Free-for-all POCUS should be discouraged

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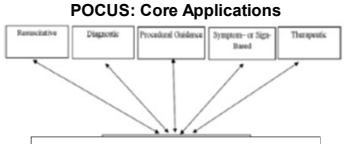
Sure, We **MUST** fully understand POCUS

Advantages

Limitations

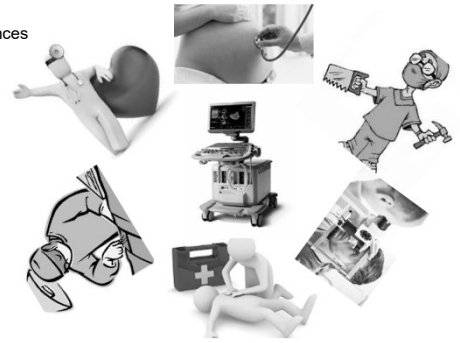
Likely resulting in diagnostic & therapeutic errors

POCUS: Core Applications



Trauma
O & G
Cardiology
Hepato-biliary systems
Abdominal aorta
Urinary Tract system
Soft tissue & Musculo-sleletal system
Opthalmology
DVT
Procedural guidance

Training Experiences



Important Assumptions:

Both (Std Echo in Echo lab and POCUS *in emergency settings*) :

Have the same amount of information obtained

Can be performed and interpreted in equally competent manner

Four areas

1. Equipment
2. Training, experiences, competence
3. Condition under which POCUS is done
4. Others

Every machine / device will have its strength and limitations

General purposes

- Capacity
- Signal to noise ratio
- Image quality, resolution
- Functions
- Cost
- Etc, etc . . . .

~~Strain/ SR~~
~~Torsion~~
~~3,4-D~~

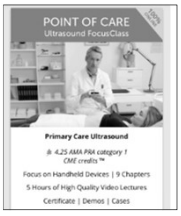
ACC/AHA CLINICAL COMPETENCE STATEMENT

ACC/AHA Clinical Competence Statement on Echocardiography

A Report of the American College of Cardiology/American Heart Association/American College of Physicians–American Society of Internal Medicine Task Force on Clinical Competence

Table 5. Training Requirements for Performance and Interpretation of Adult Transthoracic Echocardiography

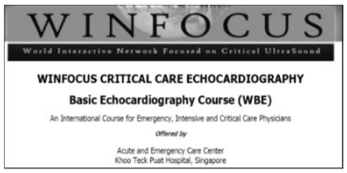
	Cumulative Duration of Training	Minimum Total Number of Examinations Performed	Minimum Number of Examinations Interpreted
Level 1	3 months	75	150



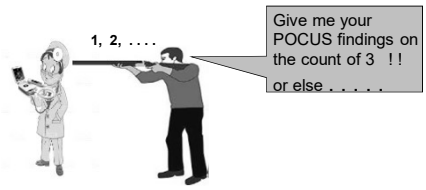
HALF TIME

Rapid Assessment by Cardiac Echo + (RACEplus)

Basic Emergency Sonography for Trauma (BEST)



POCUS doctor not only **performs** but also immediately **interprets** the US examination, and give **treatment** ASAP (***despites the exam is done under suboptimal conditions / unfavourable setting within a short period of time***)



Factors that may influence echocardiographic findings & interpretation in critically ill patients

- Positive pressure ventilation
- Filling status
- Inotropic status
- Metabolic status
- Effects of sedation on myocardial function
- O_2 and CO_2 levels
- Mechanical circulatory support
- Rapid examination, limited views
- Others

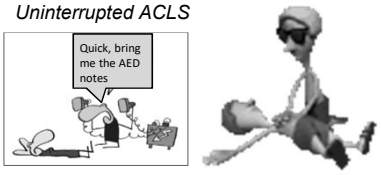
INTERNATIONAL FEDERATION FOR EMERGENCY MEDICINE

A focused ultrasound (POCUS) examination usually performed at the bedside of the patient, often in **suboptimal conditions** and with **time limitations**.

Also,

POCUS should **not** delay life-saving CPR & treatment of potentially fatal arrhythmias

Uninterrupted ACLS



Ultrasound (POCUS) use during CPR is associated with **delays** in chest compressions

Who says that ?

