



WICCEM
World Institute of
**CRITICAL CARE &
EMERGENCY MEDICINE**



**Saving
Lives
Academy**

POCUS FELLOWSHIP
IN ACUTE CARE SETTINGS



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POCUS FELLOWSHIP IN ACUTE CARE SETTINGS

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Point-of-Care Ultrasound Fellowship Program in Acute Care Settings

Introduction:

Welcome to Our Cutting-Edge Online Point of Care Ultrasound Fellowship Program.

We are thrilled to welcome you to this unique and pioneering fellowship, designed to equip healthcare professionals with **advanced skills in Acute Care Ultrasound**. As a participant, you are now part of a dynamic and diverse global community dedicated to **improving patient care** through state-of-the-art ultrasound applications in **critical and emergency settings**.

This meticulously structured program is divided into **two comprehensive modules**, each module spanning 24 weeks, ensuring a robust and immersive learning experience. It is tailored for critical care, emergency medicine physicians, and other medical & surgical specialities, at **all levels**. **This is a great opportunity for those who are either** beginning their ultrasound journey or seeking to refine and expand their expertise as senior clinicians.

The **curriculum is designed to bridge the gap between theory and practice**, offering a **structured, evidence-based, and clinically relevant approach** to ultrasound education.



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Recognizing the demanding nature of your profession, we have prioritized flexibility and accessibility in our fellowship structure. All **interactive sessions** are **recorded and made available on a user-friendly learning platform**, enabling you to revisit key insights at your convenience. This feature ensures that even the busiest clinicians can integrate this program into their schedules, allowing for **self-paced learning without compromising on quality**.

Through a combination of **expert-led lectures**, case discussions on real-world clinical scenarios, and Journal clubs on the evidence behind the current practice you will gain a deep understanding of ultrasound applications in shock assessment, cardiac function, lung pathology, procedural guidance, and more. Our faculty consists of **renowned experts in the field**, committed to mentoring and guiding you every step of the way.

By the end of this fellowship, you will not only have strengthened your ultrasound proficiency but will also have joined a **global network of like-minded professionals**, fostering **collaboration, knowledge exchange, and continuous learning in Acute Care Ultrasound**.

Welcome aboard.

We look forward to embarking on this exciting journey with you



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Information about WICCEM

The World Institute of Critical Care & Emergency Medicine (WICCEM) is a non-commercial institution conceptualized and developed by critical care and emergency medicine professionals with proven expertise in distance education. WICCEM fosters live interactions between expert professionals in critical care and emergency medicine from around the world and hosts asynchronous global ward rounds to bridge gaps in clinical practice.

There is an urgent need to help, guide, mentor, and support colleagues dedicated to working in low- and middle-income settings. WICCEM strives to address this need by establishing a worldwide educational forum.

The institution emphasizes the practical application of all educational tools to the care of critically ill patients. WICCEM focuses on equipping clinicians with evidence-based knowledge in a learning environment that encourages questioning current practices and developing a reasoning-based approach to optimize patient care.

WICCEM is your institution, enriched by your knowledge and active participation. It fosters self-directed learning by connecting you with experienced colleagues worldwide, enabling you to share challenges and gain their support.

Let me know if any further edits are needed!

Fellows' Admission

Admissions are open on a four-month cycle. Dates and deadlines for the application process will be announced in due course. Early applications are encouraged to allow sufficient time for review. Once the program reaches full capacity, further applications will no longer be considered.

Cost Information

The Fellowship is a **non-commercial program**; however, it requires fees to cover administrative expenses, technology, and educational materials. Registration fees will be announced when the call for applications is opened. Payment will only be requested after your application has been reviewed and confirmed to meet all admission requirements.



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Patient Anonymity

Patient confidentiality must be maintained in all clinical discussions. Throughout your coursework and discussion forums, avoid any reference to patient names, identification numbers, medical record numbers, or any other information that could potentially identify a patient. Ensuring this is your responsibility. Any disclosure of information that could lead to patient identification will be considered a serious professional breach of trust.

Although the program is not subject to local health authority regulations, it will adhere strictly to their guidance on patient confidentiality.

Any breach of the statements outlined by the guiding regulations may result in referral to an academic integrity investigation by the Program Director, which in turn may result in removal from the module or failure of an assessment.

Accreditation

The fellowship is accredited by the **American Association of Continuing Medical Education® for 32 credits for each module (96 total credits)**

Administration and Technical Support

ICOM Group is the official business and management company in charge of the Fellowship Project. Administration, students' admission, LMS Management and technical support are provided by ICOM.



