**UNIVERSITY OF COLORADO**

**CHILD HEALTH ASSOCIATE/PHYSICIAN ASSISTANT PROGRAM**

**Course Title:** Pediatric Critical & Acute Care **Credit Hours:** 4.0

**Course Number:** MPAS 6913

**Course Dates/Times:** Daily for 1 calendar month **Semester(s):** Summer, Fall or Spring

**Course Location:** See Typhon for Clinical Placement **Year:** 2024-2025

**Course Director:** Roberta Knott (she/her), MPAS, PA-C **Clinical Coordinator:** Manda Baker (she/her)

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**Teaching Faculty**:

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**Course Communication:**

**Email:** Announcements of course information and other communication within this course will be sent using the student’s University email. *It is the student’s responsibility to check email daily.*

**Non-email communication:** Typhon will be used to communicate clinical placement information. The Canvas online platform will be used for general information and clinical requirements.

**Method of Making Appointments for Office Hours:**  Please email to make an appointment.

**Course Description:** The course involves active participation in an inpatient pediatric intensive care unit (PICU) setting at Children’s Hospital Colorado. The student will be exposed to infants, children and adolescents requiring acute, chronic, and emergent care. There is potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required. Restricted to CHA/PA students who have completed 6612.

**Program Learning Outcomes:** The University of Colorado CHA/PA Program’s didactic curriculum is based on clinical presentations, as the common and important ways in which patients present to healthcare providers.1 The clinical curriculum provides opportunities in clinical settings to engage the clinical presentations introduced in the classroom and enhance the practice readiness of students. Over the course of the 3rd Year, CHA/PA students are expected to evaluate patients with a variety of clinical presentations in various age groups, healthcare settings and with various levels of acuity, as well as observe or perform program-defined clinical skills.

1. Students are expected to evaluate **at least 1 (one)** patient over the course of the 3rd year in each of the following settings: outpatient, emergency department, inpatient and operating room.
2. **Patient Logging of Chief Complaint/Clinical Presentation**

Students are expected to log all patient encounters over the course of the 3rd year correlating the chief complaint to a clinical presentation, when applicable.

**Learning Objectives:** The general objectives noted below are based on entry-level PA practice, the expectation for CHA/PA students to have attained at the completion of the 3rd Year.

Medical Knowledge: Upon completion of the 3rd year, the student will be able to:

* Apply medical knowledge of common and uncommon illnesses encountered including risk factors, etiology, pathophysiology and clinical findings pertinent to many of the clinical presentations listed below
* Demonstrate the ability to synthesize information for a clinically appropriate working diagnosis and prioritized differential, articulating logical medical decision making and taking the patient’s unique context into consideration

*Clinical Presentations*

Constitutional

Fatigue

Fever

Pain

Dehydration

Skin injury

Preventative Care

Well care across lifespan, including:

* immunizations
* newborn assessment
* normal development (including pediatric milestones and puberty)
* nutrition counseling

Screenings

Across the lifespan, including for:

* cancer
* depression
* developmental delays

Hematology/Lymphatics

Bleeding/Bruising

Pallor

Lymphadenopathy

Dermatology

Burns

Hair changes

Nail changes

Rash

Skin lesions

Ophthalmology/ENT

Abnormal eye appearance

Abnormal vision

Dizziness

Ear pain

Hearing problems

Mouth disorders

Neck mass

Ophthalmology/ENT (cont.)

Noisy breathing/snoring

Rhinorrhea

Sore throat

Cardiovascular

Abnormal lipids

Chest Pain

Fainting

Hypertension

Murmurs

Palpitations

Shock

Pulmonary

Adult cough

Cyanosis

Pediatric cough (acute & chronic)

Pediatric dyspnea (including newborn respiratory distress)

Shortness of breath/Trouble breathing

Gastrointestinal

Abdominal distension

Abdominal mass

Abdominal pain

Blood in stool

Constipation

Diarrhea

Difficulty swallowing

Jaundice/Abnormal liver studies

Nausea

Vomiting (including hematemesis)

Genitourinary/Renal

Edema

Scrotal mass

Testicular pain

Urinary complaints

Musculoskeletal/Orthopedics

Back and neck pain

Musculoskeletal/Orthopedics (cont.)

