



'HOCUS' PoCUS

RCP Update-in-Medicine, Cardiff

5th December 2024

Eugene Tabiowo

Essential

~~'HOCUS'~~ PoCUS

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Declaration for Eugene Tabiowo

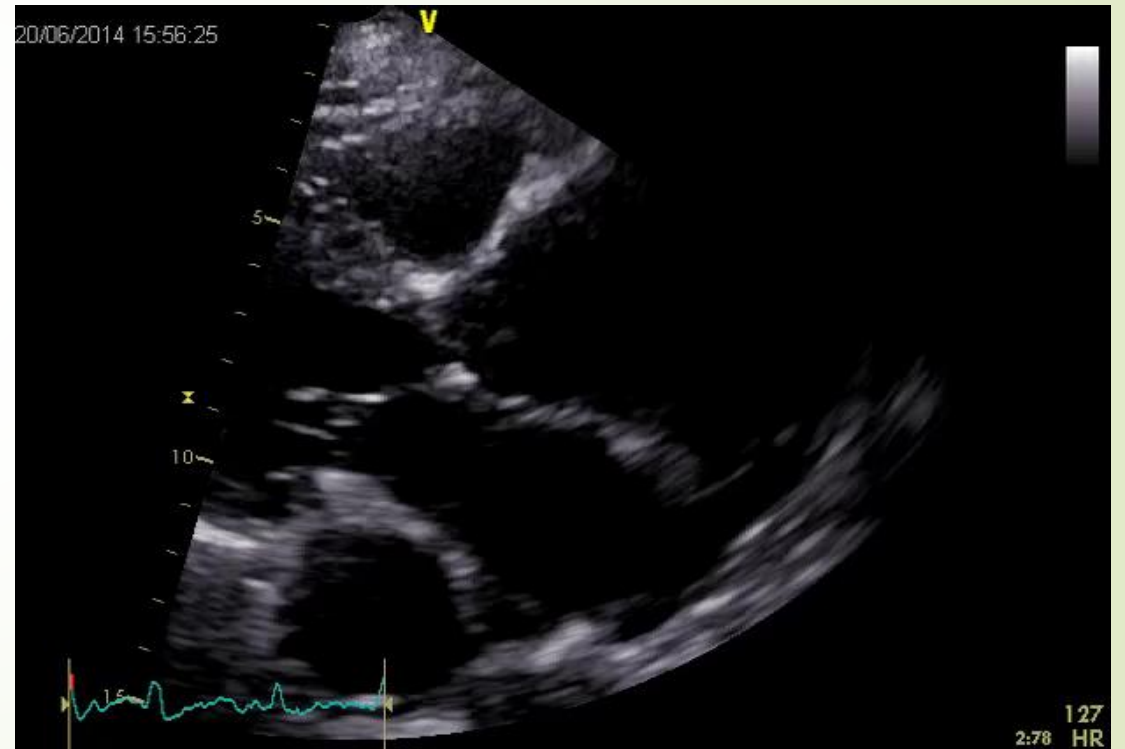
- ▶ Acute Medicine Consultant (2014)
 - ▶ Royal Glamorgan Hospital
 - ▶ Ultrasound Accreditation
 - ▶ BSE Level 2 (Adult Transthoracic Echocardiography); PgCert in Medical Ultrasound
 - ▶ Supervisor for
 - ▶ Focused Acute Medicine UltraSound (FAMUS)
 - ▶ Focused Ultrasound in Intensive Care (FUSIC)
 - ▶ Secretary to FAMUS Group (Sub-committee of Society for Acute Medicine, SAM)
 - ▶ Lead for Point of Care Ultrasound (PoCUS) for School of Medicine, HEIW
 - ▶ Lead for PoCUS at National Imaging Academy Wales (NIAW)

I have no financial interests or relationships to disclose with regard to the subject matter of this presentation.