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14	<ul style="list-style-type: none"> Week 9 May 7 2026 	DVT Assessment Ultrasound	Live Webinar – All Walid Parag	12
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*16	<ul style="list-style-type: none"> Week 11 May 21 2026 	Lung Ultrasound (LUS)I: Normal Exam	Daniel Lichtenstein	13
*17	<ul style="list-style-type: none"> Week 12 May 28 2026 	LUS II: Pneumothorax, Pleural Effusion	Silvia Mongodi	13
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*19	<ul style="list-style-type: none"> • Week 14 • June 11 • 2026 	LUS IV: Airway/Gastric	Walid Alhabashy/Nivisha Parag	14
20	<ul style="list-style-type: none"> • Week 15 • June 18 • 2026 	LIVE webinar (LUS in Practice, ARF)	Al Tayar/D.Lichenstien	15
21	<ul style="list-style-type: none"> • Week 16 • June 25 • 2026 	US Emergency Procedures	Hesham Faisal/A.Noreddin	15
22	<ul style="list-style-type: none"> • Week 17 • July 2 • 2026 	Basic Echo Views	Walid Alhabashy/Nivisha Parag	15
23	<ul style="list-style-type: none"> • Week 18 • July 9 • 2026 	Basic LV and RV	Michel Slama	15
24	<ul style="list-style-type: none"> • Week 19 • July 16 • 2026 	Pericardial Effusion/Tamponade	Michael Lanspa	15
25	<ul style="list-style-type: none"> • Week 20 • July 23 • 2026 	LIVE WEBINAR: POCUS in Daily Practice	Live Webinar – All	16
26	<ul style="list-style-type: none"> • Week 21 • July 30 • 2026 	Aortic and Mitral Valves	Micheal Lanasp	16
27	<ul style="list-style-type: none"> • Week 22 • Dec 8 • 2026 	Shock Approach	Thamer Alaifan/Haitham Khalifa	16
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	Module 2:			
	<ul style="list-style-type: none"> • ED pathway • Week 25 • March 4 • 2026 	Lung and Dyspnea in ER	Wesam Ibrahim	17
*31	<ul style="list-style-type: none"> • Week 26 • March 25 • 2026 	Chest pain in ER	Islam Noeim	17
32	<ul style="list-style-type: none"> • Week 27 • April 1 • 2026 	Shock and hemodynamic strategies in ER	Haitham Khalifa	17
33	<ul style="list-style-type: none"> • Week 28 • April 8 • 2026 	Cardiac arrest in ER	Maged El Warraky	17
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35	<ul style="list-style-type: none"> Week 30 April 22 2026 	Acute abdomen (One)	Hesham Temraz/Haitham Khalil)
36	<ul style="list-style-type: none"> Week 31 April 29 2026 	Acute Abdomen (Two)	Hesham Temraz/ Ahmed Al Senousy	17
37	<ul style="list-style-type: none"> Week 32 May 6 2026 	Pediatric (one)	Mona Sorrow/ Dina Magdy	17
38	<ul style="list-style-type: none"> Week 33 May 13 2026 	Pediatric (Two)	Dina Magdy - Mona Sorrow	17
39	<ul style="list-style-type: none"> Week 34 May 20 2026 	LIVE WEBINAR	Live Webinar – All	17
40	<ul style="list-style-type: none"> Week 35 May 27 2026 	DVT, PE and vascular Emergency	Mohamed Nasereddin	17
41	<ul style="list-style-type: none"> Week 36 June 3 2026 	Ocular US and neurological EM	Mohamed Nasereddin	17
42	<ul style="list-style-type: none"> Week 37 June 10 2026 	Oby & Gyna (Early pregnancy)	Grace Wanjiku	17
43	<ul style="list-style-type: none"> Week 38 June 17 2026 	Oby & Gyna (Late pregnancy)	Grace Wanjiku	17
44	<ul style="list-style-type: none"> Week 39 June 24 2026 	LIVE WEBINAR	Live Webinar – All	17
45	<ul style="list-style-type: none"> Week 40 July 1 2026 	Nerve block US	Ahmed Salman	17
46	<ul style="list-style-type: none"> Week 41 July 8 2026 	Musculoskeletal and acute trauma	Ahmed Salman	17
47	<ul style="list-style-type: none"> Week 42 July 15 2026 	Soft tissue ultrasound	Omar Jaradat	17
48	<ul style="list-style-type: none"> Week 43 July 22 2026 	Emergency Neck US	Amgad Makhour	17
49	<ul style="list-style-type: none"> Week 44 July 29 2026 	LIVE WEBINAR	Live Webinar – All	17
50	<ul style="list-style-type: none"> Week 45 Aug 5 2026 	Renal And urological	Wesam Ibrahim	17
51	<ul style="list-style-type: none"> Week 46 Aug 12 	Oncological US	Haitham Khalifa	17



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52	<ul style="list-style-type: none">• Week 47• Aug 19 & Aug 26• 2026	Geriatric EM ultrasound	Mohamed Al Abbasy	17
52	<ul style="list-style-type: none">• Week 48	EXAM		



Module 2:

Advanced Critical care US pathway

53	<ul style="list-style-type: none"> • Week 25 • March 4 • 2026 	Advanced TTE Views	Walid Alhabashy	17
54	<ul style="list-style-type: none"> • Week 26 • March 25 • 2026 	Advanced LV/RV Assessment	Xavier Monnet- Ashraf Al Tayar	17
*55	<ul style="list-style-type: none"> • Week 27 • April 1 • 2026 	RV syndromes in ICU: CCE role	Antoine Villard Barone/ Ashraf Al Tayar	
56	<ul style="list-style-type: none"> • Week 28 • April 8 • 2026 	Infective Endocarditis: Echo Role	Michel Slama	17
57	<ul style="list-style-type: none"> • Week 29 • April 15 • 2026 	LIVE WEBINAR: Pulmonary Embolism	Live Webinar – All	17
*58	<ul style="list-style-type: none"> • Week 30 • April 22 • 2026 	EASY in ICU	Nilbras Bugarara	17
59	<ul style="list-style-type: none"> • Week 31 • April 29 • 2026 	LVDD	Ashraf Al Tayar	17
60	<ul style="list-style-type: none"> • Week 32 • May 6 • 2026 	ECHO in ECMO patients	Hesham Faisal	17
61	<ul style="list-style-type: none"> • Week 33 • May 13 • 2026 	Valves pathologies Reemphasize	Michel Lanaspá	17
62	<ul style="list-style-type: none"> • Week 34 • May 20 • 2026 	LIVE WEBINAR: PFR	Live Webinar – All	17
63	<ul style="list-style-type: none"> • Week 35 • May 27 • 2026 	VEXUS	Mohamed Rashwan	17
64	<ul style="list-style-type: none"> • Week 36 • June 2 • 2026 	POCUS in ARDS patients	Silvia Mongodi	17
65	<ul style="list-style-type: none"> • Week 37 • June 10 • 2026 	Weaning From MV: Heart -Lung Echo	Xavier Monnet	17
66	<ul style="list-style-type: none"> • Week 38 • June 17 • 2026 	Diaphragm US in ICU	Ashraf Al Tayar	17
67	<ul style="list-style-type: none"> • Week 39 • June 24 • 2026 	LIVE WEBINAR: Shock Scenarios	Live Webinar – All	
68	<ul style="list-style-type: none"> • Week 40 • July 1 • 2026 	TEE in ICU why and How	Ashraf Al Tayar/Moustafa Essam	17
69	<ul style="list-style-type: none"> • Week 41 • July 8 • 2026 	TEE in valve assessment	Walid AlHabashy	17



70	<ul style="list-style-type: none"> Week 42 July 15 2026 	TEE in HD assessment	Ashraf Al Tayar	17
71	<ul style="list-style-type: none"> Week 43 July 22 2026 	TEE in Stroke and cardiac masses	Michael Slama	17
72	<ul style="list-style-type: none"> Week 44 July 29 2026 	LIVE WEBINAR	TEE Simulator	17
73	<ul style="list-style-type: none"> Week 45 Aug 5 2026 	ONSD in ICU	Ashraf Al Tayar	17
74	<ul style="list-style-type: none"> Week 46 Aug 12 2026 	TCD in ICU	Chiara Rubba	17
75	<ul style="list-style-type: none"> Week 47 Aug 19 2026 	Review	Ashraf Al Tayar	17
76	<ul style="list-style-type: none"> Week 48 Aug 26 2026 	EXAM		17

Program Structure and Learning Approach

Our fellowship delivers a **rich, asynchronous learning experience**, integrating:

- **Lectures** by esteemed faculty.
- **Multiple-choice assessments** to reinforce knowledge.
- **Journal clubs** to explore the latest research.
- **Clinical case discussions** to enhance practical skills.

