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 / MEDICAL PRACTICES  
TECHNICAL CHALLENGES

# PAEDIATRIC / USE OF ULTRASOUND IN EMERGENCIES

5<sup>th</sup> Edition  
**S**



Advanced  
Health  
Education  
by NOVA Medical School



# PAEDIATRIC / USE OF ULTRASOUND IN EMERGENCIES

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**COURSE COORDINATOR** Maria Teresa Dionísio, MD

## COURSE PRESENTATION

The use of ultrasound for critical patient evaluation in paediatrics has increased exponentially over the years. This course, aimed at physicians dealing with emergent paediatric patients (intensive care units, emergency services, operating room), aims to ensure that trainees acquire theoretical knowledge and practical training to be able to include ultrasound as a diagnostic and interventional tool in clinical practice.

The course includes theoretical and practical sessions on the following topics: placement of ultrasound-guided central venous catheters, eFAST (focused assessment with sonography for trauma), pleuropulmonary evaluation and basic cardiac evaluation using high fidelity simulators and human models, allowing an excellent environment for practical training. For placement of echo-guided catheters, in addition to live models, blue phantom models will be used.

Furthermore, a theoretical review will be made on the **use of cranial ultrasound in critically ill newborns/ infants**.

## LEARNING OBJECTIVES >> KNOWLEDGE AND SKILLS TO DEVELOP

- >> Understand the basic principles of ultrasound
- >> Learn how to assess the morphology of the heart and its function. Diagnose pericardial effusion
- >> Learn how to identify lung patterns and abnormalities
- >> Learn how to identify the abdominal organs and lesions in situations of trauma (eFAST), the morphology of abdominal organs, and the presence of free abdominal fluid
- >> Learn how to evaluate the critical patient using cardiac, pulmonary and abdominal ultrasound, identifying the most emergent pathologies
- >> Learn how to place ultrasound-guided central venous lines. Catheter placement techniques in blue phantom models
- >> Identify the main neurological emergencies by cranial ultrasound
- >> Integrate the concepts of ultrasound into clinical practice and thereby improve patient care quality

## TARGET AUDIENCE

>> Evaluate diaphragmatic function by ultrasound scan - Main findings, Clinical applications  
Paediatricians and paediatric residents dedicated to the care of critically ill children and working in paediatric emergency (Intensive Care and Emergency Service); Neonatologists; Anaesthesiologists; Paediatric Surgeons and Paediatric Cardiologists

## ADMISSION CRITERIA

- >> CV
- >> Academic background in the mentioned specialties.
- >> Other physicians and healthcare professionals motivated by intensive care/emergency medicine

## ATTENDANCE REQUIREMENTS

- For attendance certification as well as awarding CME credits and/or ECTS it is mandatory to complete:
- >> 100% attendance
  - >> Evaluation

**MAX. ATTENDEES >>**  
16

**DURATION >> 16**  
HOURS

**CREDITS >> 1**  
ECTS

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PROGRAMME

**2024 / SEPTEMBER**

**SEPT 26<sup>th</sup>**

**9:00 am – 6:00 pm**

**Location: AHED – Health Campus** 

## **Introduction to Ultrasound** (AVAILABLE ONLINE FROM 19TH SEPTEMBER)

- >> Ultrasound physical waves
- >> Basic characteristics of the ultrasound equipment
- >> Probe types
- >> Basic operating modes (2D imaging, M-mode, Continuous/pulsed wave and Color Flow Doppler)
- >> POCUS

## **E-FAST abdominal ultrasound**

- >> Anatomy of the abdomen and anatomical references systematization
- >> Protocol E-FAST
- >> Peritoneal effusion, thickened bowel loops, organomegaly, bladder visualization and assessment of bladder contents
- >> E-FAST (Extended Focused Assessment with Sonography in Trauma) Protocol

## **Lung ultrasonography**

- >> Pulmonary exploration and ultrasound patterns
- >> Common pathologies: pleural effusion, pneumothorax, pneumonia/ atelectasis, interstitial syndrome
- >> Evaluation of the pleura and diaphragm