Essential
~~'HOCUS'~~ PoCUS – Why?

- CCT (February 2014)
- June 2014
 - Elderly lady with Palpitations
 - ECGs: AF
 - Rate control + Anticoagulate
 - Discharge with f/u
 - But then I saw...



Take Home:

- Learn to incorporate PoCUS, but how do I patient select?

- CCT (February 2014)
- June 2014
 - Elderly lady with Palpitations
 - ECGs: AF
 - Rate control + Anticoagulate
 - Discharge with f/u
- October 2014
 - Colleague review days earlier - Young man with chest pain (Sharp/ raised d-dimer/ anticoagulated) Results
 - Review with me on re-attendance: CTPA – No PE, No Aortic dilation; but then...



Take Home:

- Learn to incorporate PoCUS, but how do I patient select?
- History + suspicion generates the PoCUS question.

- CCT (February 2014)
- March 2015
 - Man with incidental atrial fibrillation (asymptomatic)
 - GP referral
 - Incidental AF ?onset
 - PMH - Chronic back pain
 - Haemodynamically stable
 - Plan
 - Rate control + anticoagulate + discharge with f/u



Take Home:

- Learn to incorporate PoCUS, but how do I patient select?
- History + suspicion generates the PoCUS question.
- PoCUS is essential for my practice!




Essential
~~'HOCUS'~~ PoCUS – How?

- Need for PoCUS is driven by specific acute questions
 - Questions are influenced by history and suspicion
- Essence is in the Focused Cardiac Ultrasound (FoCUS) statement

FoCUS is a cardiac ultrasound examination, dictated by a patient's symptoms (problem oriented) and cantered on the search of an answer or solution (goal directed) to a clinically relevant question or problem. It is not exhaustive, being focused on elucidating the underlying pathophysiology of a cardiovascular or respiratory critical state (simplified, qualitative), without necessarily aiming at establishing a final diagnosis. It fulfils the needs of critically ill patients (rapid, bedside, available anytime, and repeatable) or in the context in which it is applied (e.g. as a screening tool in more stable patients). It is performed at the point of care and generally by the same physician who manages the patient.