Recognizing the demands of medical professionals across diverse time zones, we provide 24/7 access to all educational materials through our **state-of-the-art Learning Management System (LMS)**. This platform serves as more than just a resource hub—it offers an immersive learning experience, fostering collaboration on complex cases and engaging discussions that push the boundaries of **Point-of-Care Ultrasound (POCUS)**.

A Global, Multidisciplinary Initiative



This fellowship is thoughtfully designed to accommodate professionals beyond critical care and emergency medicine. It is also highly suitable for physicians from other disciplines, including **internal medicine, surgery, and primary care**, particularly in its foundational phase, where the fundamentals of POCUS in routine clinical practice are emphasized.

We are proud to bring together an **internationally renowned faculty**, comprising distinguished experts in research, education, and ultrasound-based clinical practice. Our faculty represents diverse regions, including the **United States, Canada, Europe, the United Kingdom, and the Middle East**, ensuring a broad spectrum of expertise and perspectives.

Two-Tiered Learning Pathway

The fellowship is structured into two distinct **24-week modules**:

1. **Common Pathway Module (First 24 Weeks)**: This module is designed for all participants, covering fundamental and universally applicable POCUS principles.
2. **Specialized Pathway Module (Second 24 Weeks)**: Attendees will choose between **Advanced Critical Care POCUS** or **Advanced Emergency POCUS**, delving into specialized applications tailored to their field of practice.

Live Expert-Led Webinars

Every **four weeks**, participants will have the opportunity to engage in **live, interactive webinars**, featuring direct discussions with leading experts in the field. These sessions are designed to facilitate real-time learning, address participant queries, and provide insights into the latest advancements in **Acute Care ultrasound**.

In Summary



As you embark on this transformative journey, envision the profound impact you will have on patient care and the future of **POCUS**. Our team is committed to supporting you every step of the way, fostering an environment where **innovation, collaboration, and expertise** thrive. Let's push the boundaries of Point-of-Care Ultrasound together!

Faculty

Program Director:

Ashraf Al Tayar

Academic Directors:

Critical care section:

Walid Alhabashy

Emergency section:

Wessam Ibrahim

Speakers:

(Critical Care Section)

- 1. Ashraf Al Tayar (Egypt)**
- 2. Walid Alhabashy (UK)**
- 3. Hesham Faisal (KSA)**
- 4. Ahmed Hegazy (Canada)**
- 5. Thamer Alaifan (KSA)**
- 6. Mohamed Rashwan (KSA)**



7. Michel Slama (France)
8. Michael Lanspa (USA)
9. Silvia Mongodi (Italy)
10. Chiara Rubba (Italy)
11. Aarti Sarwal (USA)
12. Daniel Lichtenstein (France)
13. Nivisha Parag (South Africa)

(Emergency Medicine section)

- 1) Wesam Ibrahim (USA)
- 2) Haitham Khalifa (Egypt)
- 3) Grace Wanjku (USA)
- 4) Maged El Waraky (UK)
- 5) Mohamed Nasreddin (Egypt)
- 6) Hesham Temraz (Egypt)
- 7) Mona Soror (Egypt)
- 8) Dina Magdy (Egypt)
- 9) Ahmed Salman (Egypt)
- 10) Islam Noeim (Egypt)
- 11) Mohamed Abbasy (Canada)
- 12) Mohamad Boulad (Lebanon)
- 13) Amjad Makhour (Lebanon)
- 14) Mohamed Megdadi (Jordan)
- 15) Abdelhamid Noreldine (USA)
- 16) Ahmed El Sinosy (KSA)
- 17) Liqaa Rafee (Jordan)
- 18) Olfa Chakroun (Tunisia)
- 19) Salah Itmiza (Palestinian)
- 20) Haitham Khalil (UAE)
- 21) Omer Jaradat (Turkey)



Module 1: General (common pathway)

1. Week 1

By Dr Walid Alhabashy

Topic: Applied physics Image Acquisition, and Instrumentation

Core Topics:

- **Physics, Knobology, and Ultrasound Planes:**

Essential principles for effective scanning.

- **Case Studies: Artifacts**

Identification and interpretation of common ultrasound artifacts.

- **Journal Club:**

Critical analysis of selected research papers.

Learning Objectives:

1. Develop a **comprehensive understanding** of ultrasound physics and system controls.
2. **Master image acquisition techniques by optimizing transducer positioning and orientation.**

3. Identify and **mitigate common imaging artifacts** to enhance diagnostic accuracy.
4. Demonstrate proficiency in operating ultrasound equipment for **high-quality image generation**.

2. Week 2

Dr Hesham/Dr Moustafa

Topic: eFAST (Extended Focused Assessment with Sonography for Trauma)

Core Topics:

- **FAST in Trauma:**
Fundamental ultrasound assessment in trauma scenarios.
- **Extended FAST (eFAST):**
Extended (Comprehensive) evaluation including thoracic and abdominal assessments.
- **Case Studies:**
Application of eFAST in real-world trauma cases.
- **Journal Club:**
Review and discussion of relevant research articles.

Learning Objectives:

1. Develop a thorough understanding of surface landmarks for precise **transducer positioning** during the eFAST examination.
2. **Identify key sonographic landmarks** and anatomical relationships of the **heart, liver, spleen, and bladder** within the context of trauma assessment.
3. Demonstrate the ability to recognize and assess potential areas for intra-abdominal and thoracic free **fluid accumulation or pneumothorax**.