Gait disturbance

Joint pain

Painful and swollen limb

Refusal to use limb

Weakness

Neurology

Abnormal movements

Altered mental status

Cognitive impairment

Headaches

Involuntary movements

Numbness & tingling

Seizures

Speech & language disturbance

Endocrinology

Growth and/or development concern

Weight concern, including obesity, failure to thrive, diabetes and/or thyroid dysfunction

Reproduction/Women’s Health

Abnormal bleeding

Breast abnormalities

Genital problems (discharge, lesions)

Normal pregnancy care

Pelvic problems (pain, masses)

Pregnancy problems

Psychiatry

Abnormal mood

Addiction

Anxiety

Chronic pain

Disordered eating

OCD behavior

Psychological trauma

Psychosis

Sleep problems

Toxic ingestion

Professional Practice: Upon completion of the 3rd year, the student will be able to:

* Apply techniques to improve clinic workflow
* Demonstrate the skills of a successful, self-directed learner
* Demonstrate behaviors that convey compassion, respect, integrity and empathy for others
* Demonstrate sensitivity and openness to a diverse patient population
* Demonstrate the professional behaviors expected of a medical professional (i.e. student dresses appropriately, attends clinic on time, addresses the staff with respect, maintains patient privacy, takes feedback well, etc.)
* Collaborate with other health professionals and community resources to promote a climate of mutual respect and trust, while also benefiting patient care

Clinical Skills: Upon completion of the 3rd year, the student will be able to:

* Observe or perform program-defined skills listed below
* Perform a problem-focused history for the patient’s clinical presentation, which accurately reflects the history of present illness, review of the medical record, and contains pertinent positive and negative symptoms
* Perform a technically accurate physical exam for the patient’s clinical presentation
* Select, justify and interpret appropriate labs, clinical tests and/or imaging for the patient’s clinical presentation
* Develop an appropriate plan for patient care, including appropriate selection of pharmaceuticals, referrals, immunizations, preventative care screenings and anticipatory guidance around health promotion, disease prevention, minor illness/trauma treatment, growth and development, safety, nutrition and behavior, as appropriate
* Develop a rapport with patients using verbal & non-verbal interpersonal and communication skills, which will facilitate culturally sensitive shared decision making and information exchange
* Maintain organized, accurate, complete, and timely medical records
* Perform oral presentations in a succinct, accurate, organized and thorough manner

*Clinical Skills*

Below are the program’s expected clinical skills. Skills noted in italics are not required, but are highly recommended, for students.

Perform (20)

* Perform safety and prevention counseling with adults
* Perform anticipatory guidance with pediatric patients/families
* Perform safety and prevention counseling with pediatric patients/families
* Perform laceration repair (e.g., glue, staple &/or suture)
* Perform oral health care (e.g., screening, varnish, education &/or referral)
* Perform EKG Interpretation
* Perform rectal exam (anoscopy &/or DRE)
* Perform testicular exam
* Perform casting and/or splinting
* Perform bimanual pelvic exam
* Perform clinical breast exam
* Perform prenatal care counseling
* Perform vaginal speculum exam/Pap smear
* Perform aseptic technique
* Perform injections (IM, SC, intradermal)
* Perform local anesthesia (subQ, infiltration, digital nerve block)
* Perform point-of-care testing: one in each of the following:
* U/A, urine pregnancy test, hemoccult
* Finger/heel stick: (glucose, lead, hemoglobin)
* Point of care tests: rapid HIV, RSV, Flu, covid &/or strep
* Perform surgical care (including pre-op, intra-op with surgical repair, and post-op care)
* Perform X-ray interpretation

Observe or perform (9)

* Observe or perform end of life wishes/DNR discussion
* Observe or perform cryotherapy
* Observe or perform skin biopsy (e.g., excision, punch, &/or shave)
* Observe or perform wound care (e.g., bandage change, burn management, repacking, wound debridement, &/or suture/staple removal)
* Observe or perform eye injury evaluation (e.g., slit lamp, fluorescein eye stain &/or tonometry)
* Observe or perform nebulizer treatment
* Observe or perform joint aspiration &/or injection
* Observe or perform wet prep (with KOH and saline)
* Observe or perform I&D of abscess or cyst

Observe (1)

* Observe lumbar puncture

*Recommended, but not required (6)*

* *Observe or perform endotracheal intubation*
* *Observe or perform bladder/urethral catheterization*
* *Observe or perform LARC insertion and/or removal (e.g., IUD or Nexplanon)*
* *Observe OB/GYN procedures (e.g., cervical dilation, colposcopy, D&C, endometrial biopsy, version, Bartholin gland marsupialization, breast biopsy, etc.)*
* *Observe or perform IV catheter placement*
* *Perform venipuncture*

To determine learning outcomes have been met, the CHA/PA Program will use the following tools listed below.