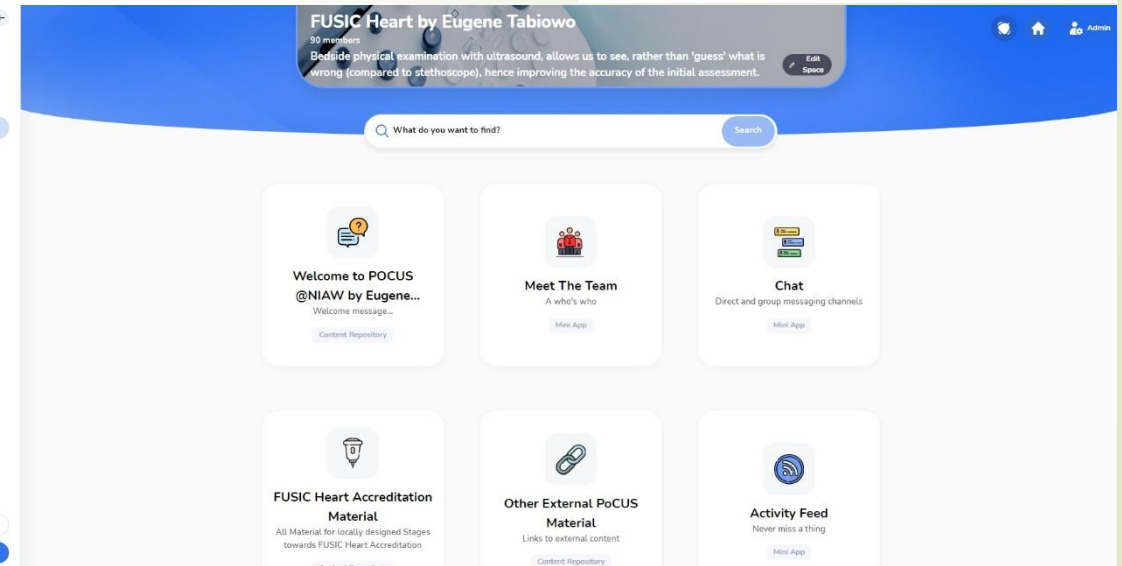
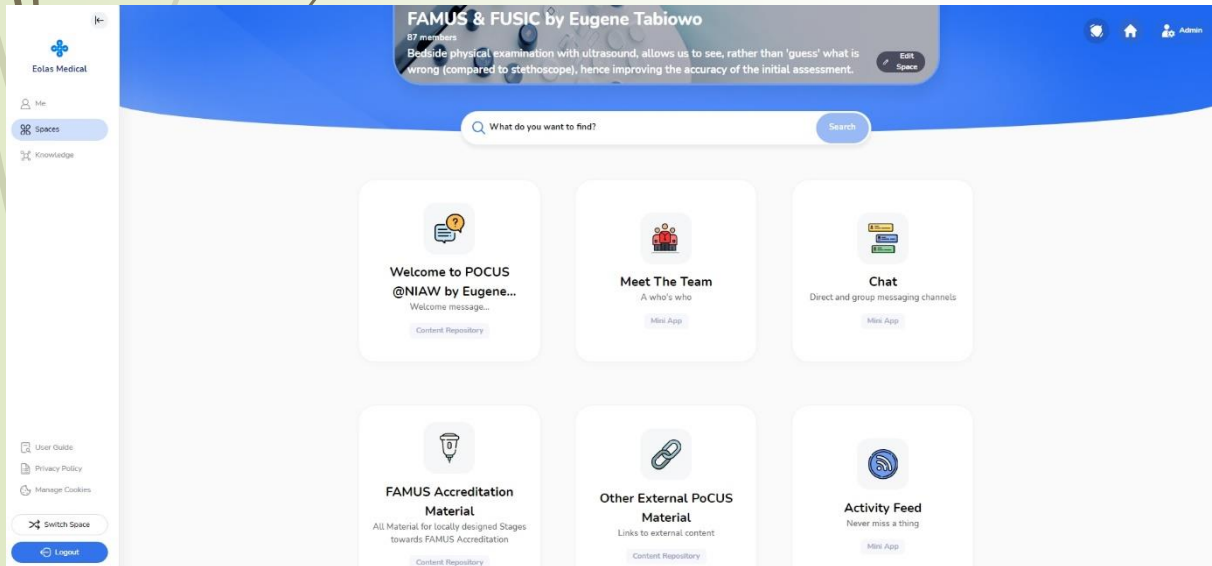
“...is a diagnostic tool tightly integrated into the decision making process”



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- Need for PoCUS is driven by specific acute questions
 - Questions are influenced by history and suspicion
 - How?
 - Upskill (me & others) - Competent Training
 - Incorporate - Feasibility within scope of practice
 - Influenced by the question, portability of equipment, & requires a flexible approach