4. Interpret sonographic findings and recognize **common pitfalls** in diagnosing **life-threatening trauma conditions**, such as cardiac tamponade, hemothorax, pneumothorax, and intra-abdominal haemorrhage.
5. Develop proficiency in utilizing ultrasound techniques to enhance trauma patient management and optimize diagnostic accuracy

Week 3

Grace Winjiku

Topic: Aortic Ultrasound Assessment

Core Topics:

- **Aortic Syndromes:** Recognizing and assessing acute aortic pathology.
- **Case Discussion:** Application of ultrasound findings to real-world scenarios.
- **Journal Club:** Critical evaluation of relevant research studies.

Learning Objectives:

1. Develop proficiency in identifying **surface landmarks** for accurate transducer positioning during sonographic examinations of the **abdominal aorta**.
2. Demonstrate the ability to visualize and interpret **aortic landmarks** in both **transverse and longitudinal scanning planes**.
3. Recognize key **sonographic findings** and common pitfalls in diagnosing **aortic pathology**, including **aortic aneurysms**.

4. Week 4

By Dr Ashraf Al Tayar

Topic: Inferior Vena Cava (IVC) Assessment

Core Topics:

- **IVC Assessment and its Role in Predicting Fluid Responsiveness (PFR) in spontaneous and Ventilated patients**

- **Case Discussion: Fluid Responsiveness**
- **Journal Club:** Review and discussion of relevant research articles.

Learning Objectives:

1. Identify **surface landmarks** for accurate transducer positioning during sonographic examinations of the **Inferior Vena Cava (IVC)**.
2. Demonstrate the ability to visualize **IVC landmarks** in both **transverse and longitudinal scanning planes**.
3. Utilize **motion modality (M-mode)** to assess IVC dynamics effectively.
4. Acquire and interpret sonographic images of the **heart (subcostal view) and IVC** in multiple planes.
5. Assess **volume status and fluid responsiveness** by evaluating IVC size and collapsibility.

5. Week 5

LIVE WEBINAR (All together)

6. Week 6

Wesam Ibrahim

Topic: Acute Cholecystitis and Gallbladder assessment

Core Topics:

- **Acute Cholecystitis and Gallbladder Pathology Assessment**
- **Case Discussion:** Clinical scenarios of GB pathologies
- **Journal Club:** Review and discussion of relevant research articles.

Learning Objectives:

1. Identify **surface landmarks** for accurate transducer positioning during sonographic examinations of the **gallbladder**.

2. Recognize key **sonographic windows and anatomical landmarks** relevant to gallbladder imaging.
3. Demonstrate the ability to visualize the **gallbladder** in both **transverse and longitudinal scanning planes**.
4. Interpret sonographic findings and identify potential pitfalls in diagnosing **cholelithiasis and cholecystitis**

7. **Week 7**

By Dr Mohamed Rashwan

Topic: Renal Ultrasound Assessment/Ascites

Core Topics:

- **Assessment of Acute Kidney Injury (AKI):** Identifying and evaluating renal dysfunction.
- **Ascites Assessment:** Recognizing and assessing free fluid accumulation.
- **Case Scenarios:** Clinical applications and practical discussions.
- **Journal Club:** Review and discussion of relevant research articles.

Learning Objectives:

1. Identify **surface landmarks** for accurate transducer positioning during sonographic examinations of the **kidney**.
2. Recognize key **sonographic windows and anatomical landmarks** relevant to renal imaging.
3. Demonstrate the ability to visualize the **kidney** in both **transverse and longitudinal scanning planes**.
4. Interpret sonographic findings and recognize common pitfalls in diagnosing **hydronephrosis, kidney stones, and other renal pathologies**.
5. Identification, assessment for abdominal free fluid accumulation by bed side US



8. Week 8

Maged Al Warraky

Topic: Basic Vascular Access and Ultrasound-Guided Procedures

Core Topics:

- **Ultrasound-Guided Vascular Procedures:**
Techniques for **in-plane** and **out-of-plane** cannulation.
- **Line Insertion Scenarios:** Case-based discussions and practical applications.
- **Journal Club:** Review and discussion of relevant research articles.

Learning Objectives:

1. Identify **sonographic landmarks and anatomical relationships** relevant to vascular structures in the **neck, upper and lower extremities**.
2. Acquire and interpret **ultrasound images** of major vascular structures, including the **internal jugular, Subclavian, femoral and basilic veins** in live patient models.
3. Demonstrate **ultrasound-guided cannulation** using a vascular simulator.
4. Develop proficiency in both **in-plane** and **out-of-plane** needle visualization techniques.
5. Understand the **clinical applications and pitfalls** of ultrasound-guided vascular access to enhance procedural safety and efficiency.

9. Week 9

By Dr Walid Alhabashy

Topic: Deep Venous System and DVT Assessment

Core Topics:

- **Deep Venous System Study and DVT:** Principles and techniques for identifying deep vein thrombosis.
- **Case Scenarios:** Practical application of DVT ultrasound in clinical settings.
- **Journal Club:** Review and discussion of relevant research articles.



Learning Objectives:

1. Identify **sonographic landmarks and anatomical relationships** relevant to the **deep venous system** in the neck, upper extremities, and lower extremities.
2. Acquire and interpret **ultrasound images** of major venous structures, including the **internal jugular, brachial, axillary, femoral and Popliteal veins** in live patient models.
3. Demonstrate **compression ultrasound technique** to assess for **deep vein thrombosis (DVT)** in the upper and lower extremities.
4. Understand the **clinical implications, limitations, and pitfalls** of ultrasound in DVT evaluation.

10. Week 10

LIVE WEBINAR (All together)

11. Week 11

By Daniel Lichtenstein

Topic: Lung Ultrasound (LUS) and Pulmonary Assessment I

Core Topics:

- **Lung Ultrasound (LUS):** Understanding indications and applications and normal findings.
- **CXR vs. LUS:** Comparative advantages and limitations
- **Case presentation and discussion**
- **Journal Club:** Review and discussion of relevant research articles on pulmonary ultrasound.

Learning Objectives:

1. Review and understand the **sonographic artifacts of normal lung** that contribute to the diagnostic capacity of pulmonary ultrasound.

