GI bleeding (hematochezia/hematemesis), inflammatory bowel disease (IBD)
 - Foreign body ingestion
 - Crohn's disease complications
 - Acute pancreatitis
 - Otolaryngology (ENT)
 - Identify, assess and manage disease/conditions of the following, but not limited to:
 - Otitis media/externa, foreign bodies in nasal/otic/airway, mastoiditis, bacterial vs. viral pharyngitis, postsurgical tonsillar bleeds, deep space neck abscesses, neck hematomas, sudden hearing loss

Pediatric Emergency Medicine Objectives (Continued)

- Perform the following procedures:
 - Hemodynamically stabilization of postsurgical tonsillar bleeds
 - Removal of foreign body in ear/nose
 - Ear lavage
 - Management of epistaxis
- Urology
 - Identify patient presentation for warranting surgical intervention; assess and manage disease/conditions of the following, but not limited to:
 - Renal stones — management-based evaluation, size and location of stone
 - Febrile and/or urinary tract infection (urinalysis with pyuria + bacteria)
 - Proximal stones > 4cm due to increased pain and less likely to pass
 - Testicular torsion, paraphimosis, phimosis
 - Procedures
 - Insertion of foley in female/male patients
- Orthopedic
 - Identify, evaluate and manage disease/conditions of the following, however, not limited to: closed, nondisplaced/displaced fractures, musculoskeletal pain, strain, sprains, limping child with/without fever, osteomyelitis, septic arthritis
 - Procedures:
 - Familiarize types of splinting/casting for orthopedic extremity fracture
 - Reduction of radial head subluxation
- Plastic Surgery
 - Disease/conditions
 - Burn debridement
 - Laceration repair, simple
 - Wound closure (be familiar with Wound healing part I — Basic Science, and part II — Clinical Applications, provided by plastic surgery)
 - Plastic surgery has simple instrumentation kit available in general surgery clinical node

Neonatal Intensive Care Objectives

The surgical PA resident will spend 2 weeks in the neonatal ICU during their general medicine rotation.

- The resident will work alongside the providers in the NICU to gain knowledge of neonatal disease processes and their management.
- The resident will assist in development of differential diagnoses of the neonate.
- The resident will assist in the development of treatment plans of the neonate.
- The resident will begin to understand total parenteral nutrition.
- The resident will become familiar with neonatal developmental milestones.
- The resident will become proficient in neonatal physical examination.
- The resident will become familiar with common surgical diagnoses related to the neonate, including:
 - Necrotizing enterocolitis
 - Inguinal hernia
 - Gastroschisis
 - Oomphalocele
 - Hirschsprung disease
 - Neonatal intestinal obstruction
 - Intestinal atresias
 - Biliary atresia
 - Esophageal atresia
 - Tricho-esophageal fistula
 - Anorectal malformations
 - Choledochal cyst
 - Intestinal failure/Short gut syndrome
- The resident will observe and understand the indications for bedside procedures performed in the NICU, including:
 - Intubation
 - Central line placement
 - Suction rectal biopsy
 - Peritoneal drain placement
 - Other procedures as indicated

Pediatric Intensive Care Objectives

- Obtain knowledge and experience in pediatric intensive care setting to allow for adequate assessment, management and treatment of critical patients
- Recognize and appropriately respond to acute life/limb-threatening events
- Effectively communicate amongst the patient care team, patient and families
- Be familiar with criteria for admission or transfer of PICU settings
- Understand the importance of psychosocial issues related to care of critically ill patients
- Understand the different monitoring techniques in pediatric critical care
- Read and interpret EKG
- Accurately calculate QTc using Bazett formula
- Demonstrate professional responsibility in working as a provider with other members involved in patient care team, including the patients and families
- Demonstrate competence in airway skills
- Demonstrate the ability to:
 - o Prioritize based on patient acuity
 - o Present a coherent assessment and appropriate treatment plan during rounds
 - o Plan discharge and follow-up care
 - o Manage electrolyte imbalances
 - o Interpret imaging and indicate when and what radiographic studies are needed
- Recognize and manage different types of shock
- Recognize and manage respiratory failure
- Recognize the need for and appropriateness of consultation and/or referral
- Obtain knowledge of sedation and pain management in the PICU setting
- Understand how Pleur evacs function
- Understand the indications, peri-op management, and complications of common surgical admissions



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