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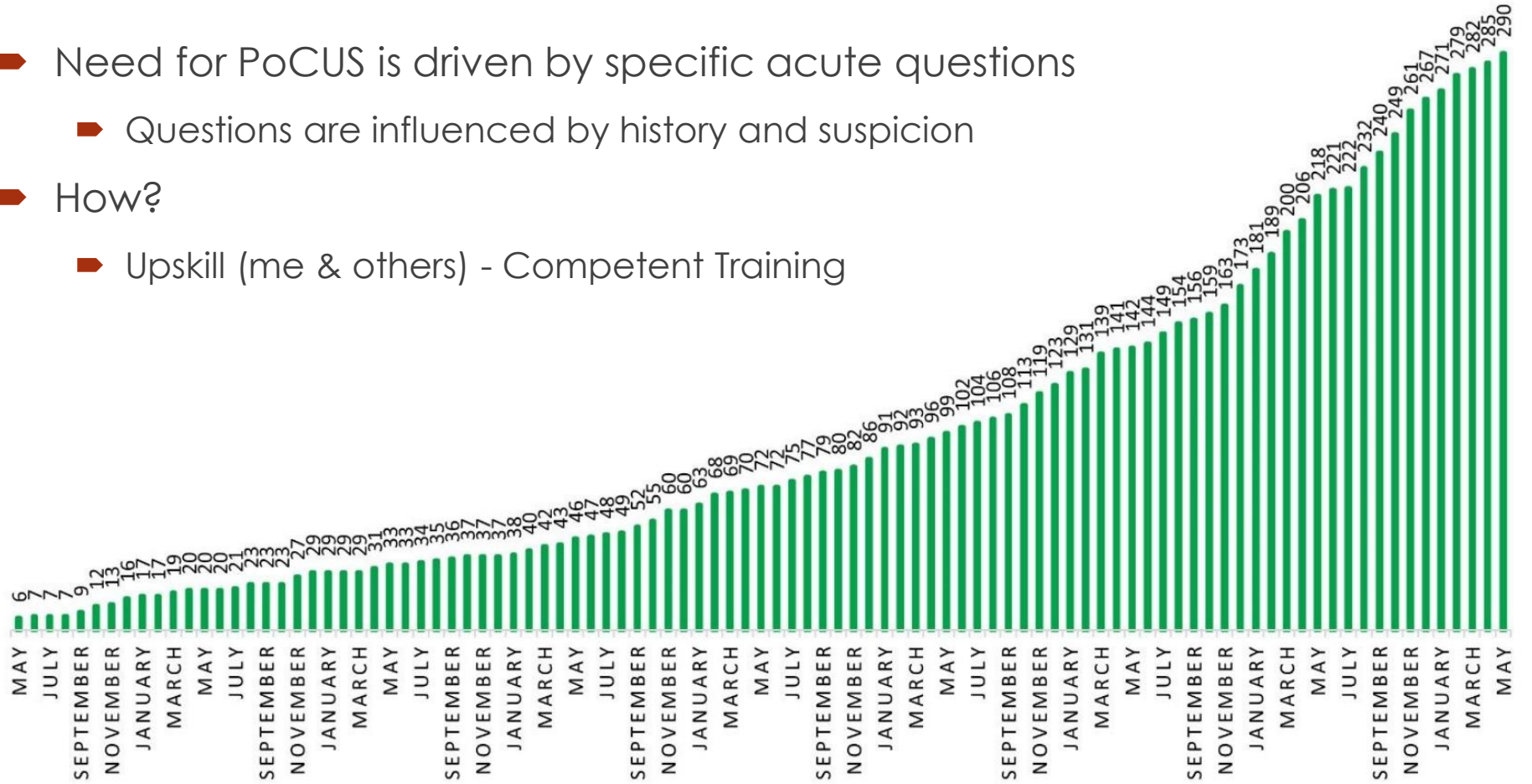




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The screenshot shows a Microsoft Teams channel page. At the top, there is a blue header with the channel name 'FAMUS & FUSIC by Eugene Tabiowo' and a description: 'Beside physical examination with ultrasound, allows us to see, rather than 'guess' what is wrong (compared to stethoscope), hence improving the accuracy of the initial assessment.' Below the header is a search bar with the text 'What do you want to find?'. The main content area features six tiles: 'Welcome to POCUS @NIAW by Eugene...' (Content Repository), 'Meet The Team' (Mini App), 'Chat' (Mini App), 'FAMUS Accreditation Material' (Content Repository), 'Other External PoCUS Material' (Content Repository), and 'Activity Feed' (Mini App). A left sidebar contains navigation options like 'Eolas Medical', 'Me', 'Spaces', 'Knowledge', 'User Guide', 'Privacy Policy', 'Manage Cookies', 'Switch Space', and 'Logout'.