2. Identify and demonstrate **sonographic landmarks**, including the **ribs, pleura, diaphragm, and lung parenchyma**.
3. Compare and contrast **chest X-ray (CXR) and lung ultrasound (LUS)** in pulmonary assessment.
4. Develop proficiency in **interpreting pulmonary ultrasound findings** to enhance diagnostic accuracy and patient care.

12. Week 12

By Dr Silvia Mongodir,

Topic: Lung Ultrasound (LUS) and Pulmonary Assessment II

Core Topics:

- **Pneumothorax & Pleural effusion Detection:** Sonographic features and diagnostic accuracy.
- **Case-Based Discussions:** Clinical decision-making in protocolised approach.
- **Journal Club:** Review and discussion of relevant research articles

Learning Objectives:

1. Review and understand the sonographic artifacts and pathologic pulmonary conditions that give pulmonary ultrasound its diagnostic capacity. This includes, but is not limited to, pleural imaging, the absence of "lung sliding sign" and presence of lung point, the transition between Normal sliding and absence of lung sliding.
2. Diagnose and management of Pleural effusion, how to drain.
3. Review and demonstrate sonographic landmarks of the ribs, pleura, diaphragm, and lung parenchyma.

13. Week 13

By Dr Ahmed Hegazy



Topic: The Role of LUS in Parenchymal Lung diseases (Consolidation/Collapse /B lines)

Core Topics:

- LUS in pneumonia: lung consolidation/collapse, identification of acute pulmonary edema (APE)
- **Case Scenarios:** Practical application of lung ultrasound in Pneumonia.
- **Journal Club:** Review and discussion of relevant research articles on LUS.

Learning Objectives:

1. Understand sonographic artifacts of normal and pathologic pulmonary conditions in Pneumonia, APE
2. Demonstrate sonographic landmarks of the ribs, pleura, diaphragm, and lung parenchyma.
3. Distinguish between sonographic presentation of consolidation and collapse.
4. Review lung consolidation/collapse, including COVID/viral-related findings.
5. How to differentiate Cardiogenic from non-cardiogenic APE

14. Week 14

By Dr Walid Alhabashy

Topics:

Ultrasound for Airway Assessment
Gastric Ultrasound for Peri-Operative and ICU Care

Core Topics:

- Identification of airway structures
- Preoperative assessment of gastric contents
- **Case Scenarios & discussions**
- **Journal Club:** Review and discussion of relevant research articles on different cases of airway ultrasound.

Learning Objectives:

1. Understand the role of ultrasound in airway management.
2. Learn how to assess endotracheal tube (ETT) placement by Ultrasound.
3. Identify the cricothyroid membrane and perform ultrasound-guided cricothyroidotomy.
4. Understand the role of gastric ultrasound in perioperative aspiration risk assessment.
5. Learn how to assess gastric volume and content using ultrasound.
6. Apply findings in clinical decision-making for Anaesthesia and ICU safety

15. Week 15

LIVE WEBINAR (All together)

16. Week 16

By Dr Hesham

Faisal/A.Noreddin

Topic: Ultrasound-Guided Emergency Procedures

Core Topics:

- Ultrasound-guided thoracentesis, paracentesis, and pericardiocentesis
- **Case Scenarios:** Practical application of lung ultrasound in procedures.
- **Journal Club:** Review and discussion of relevant research articles on different procedures and impact on patient outcomes.

Learning Objectives:

1. Understand sonographic landmarks for **emergency procedures in the ED.**
2. Acquire and interpret sonographic images of critical anatomical areas (e.g., internal jugular, **Lung, chest wall, RUQ, and heart**).
3. Demonstrate ultrasound-guided procedures on simulation models.

17. Week 17

By Dr Walid Alhabashy

Topic: Basic Echocardiographic Views: What and How

Core Topics:

- Surface landmarks and different transducer positions



- Tips for optimal views and Identification of cardiac structures
- **Journal Club:** Review and discussion of relevant research articles on Echocardiography imaging.

Learning Objectives:

1. Demonstrate surface landmarks and transducer positions for Point of care trans thoracic Echocardiography.
2. Acquire and interpret sonographic images of the heart (Parasternal long, Parasternal short, apical and Subcostal views).

18. **Week 18**

By Prof. Michel Slama

Topic: Basic LV and RV Assessment

Core Topics:

- Basic LV/RV assessment by echo
- **Case Scenarios:** Practical application of POC Echocardiography in different emergencies.
- **Journal Club:** Review and discussion of relevant research articles on different cases of hemodynamic management using Echocardiography assessment of LV and RV and impact on patient outcomes.

Learning Objectives:

1. Acquire and interpret sonographic images of the heart, focusing on subcostal, parasternal long, parasternal short, and apical views and how to use them for LV/RV.
2. Eyeballing techniques for LV & RV assessment as a basic fast bed side tool
3. Basic echocardiographic tools for assessment



19. Week 19

By Prof. Michael Lanspa

Topic: Assessment of Pericardial Effusion/Tamponade

Core Topics:

- **Use of Echo in Pericardial effusion/tamponade assessment**
- **Case Scenarios:** Practical application of POC Echocardiography in Pericardial effusions/Tamponade.
- **Journal Club:** Review and discussion of relevant research articles on different cases of pericardial effusion and tamponade.

Learning Objectives:

1. Identify pericardial effusion, effect on the circulation,
2. Cardiac tamponade physiology /identification by echo
3. How to differentiate pericardial from pleural

20. Week 20

LIVE WEBINAR (All together)

21. Week 21

By Dr Walid Alhabashy

Topic: Assessment of Aortic and Mitral Valves

Core Topics:

- Echocardiographic imaging of Heart valves and its pathologies in acute settings
- **Case Scenarios:** Practical application of POC Echocardiography in Valvular heart disease imaging that is relevant to acute settings.
- **Journal Club:** Review and discussion of relevant research articles on different cases of Aortic and Mitral valve assessment.

Learning Objectives:



1. Demonstrate surface landmarks and transducer positions for valve echocardiography.
2. Acquire and interpret sonographic images of the heart valves (subcostal, parasternal long, parasternal short, and apical views).
3. Recognise common valves pathologies, e.g., Stenosis /regurge.

22. Week 22

Dr Thames Alaifan/Haitham Khalifa

Topic: Shock Approach Using Echocardiography

Core Topics:

- Protocol-based ultrasound for shock management
- **Case Scenarios:** Practical application of Shock management protocols
- **Journal Club:** Review and discussion of relevant research articles on different cases of shock management.