1. **Preceptor Assessment of Student Performance**

Students will be assessed by a primary preceptor, in conjunction with other participating preceptors when pertinent, at the completion of the rotation. The areas of assessment align with many of the program-defined milestones, as well as the learning objectives.

1. **Program-Defined Clinical Skills**

Students are expected to observe or perform **program-defined skills,** listed on the subsequent pages, at least **once (1)** over the course of the 3rd year. When students are identified as not having completed one or more program-defined skills, the student will be directed to a remediation plan.

1. **Program-Defined Patient Demographics**
2. Students are expected to evaluate **at least 1 (one)** patient over the course of the 3rd year presenting with each of the following conditions: acute, chronic, preventative and emergent.
3. Students are expected to evaluate **at least 1 (one)** patient over the course of the 3rd year in each of the following age groups: infancy (<1 year), childhood (1-10 years), adolescence (11-17 years), adulthood (18-59 years) and the elderly (60+ years).

**PEDIATRIC CRITICAL AND ACUTE CARE SPECIFIC OBJECTIVES**

Medical Knowledge: Upon completion of the 3rd year pediatric elective rotation, the student will be able to:

* Apply medical knowledge of common infant, childhood and adolescent conditions specific to the specialty, including risk factors, etiology, pathophysiology and clinical findings pertinent to the clinical presentation.
* Demonstrate the ability to synthesize information for a working diagnosis and differential, prioritizing the differential and articulating logical medical decision-making.
* Apply medical knowledge to system-based problems in the respiratory, cardiovascular, neurologic and renal systems, specifically:

1. Respiratory:

o Recognize signs and symptoms of an unstable airway and of respiratory failure

o Describe anatomic and physiologic variables of the pediatric vs adult airway

o Describe how to open and maintain an airway manually and what airway adjuncts can be utilized

o Describe preparation and procedure for intubation. Discuss alternative methods to establishing an airway

o Identify causes of respiratory failure from upper and lower airways disease

o Identify indications, advantages and disadvantages for NIPPV

o Describe basic mechanical ventilation modes and initial settings

2. Cardiovascular:

* Define shock
* Identify the different types of shock and their typical presentation
* Describe the initial steps in the evaluation and management of a child in shock
* Discuss the role of fluid resuscitation in shock
* Describe the physiologic effects of the various vasopressors and inotropic agents

3. Neurologic:

* Describe the physiology of the intracranial vault and cerebral blood flow
* Perform a comprehensive neurologic assessment
* Describe the management of a patient with intracranial hypertension
* Summarize the acute management status epilepticus

1. Fluids/Electrolytes/Renal:

* Describe common electrolyte abnormalities in DKA and management of DKA
* Define acute renal failure and its causes (pre-renal, post-renal, intrinsic)
* Describe the evaluation and treatment of acute renal failure

Clinical Skills: Upon completion of the 3rd year PCACLE rotation, the student will be able to:

* Perform a full history and physical exam, using appropriate techniques, on a patient admitted to the pediatric intensive care unit.
* Develop a differential diagnosis, which is appropriate for the patient’s clinical presentation.
* Develop an accurate assessment and plan for common PICU diagnoses, such as bronchiolitis, asthma, shock, diabetic ketoacidosis, status epilepticus and traumatic brain injury.
* Determine the appropriate labs and/or imaging to order for the patient’s clinical presentation.
* Develop an appropriate plan for patient care, including appropriate selection of pharmaceuticals, therapeutics, screening exams, immunizations and anticipatory guidance, as needed.
* Maintain clear, accurate, timely and legible medical records.
* Perform succinct, yet thorough, oral presentations of patient care cases on multidisciplinary rounds.

Professional Practice: Upon completion of the 3rd year pediatric elective rotation, the student will be able to:

• Meet the CHA/PA Professional Practice objectives associated with all 3rd Year rotations.