The screenshot displays a section titled 'FAMUS Accreditation Material'. It includes a back arrow, a 'Share Section' button, and a search bar. Below these are six list items, each with an icon, a title, and a right-pointing arrow. The items are: 'Introduction & Accreditation Process Explained...' (2 file(s)), 'FAMUS Accreditation (Wales) - STAGE 1 (Knowledge Acquisition) of Training', 'FAMUS Accreditation (Wales) - STAGE 2 (Simulated Scanning) of Training', 'FAMUS Accreditation (Wales) - STAGE 3 (Supervised Scanning) of Training', 'FAMUS Accreditation (Wales) - STAGE 4 (Mentored Scanning) of Training', and 'FAMUS Accreditation (Wales) - STAGE 5 (Assessment of Completion) of Training'.

- Need for PoCUS is driven by specific acute questions
 - Questions are influenced by history and suspicion
- How?
 - Upskill (me & others) - Competent Training



- 
- 
- ▶ Need for PoCUS is driven by specific acute questions
 - ▶ Questions are influenced by history and suspicion
 - ▶ How?
 - ▶ Upskill (me & others) - Competent Training
 - ▶ Incorporate - Feasibility within scope of practice
 - ▶ Influenced by the question, portability of equipment, & requires a flexible approach
 - ▶ Handheld devices
 - ▶ Butterfly, GE and others
 - ▶ PoCUS Cart machines
 - ▶ GE, Mindray, Samsung, Sonosite and others

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- 
- Need for PoCUS is driven by specific acute questions
 - Questions are influenced by history and suspicion
 - How?
 - Upskill (me & others) - Competent Training
 - Feasibility within scope of practice
 - Influenced by the question, portability of equipment, & requires a flexible approach
 - Ward rounds and reviews
 - Used in addition to examination (handheld devices)
 - In SDEC area (room based cart)



Essential
~~'HOCUS'~~ PoCUS – What?

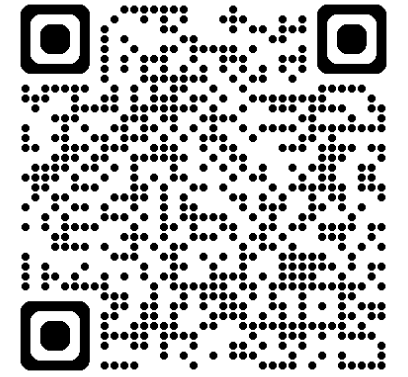
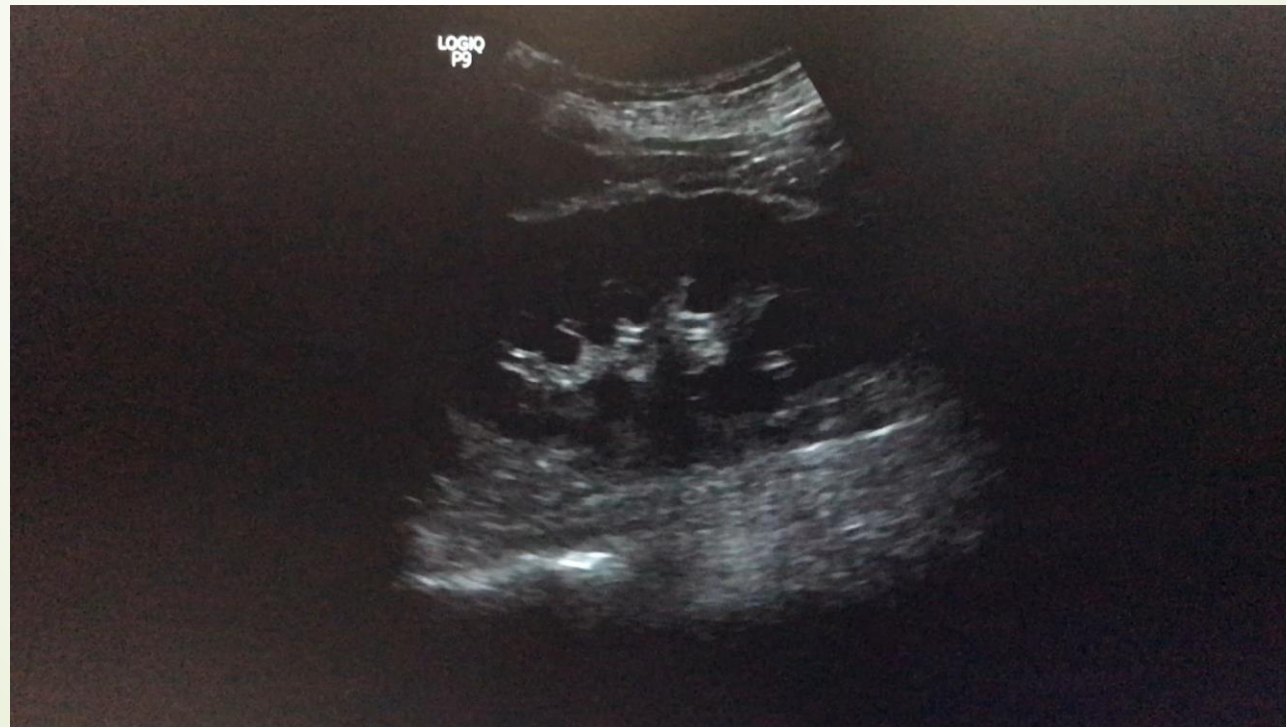
PoCUS in AKI