Learning Objectives:

1. Provide a sequenced ultrasound approach to medical shock.
2. Demonstrate surface landmarks for evaluating the heart, IVC, aorta, and peritoneum.
3. Review shock causes and responses to treatment.

23. Week 23

By Dr Ashraf, Rashwan, Hazem

Topic: Live Webinar: Everything About Pulmonary Embolism

24. Week 24

Exam Week

Module 2: Advanced ER POCUS module



25. Week 1 A.Noreddin/ Mona Sorour

How to use: Doppler PW, CW, Tissue, and Power

Core Topics:

- Doppler and advanced ultrasound techniques
- Cases of advanced views
- **Journal Club:** Review and discussion of relevant research articles on different cases of Doppler imaging.

Learning Objectives:

1. Understand the utility of motion modality (M-mode) and demonstrate its use.
2. Demonstrate the surface landmarks and transducer position necessary to perform an echocardiogram.
3. Acquire and interpret sonographic images of the heart (subcostal, parasternal long, parasternal short, and apical windows).
4. Understand Doppler (PW, CW, Tissue, and Power).
5. M-mode and Doppler in lung ultrasound.

26. Week 2 A.Noreddin /Islam Noeimn

Topic: Systolic vs. Diastolic Dysfunction

Core Topics:

- Myocardial ischemia and hypo-perfusion approach
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of systolic and diastolic dysfunction.

Learning Objectives:

1. Demonstrate landmarks and measurements for cardiac output.
2. Understand ultrasound findings for diastolic and systolic heart failure.
3. Integrate case-based learning for application.

27. Week 3

Wesam Ibrahim

Topic: Dyspnoea in ER

Core Topics:

- ILS: Interstitial lung syndrome and the BLUE protocol for dyspnea
- Right ventricular failure
- Cases
- Journal Club: Review and discussion of relevant research articles on different cases of dyspnea and pulmonary ultrasound.

Learning Objectives:

1. Review and understand the sonographic artifacts of normal and pathologic pulmonary conditions.
2. Learn the BLUE protocol in dyspnea & CLUE protocol for COVID.
3. Apply these findings through case discussions.

28. Week 4

Haitham Khalifa/Omer Jaradat

Topic: Differential Diagnosis of Shock in ER

Core Topics:

- Types of shock (Hemorrhage, cardiac, sepsis, obstructive)
- Cases

- **Journal Club:** Review and discussion of relevant research articles on different cases of shock management.

Learning Objectives:

1. Provide a sequenced approach to ultrasound in shock patients.
2. Demonstrate the surface landmarks and transducer positions for evaluation.
3. Review causes and potential responses (FALLS protocol).

29. Week 5 Topic: Live Webinar (Put it all together)

30. Week 6 Maged El Warraky / Ahmed El Sinousy

Topic: Ultrasound Uses in Cardiac Arrest

Core Topics:

- PREM Pseudo PEA and PRES True PEA
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of ultrasound use in cardiac arrest.

31. Week 7 Hesham Temraz/ Haitham Khalil

Topic: Differential Diagnosis of Acute Abdomen in Adults

Core Topics:

- Gastrointestinal ultrasound
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of abdominal ultrasound.

Learning Objectives:



1. Understand the sonographic appearance of the stomach, bowel, and pancreas.
2. Learn transducer choices and scanning protocols for GI exams.
3. Detect pathology such as ileus, pneumoperitoneum, appendicitis, and hernias.

32. **Week 8** **Maged El Warraky**

Topic: Differential Diagnosis of Torsion and Inflammation

Core Topics:

- Testicular and ovarian ultrasound
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of genital ultrasound.

Learning Objectives:

1. Differentiate testicular torsion vs. epididymitis.
2. Recognize ovarian torsion vs. oophoritis.

33. **Week 9** **Liqaa Rafee/ Dina Magdy**

Topic: Paediatric Ultrasound

Core Topics:

- **Pediatric imaging techniques**
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of pediatric ultrasound.

Learning Objectives:

1. Recognize pediatric ultrasound applications beyond adult imaging.

2. Learn transducer choices and scanning protocols.
3. Apply pediatric ultrasound techniques with tips and tricks.

34. Week 10 **Topic: Live Webinar (Put it all together)**

35. Week 11 **Amjad Mak-hour/ Mohamed Megdadir**

Topic: Differential Diagnosis of Acute Abdomen in Children

Core Topics:

- Pediatric gastrointestinal ultrasound
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of pediatric abdominal ultrasound.

Learning Objectives:

1. Understand the sonographic appearance of normal stomach, large and small bowel, and pancreas, including normal anatomical structures and normal bowel peristalsis.
2. Describe transducer choices, scanning protocols and patient positions necessary to perform a gastrointestinal examination.
3. Identify and detect gastrointestinal pathology in pediatrics such as appendicitis, volvulus, intussusception, or intestinal obstruction.

36. Week 12 **Grace Wanjiku**

Topic: Pelvic Ultrasound: Transabdominal vs. Vaginal Approaches

Core Topics:

- Endo-cavitary probe applications
- Cases

- **Journal Club:** Review and discussion of relevant research articles on different cases of pelvic ultrasound.

Learning Objectives:

3. Understand the sonographic appearance of normal uterus, fallopian tube, including normal anatomical structures and normal bowel peristalsis.
4. Describe transducer choices, scanning protocols and patient positions necessary to perform a pelvic examination.

37. Week 13

Grace Wanjiku

Topic: 1st Trimester and Differential Diagnosis of Intra- vs. Extra-Uterine Pregnancy

Core Topics:

- Obstetric ultrasound
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of 1st-trimester pregnancy assessment.

Learning Objectives:

1. Use OB POCUS for diagnosing vaginal bleeding and gestational dating.
2. Recognize intra-uterine pregnancy & 1st-trimester findings: gestational sac, yolk sac, and foetal pole.

38. Week 14

Grace Wanjiku

Topic: 2nd & 3rd Trimester: Placenta and Obstetric Haemorrhage

Core Topics:

- Obstetric ultrasound
- Cases



- **Journal Club:** Review and discussion of relevant research articles on different cases of 2nd & 3rd trimester assessment.