**Required Text(s) and Pre-Work:** Please refer to Canvas for rotation-specific readings and/or pre-work; other work may be assigned by preceptor throughout the experience.

**Required and Recommended Texts and Resource Materials:** The Clinical Canvas Shell is a student resource for all things clinical. The site has important documents, resources, clinical site information (which is password-protected and requires a University login and password to access), and the Clinical Handbook.

There is no required text for this course; however, reference text or reading suggestions, if available, for this rotation can be found on Canvas.

**Required Supplies:** The CHA/PA Program requires students to wear the blue CHA/PA nametag and be able to access their Clinical “Passport” or Student Information File materials from Typhon when on clinical rotations. Additional required supplies will vary by clinical site, but may include a stethoscope and diagnostic equipment. Please see the Clinical Site Information App and/or Canvas for more details based on your specific site.

**Course Format:** This course will include supervised clinical practice experience daily for one month. Students will be supervised by the preceptor (or assigned licensed/board certified physician, PA or NP) at all times. Work outside of the clinical time may be required of students to complete assignments and self-directed learning.

**Course Schedule:** See Typhon for clinical placement information specific to your clinical experience.

**Assessment Methods:** This course will utilize the student evaluation of the preceptor/site, the preceptor’s assessment of the student, patient logging and attendance during the clinical rotation.

**Grades and Grading Policy:** All grades are assigned as Pass (P), Incomplete (IP), or Fail (F). Please see the *Student Academic Policies and Procedures* for more information about grading policies. In order to pass the course, the student is responsible for meeting all requirements for a passing grade, which include:

1. **Typhon Requirements**

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| --- | --- | --- | --- | --- |
| Typhon Requirements (3)\* | | Format | | Points |
|  |  | |  | |
| Student evaluation of the preceptor *within 7 calendar days* of completing the experience^ | Typhon | | Complete/Incomplete | |
| Preceptor assessment of student *within 7 calendar days* of completing the experience^ | Complete/Incomplete | |
| Complete Typhon patient logs *within 7 calendar days* of completing the experience ^ | Complete/Incomplete | |
|  |  | |  | |
| \*Requirements are due within 7 calendar days of rotation completion.  ^Late requirements are a breach of professionalism. It is the student’s responsibility to ensure that these items are completed in a timely manner. A warning will be given for the first violation and subsequent violations will be reviewed by the Student Promotions Committee. If any of the requirements are missing or not meeting program-defined expectations at the time semester grades are due, the student will receive an “Incomplete” (IP) grade until that requirement has been met. See *Student Academic Policies and Procedures* for further information. | | | | |

**Assessment Expectations:** Assessments that do not demonstrate that a student met program-defined expectations or that contain concerning comments about professionalism or fitness to practice will be reviewed by the Clinical Course Director, in consultation with faculty, staff, Student Promotions Committee and/or preceptors, to determine the final grade.

**Patient Logging:**  Patient logging is a requirement for the course and logs are reviewed monthly. A holistic report of the student’s logging will be generated on the 3rd and 8th month of the clinical year to determine if the student is on-track to complete program-defined expectations. Completion of the following fields for patient encounters in the Typhon patient logging system will be reviewed and assessed by the Clinical Course Director:

* + Chief Complaint/Clinical Presentation
  + Patient Demographics
  + Clinical Skills

If a student is identified as lacking one or more of the program-defined expectations, he/she will be directed to a remediation plan.

**Course/Program Policies:** See *Student Academic Policies and Procedures*.

**Professional Behaviors:** Students are expected to follow all professional behaviors as detailed in the *Student Academic Policies and Procedure*s and outlined in “Ensuring a Climate for Learning in the Clinical Experience: Educator-Student Agreement” in all thread experiences. Specific to the Clinical Experiences thread are additional expectations including:

1. Many clinical sites require additional requirements and trainings, which you will be asked to complete in a timely fashion during the semester and return requirements to the facility and/or to Clinical Team for processing. It is the student’s responsibility to complete requirements by the assigned due dates.
2. Dress code is as directed by the clinical site, but should be no less casual than business casual. Students should inquire about whether the white coat is preferred. All students will need to wear the blue name tag, in addition to any site/facility badging requirements.

**Syllabus is subject to change – all changes will be forwarded to all students.**