- ▶ Average scan length of 10 minutes

Table 2. Test statistics for all users (supervisors and trainees)

	Hydronephrosis seen in departmental scan	Hydronephrosis not seen in departmental scan	
Hydronephrosis in POCUS	9	0	PPV: 100%
Hydronephrosis not seen in POCUS	1	86	NPV: 99%
	Sensitivity: 90% (9/10)	Specificity: 100% (86/86)	

NPV = negative predictive value; POCUS = point-of-care ultrasound; PPV = positive predictive value.



Nepal et al Clin Med (2020) 20 (6): 541–4

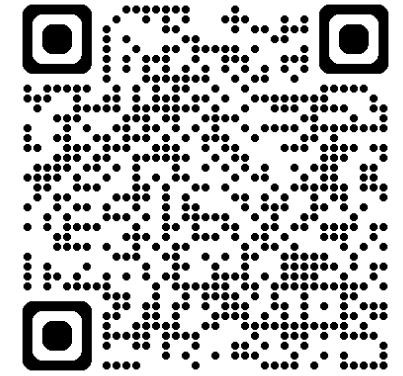
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Nepal et al Clin Med (2020) 20 (6): 541–4

PoCUS in DVT

- ▶ Similar diagnostic accuracy to departmental imaging



Healey et al Acute
Med (2021) 20 (4):
276–9

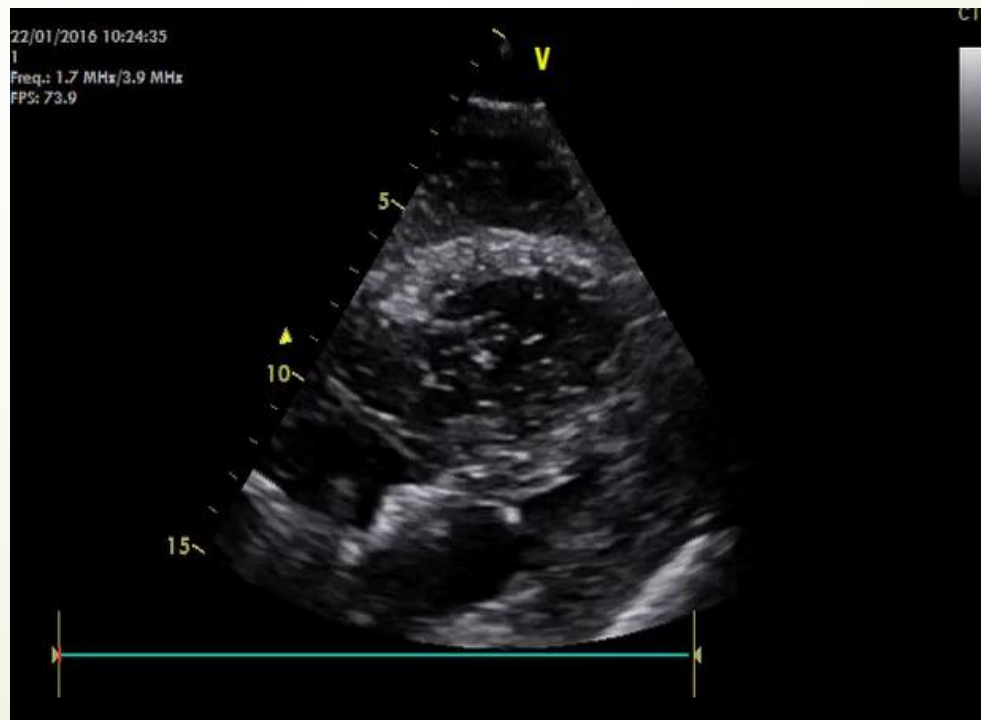
FoCUS in

Shock
& Arrest



Gabriele Via et al