Learning Objectives:

1. Use OB POCUS to diagnose vaginal bleeding in later pregnancy.
2. Measure foetal cardiac activity and
3. Assess placental location in the 2nd & 3rd trimester.

39. Week 15 **Topic: Live Webinar (Put it all together)**

40. Week 16 **Olfa Chakroun-Walha & Mohamad Boulad.**

Topic: **Transverse and Longitudinal Neck Ultrasound**

Core Topics:

- Airway ultrasound
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of airway ultrasound.

Learning Objectives:

1. Describe ultrasound techniques to detect upper airway anatomy and guide correct ETT placement.
2. Learn how to perform ultrasound-guided cricothyroidotomy.

41. Week 17 **Mohamed Nasreddin**

Topic: **Ocular Ultrasound: Eyeball and Optic Nerve Exam**

Core Topics:

- Ocular ultrasound
- Cases

- **Journal Club:** Review and discussion of relevant research articles on different cases of ocular ultrasound.

Learning Objectives:

1. Understand how sonography can reveal eye pathology.
2. Recognize normal ultrasound anatomy of the eye: cornea, lens, posterior chamber, retina, and macula.
3. Select the correct probe and perform ocular ultrasound safely.
4. Identify conditions like retinal detachment, posterior vitreous haemorrhage, and lens dislocation.

42. Week 18

Haitham Khalifa

Topic: Differential Diagnosis of Cellulitis vs. Abscess

Core Topics:

- Musculoskeletal ultrasound
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of musculoskeletal ultrasound.

Learning Objectives:

1. Compare diagnostic musculoskeletal ultrasound to other imaging modalities.
2. Identify various tissue appearances on ultrasound.
3. Apply ultrasound techniques to visualize musculoskeletal structures.
4. Perform musculoskeletal ultrasound on different upper and lower limb structures.

43. Week 19

Mohamed Abassy

Topic: Bone Fracture and Joint Dislocation Ultrasound

Core Topics:

- Musculoskeletal-shoulder ultrasound
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of bone fractures and dislocations.

Learning Objectives:

1. Understand the indications for shoulder ultrasound (e.g., rotator cuff tears, bursitis).
2. Recognize clinical presentations such as chronic shoulder pain and movement restriction.
3. Scan the biceps tendon, subscapularis, supraspinatus, and infraspinatus tendons.
4. Identify pitfalls like angulation drop-out and shadowing effects.
5. Diagnose fractures and dislocations.

44. Week 20

Topic: Live Webinar (Put it all together)

45. Week 21

Ahmed Salman/ Salah Itmizan

Topic: Introduction to Nerve Anatomy and Nerve Block Procedures

Core Topics:

- Peripheral nerve block ultrasound
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of ultrasound-guided nerve blocks.

Learning Objectives:



1. Explain the physiology and anatomy of nerve blocks (e.g., brachial plexus, axillary, femoral).
2. Identify factors affecting success and complications.
3. Demonstrate approaches for peripheral nerve blocks in upper and lower extremities.
4. Perform peripheral nerve block simulations using ultrasound guidance.

46. Week 22

Wesam Ibrahim

Topic: POCUS as the Fifth Pillar of Clinical Examination

Core Topics:

- Advanced ultrasound protocols (POCUS, FALLS, CLUE, RUSH, CASA, HI MAP, PRES, PROM, BLUE)
- Cases
- **Journal Club:** Review and discussion of relevant research articles on different cases of POCUS protocols.

Learning Objectives:

1. Understand the role of POCUS in clinical examination.
2. Learn different ultrasound-based protocols and their applications.

47. Week 23-24

EXAM

Module 2: Advanced Critical Care Ultrasound module



25. Week 1

By Hazem Mousa

Topic: Advanced TTE Echo Views

Core Topics:

- Advanced TTE views: what intensivists need to focus on.
- Cases where advanced views matter
- **Journal Club:** Review and discussion of relevant research articles on different cases of advanced TTE views.

Learning Objectives:

1. Understand what advanced TTE views and their importance in ICU patients.
2. Identify and recognize important structures and their implications in ICU patients.
3. Use of these views to do measurements needed e.g., Pulmonary Artery pressure, PCWP, etc

26. Week 2

By Thamer Alaifan

Topic: Advanced LV/RV Assessment

Core Topics

- Advanced LV/RV Assessment using Bed side echo; what we need to know.
- Case scenarios where advanced LV and RV assessment matters
- **Journal Club:** Review and discussion of relevant research articles on different cases of LV/RV assessment.

Learning Objectives:

1. Learn how to measure EF and differences between EF & COP.
2. Recognize RWMA and territory of coronaries.
3. Use **tissue Doppler** in assessment of both systole and diastole.
4. Explore new tools for LV/RV assessment.

27. Week 3

By Antoine Villard Barone



Topic: Right Heart Syndrome in ICU: Echo Role

Core Topics:

- Right Heart Syndrome and ARDS: Echo Role
- Case Discussion
- **Journal Club:** Review and discussion of relevant research articles on different cases of RV dysfunction and ARDS.

Learning Objectives:

1. Understand the role of echocardiography in diagnosing right heart dysfunction in ICU patients.
2. Diagnose RV dysfunction in ARDS.
3. Use echo to guide ventilation strategies and avoid worsening RV dysfunction.

28. Week 4

By Michel Slama

Topic: Infective Endocarditis in ICU

Core Topics:

- Infective Endocarditis (IE) in ICU, what a role for bed side TTE
- Case scenarios of IE
- **Journal Club:** Review and discussion of relevant research articles on different cases of infective endocarditis.

Learning Objectives:

1. Use echocardiography in the diagnosis of infective endocarditis.
2. Recognize pathology associated with IE.
3. Assess valve function.
4. Utilize echocardiography in management planning.

29. Week 5

Topic: Live Webinar (Put it all together)



30. Week 6

By Nibras Bughra

EASY in ICU:

31. Week 7

By Mohamed Rashwan

Topic: VeXUS in ICU

Core Topics:

- System venous congestion in ICU and VeXUS scoring echo role.
- Case discussions about current different cases of systemic venous congestion
- **Journal Club:** Review and discussion of relevant research articles on evidence of VeXUS use in hemodynamic management.

Learning Objectives:

1. Understand systemic **venous congestion**.
2. Use Echocardiography to **score congestion** in **hepatic, portal, renal veins, and IVC**.
3. Develop a congestion scoring system for **clinical application**.