## **Ultrasound-guided central venous lines placement**

- >> Vascular Exploration
- >> Ultrasound-guided central venous line placement

## **Diaphragmatic ultrasound** **NEW**

- >> Evaluation of diaphragmatic function - details of the technique
- >> Main findings
- >> Clinical applications

## **Transthoracic echocardiography**

- >> Basic cardiac views
- >> Cardiac function
- >> Pulmonary hypertension
- >> Pericardial effusion
- >> Cardiac tamponade
- >> Role of echocardiography in shock

## **Cranial Ultrasound**

- >> Identify main neurological emergencies in newborns/ infants

## **Practical Sessions (rotating groups) Hands-on workshop:**

- >> Human models & high-fidelity ultrasound simulators
- >> Catheter placement techniques in blue phantom models
- STATION 1. Lung ultrasound
- STATION 2. Transthoracic echocardiography
- STATION 3. E-FAST abdominal ultrasound
- STATION 4. Ultrasound guided central venous lines placement

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PROGRAMME

**2024 / SEPTEMBER**

**SEPT 27<sup>th</sup>**

**9:00 am – 6:00 pm**

**Location: AHED – Health Campus** 

## **Practical Sessions (rotating groups)**

### **Hands-on workshop:**

- >> Ultrasound in paediatric shock
- >> Human models & high-fidelity ultrasound simulators
- >> Catheter placement techniques in blue phantom models

STATION 1. Lung ultrasound

STATION 2. Transthoracic echocardiography

STATION 3. E-FAST abdominal ultrasound

STATION 4. Ultrasound guided central venous lines placement

- >> Making an ultrasound diagnosis – clinical cases

STATION 1. Lung ultrasound

STATION 2. Transthoracic echocardiography

STATION 3. E-FAST abdominal ultrasound

STATION 4. Ultrasound guided central venous lines placement

- >> Theoretical Exam

- >> Course Assessment

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## FACULTY

- >> Adelaide Coelho, MD
- >> Ivanete Peixer, MD
- >> João Santos Silva, MD
- >> Maria Teresa Dionísio, MD
- >> Pedro Garcia, MD
- >> Rui Anjos, MD, MRCPCH, FECS
- >> Sara Ramos, MD
- >> Susana Cordeiro, DMS

## INSTITUTIONAL PARTNERSHIPS >>



## SCIENTIFIC PARTNERSHIPS >>



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## APPLICATION >>

**Deadline: SEPTEMBER 12<sup>th</sup> 2024**

**Fee: 50€**

Application fees are non-refundable\*

Secure your spot!  
Apply **HERE!**

## TUITION FEE >>

**600€** VAT exempted

## INCLUSIONS AND EXCLUSIONS IN PRICE

The price published for this course includes coffee breaks, lunches, teaching fees, space rental, certificate of attendance, and materials used during the course. The price of the course doesn't include hotel accommodation, dinners on course days, nor any other items unless specifically mentioned. Prices of courses published by AHED are exempted of VAT. Other items priced by AHED apart from courses may however include VAT.

## APPLICATION, ADMISSION AND REGISTRATION

When applying for a course at AHED - Advanced Health Education, the applicant agrees to subject personal and professional data. This data will be verified and assessed to check that the applicant meets the admission criteria for the specific programme.

Once an application is approved, the participant is admitted and payment of the tuition fee will be required to complete the registration.

## COURSE REGISTRATION FEES

The registration stage is considered completed when the total price of the course is received by AHED.

## PAYMENT OPTIONS

Payment options for application and registration include credit card (Visa, MasterCard), wire transfer in Euro, and Multibanco.

## EARLY BIRD

\*Application fees will be discounted from the course price for registrations completed 90 calendar days before the date of the course.

For additional information, please go to in Terms and Conditions at [ahed.pt](https://ahed.pt)



AHED – Advanced Health Education has received certification from DGERT as an education provider for all training programs for health care professionals. Courses, procedures and practices are in accordance with training quality standards.