J Am Soc
Echocardiogr. (2014
Jul 27 (7): 683.e1–
683.e33

- Improved detection LV dysfunction, cause of undifferentiated shock, cardiac arrest management
- 28 – Undifferentiated Shock
 - 1A: Strong Recommendation,
 - with Very Good Agreement;
 - Level A Evidence
- 29 – PEA Arrest
 - 1A: Strong Recommendation,
 - with Very Good Agreement;
 - Level A Evidence
- 31 – LV systolic dysfunction
 - 1B: Strong Recommendation,
 - with Very Good Agreement;
 - Level B Evidence



PoCUS in *Procedures*

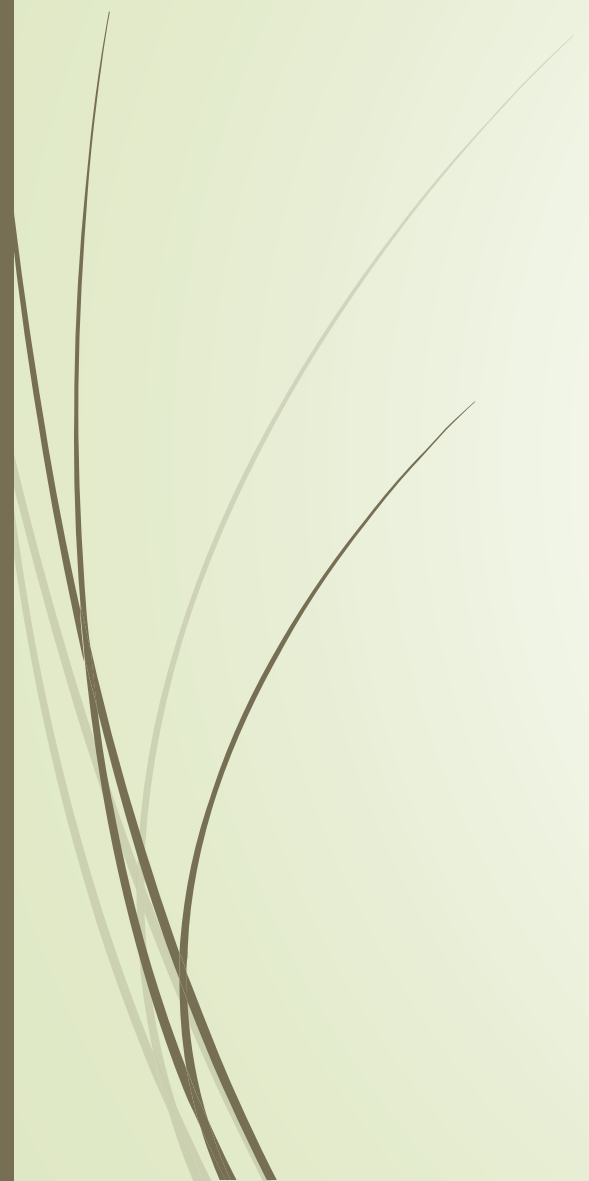
- ▶ Peripheral cannula:
 - ▶ Little evidence for low to moderate difficulty patients, some for high difficulty
- ▶ Ascitic (and pleural) procedures
 - ▶ Reduced complications and cost
- ▶ Lumbar puncture
 - ▶ Improved success, reduced trauma and number of needle insertions