Maite A. Huis, Michael G. Allison et al.
Resuscitation 2017 October Volume 119, Pages 95–98

Conclusions
Use of POCUS during cardiac arrest resuscitation was associated with **significantly increased duration** of pulse checks

"It is important for acute care providers to pay clo[illegible] the duration of interruptions in the delivery of chest compr[illegible] using POCUS during cardiac arrest resuscitation".

FIRST DO NO HARM

Practicalities of performing Echo in cardiac arrest

ILCOR (*International Liaison Committee on Resuscitation*) recommends **adequate** training in performing echo during cardiac arrest

Operator must be aware of the importance of uninterrupted chest compressions, and where appropriate, immediate defibrillation

Limitations of the POCUS ⇨ may lead to serious **misinterpretation** / **omission** / or **delay** with potentially devastating clinical consequences.

Until we are fully prepared
(*good accredited trainings, adequately qualified/experienced doctors, with good equipment*), ... Otherwise

Free-for-all POCUS should be discouraged

A 70 yr-old Chinese man

c/o breathlessness, and mild chest discomfort

Referred as ? ACS

No cold sweats, palpitation, syncope, cough or fever

No HT, DM, asthma, PTB. Ex-smoker

PH: Rt shoulder arthroplasty done 2 years ago

Clinically afebrile, not toxic looking.

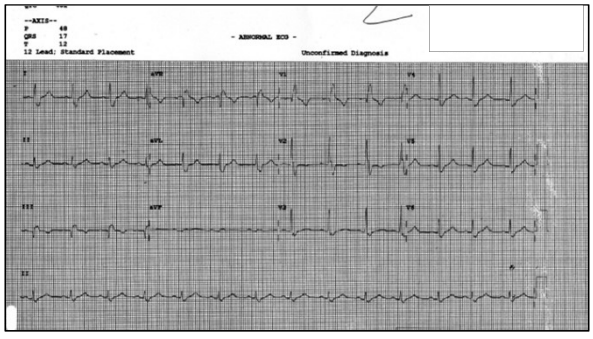
Not in CCF

Left foot slightly swollen and some tenderness

BP 130/70 mmHg; HR 84/min, regular

Ht S1S2. No S3 or gallop. P2 not accentuated

Lungs were clear




CHSC
S5-1
54Hz
17cm
2D
70%
C 50
P Low
HGen
TIS0.6 MI 1.3
HR: 74
0M3
5
X2
10
15
74 bpm
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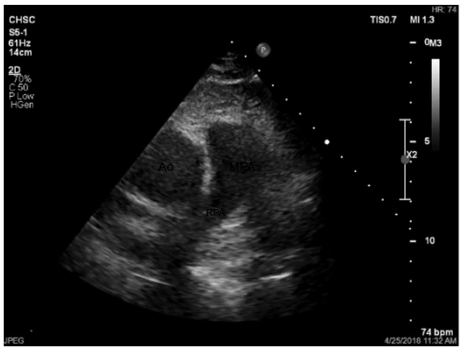
JPEG


CHSC
S5-1
61Hz
14cm
2D
70%
C 50
P Low
HGen
TIS0.7 MI 1.3
HR: 74
0M3
5
X2
AO
MS
RA
10
74 bpm
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JPEG


CHSC
S5-1
61Hz
14cm
2D
70%
C 50
P Low
HGen
TIS0.7 MI 1.3
HR: 79
0M3
5
X2
AO
RA
10
79 bpm
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JPEG

T0 a structured hospital (Pt's choice) after stat dose of xarelto given

XYZ Hospital

CXR: Heart size probably within normal limits
Some patchy shadowing at both lower zones, probably infective in origin (X-ray report)

do POCUS . . do POCUS . . do POCUS . .

Focused 2DEcho in ED:
PLAX, PSAX and Subcostal good windows
RV dilatation seen on all views
D shaped LV on PSAX
NO pericardial effusion

(No mention of clots in pulm arteries)

Initial invx:
Trop T 58 nt-proBNP 2019
RP normal
LFT normal
aPTT 42.9 PT 13.9
Hb 15.1 Tw 10.5 Plt 210
CXR: no consolidation or effusions
ECG: S1Q3T3, RBBB
CTPA:

ing bilateral right and left main pulmonary arteries (saddle thrombus)
(worse on the right side).

1. I do not object doing Point of Care Ultrasound

2. 1st echo showed bilateral pulm artery clots
2nd echo no mention of clot (*presumably no clot seen*)

CTPA showed bilateral pulm artery clots

3. Until we are ready, we should discourage POCUS from free-for-all approach