32. Week 8

By Silvia Mongodi

Topic: Role for LUS in ARDS: Prone/PEEP/RM

Core Topics:

- Role in Diagnosis
- Role for LUS in Recruitment, application and F/U: Prone/PEEP/RM
- Cases when advanced LUS is used for decision making in ARDS and follow up the effect on lung parenchyma.
- **Journal Club:** Review and discussion of relevant research articles on different cases of LUS in ARDS.

Learning Objectives:



1. Assess the effect of **prone positioning on recruitment**.
2. **Evaluate the effect of PEEP/RM on recruitment** using LUS.
3. Use lung ultrasound scoring in ARDS.

33. Week 9

By Ashraf Al Tayar

Topic: Diaphragm Ultrasound Study

Core Topics:

- **Diaphragm Ultrasound Study**
- Cases of **Diaphragm Ultrasound**
- **Journal Club:** Review and discussion of relevant research articles on different cases of diaphragm ultrasound.

Learning Objectives:

1. **Identify** the diaphragm using ultrasound.
2. **Measure** diaphragm **thickness and excursion**.
3. Use **ultrasound for weaning** assessment in ventilated patients.

34. Week 10

Topic: Live Webinar (Put it all together)

35. Week 11

By Michael Lanspa

Topic: Weaning from Mechanical Ventilation: Heart, Lung, Diaphragm Approach

Core Topics:

- Weaning from Mechanical Ventilation: Heart, Lung, Diaphragm Approach
- Case scenarios on weaning with Ultrasound guidance
- **Journal Club:** Review and discussion of relevant research articles on different cases of weaning from mechanical ventilation.

Learning Objectives:



1. Integrate heart-lung-diaphragm ultrasound for weaning readiness assessment.
2. Assess systolic and diastolic cardiac function.
3. Evaluate lung aeration and diaphragm function.

36. Week 12

By Mustafa Essam

Topic: TEE in ICU: Why and How?

Core Topics:

- TEE views: why & how to obtain them
- Cases with TEE clinical decision making
- **Journal Club:** Review and discussion of relevant research articles on different cases of TEE in ICU.

Learning Objectives:

1. Understand indications and contraindications of TEE in ICU settings.
2. Learn how to obtain basic TEE views.
3. Identify structures using TEE imaging.

37. Week 13

By Dr Ahmed Hegazy

Topic: TEE in Valve Assessment in ICU

Core Topics:

- TEE in Valve Assessment in ICU
- Case scenarios of Valvular heart disease when no TTE views!
- **Journal Club:** Review and discussion of relevant research articles on different cases of TEE valve assessment.

Learning Objectives:

1. Assess heart valves for different pathologies using TEE.

2. Understand the advantages of TEE in assessment of Valvular heart disease.
3. Identify different valve pathologies.

38. Week 14

By Dr Walid Alhabashy

Topic: TEE in Hemodynamic Assessment in ICU

Core Topics:

- TEE in Hemodynamic Assessment in ICU
- Case scenarios
- **Journal Club:** Review and discussion of relevant research articles on different cases of TEE in hemodynamic assessment.

Learning Objectives:

1. Compare the advantages of TEE over TTE in ICU.
2. Learn different TEE modalities for hemodynamic assessment.

39. Week 15

Topic: Live Webinar (Put it all together)

38. Week 16

By Dr Michel Slama

Topic: TEE in Stroke and Intracardiac Masses

Core Topics:

- TEE in Stroke and Intracardiac Masses
- Case scenarios
- **Journal Club:** Review and discussion of relevant research articles on different cases of TEE in stroke evaluation.

Learning Objectives:

1. Use TEE to identify sources of embolization.
2. Recognize patent foramen ovale (PFO).
3. Assess the left atrial appendage (LAA) using TEE.

40. Week 17

By Dr Ashraf Al Tayar

Topic: ONSD: Optic Nerve Sheath Diameter

Core Topics:

- **Optic Nerve Sheath Diameter for ICP: role of POCUS**
- **Case scenarios**
- **Journal Club:** Review and discussion of relevant research articles on different cases of ONSD measurement.

Learning Objectives:

1. Use ultrasound to identify the optic nerve.
2. Measure ONSD to reflect intracranial pressure (ICP).
3. Understand clinical indications for ONSD measurement.

41. Week 18

By Dr Chiara Robba

Topic: Transcranial Doppler (TCD): Why and How?

Core Topics:

- **TCD in ICP monitoring**
- **Case scenarios**
- **Journal Club:** Review and discussion of relevant research articles on different cases of TCD application.

Learning Objectives:

1. Learn when and how to use TCD in ICU.
2. Use **TCD in ICP management.**

42. Week 19

By Dr Aarti Sarwal

Topics: TCD in Subarachnoid Haemorrhage (SAH) and Brain Death

Core Topics:



- **TCD in Subarachnoid Haemorrhage (SAH) and Brain Death**
- **Case scenarios**
- **Journal Club:** Review and discussion of relevant research articles on different cases of TCD in SAH and brain death assessment.

Learning Objectives:

1. Understand the role of TCD in SAH management.
2. Identify vasospasm using TCD.
3. Use TCD to diagnose and confirm brain death.

44. Week 20

Topic: Live Webinar (Put it all

together)

43. Week 21

By Dr Hesham Faisal

Topic: POCUS in ECMO Patients

Core Topics:

- Case scenarios
- **Journal Club:** Review and discussion of relevant research articles on different cases of POCUS in ECMO management.

Learning Objectives:

1. Use POCUS for assessment and management of ECMO patients.
2. Evaluate hemodynamic status using ultrasound.
3. Perform volume assessment using POCUS.
4. Assess different organs using ultrasound in ECMO patients.

43. Week 22

By d r.Ashraf AlTayar



Topic: Let us Review & AI in CCUS

Core Topics:

- Revisit the Role of Critical care Echo in ICU
- Different Cases scenarios
- Journal Club: Review and discussion of relevant research articles

Learning Objectives:

1. Understand the role of gastric ultrasound in perioperative aspiration risk assessment.
2. Learn how to assess gastric volume and content using ultrasound.
3. Apply findings in clinical decision-making for Anaesthesia safety.

43. Week 23

Exam week

45. Week 24

Topic: Exam Week

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