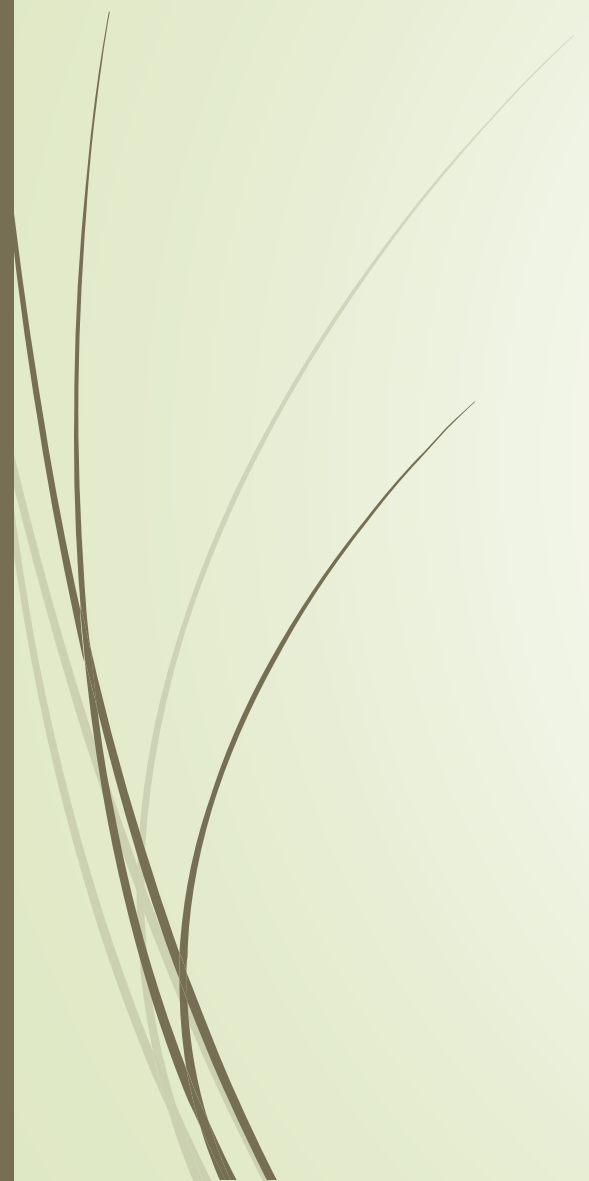







Essential
~~'HOCUS'~~ PoCUS – Impact







Essential
~~'HOCUS'~~ PoCUS – Take Home

- 
- ▶ PoCUS adds to your clinical exam to aid diagnostic accuracy
 - ▶ Training pathways exist and numbers of Supervisors are increasing
 - ▶ Multiple common presentations have a clear and unambiguous evidence base



Thanks for Listening

Questions?