FELS

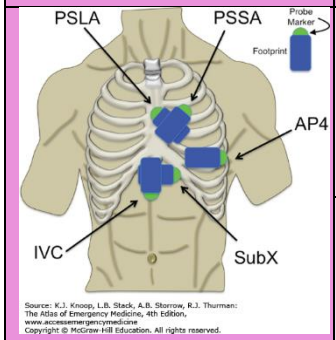
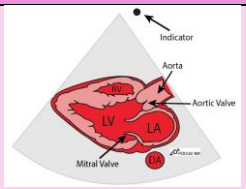
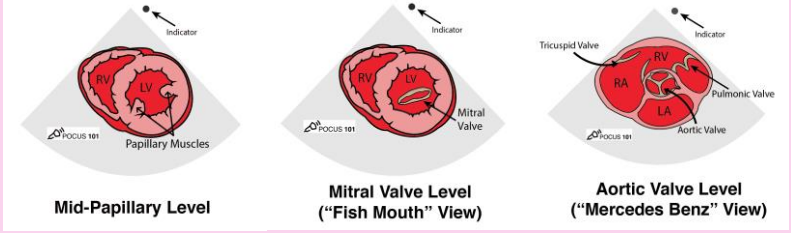
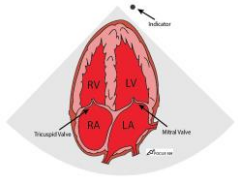
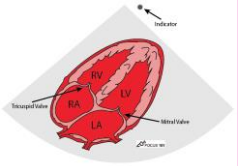
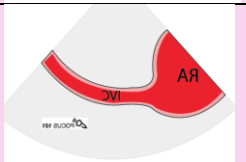
Focused Echo in Life Support is a limited ultrasound that aims to answer the following questions:

1. Is the heart beating?
2. Is there a pericardial effusion? (are there signs of tamponade?)
3. Is the LV hyperdynamic or is LV function grossly reduced?
4. Are there signs of RV strain?
5. Is the IVC size reduced and is it collapsing?

Patient details

Indication		**Pulse**	**BP**	**RR**	**Sats**

Examination Findings

Probe Position	**Views**	**Notes**	**Findings**				**Notes**
		**1. Parasternal Long Axis (PLAX)** Probe marker points to right shoulder, 2-4th ICS Visual assessment of size: RV = aortic root = LA Look at LV size and function (hyperdynamic, reduced) Check pericardium for effusion	**PLAX view**	Adequate	Limited	Not obtained	
			PSSAX view	Adequate	Limited	Not obtained	
			A4C view	Adequate	Limited	Not obtained	
			**Subxiphoid**	Adequate	Limited	Not obtained	
			IVC view	Adequate	Limited	Not obtained	
			Cardiac activity	Organised	Disorganised	None	
Preparation 1. **Patient data** entry, label images 2. **Probe**: phased array, marker to left 3. **Pre-set**: cardiac 4. **Position:** supine (unwell), left lateral decubitus; head/shoulder up 30-45 degrees lights dim if possible 5. **Image optimisation:** depth, Res/Gen/Pen, gain, TGC		**2. Parasternal Short Axis (PSSAX)** Marker to left shoulder & fan/tilt Visual assessment of LV & RV size and function. Look for IVS bowing (D-shape)	**LV Function**	Hyperdynamic	Normal	Grossly reduced	
		**3. Apical Four Chamber (A4C)** Visual assessment of LV and RV size and function RV to LV ratio <0.6-1 Is there RV strain – septal bowing, apical wink Is there a pericardial effusion or tamponade (collapse of RA and RV during filling)	**RV strain**	<u>Size</u> Normal Dilated	<u>Movement</u> Hypokinesis McConnell sign Interventricular septal bowing		
		**4. Subcostal/Subxiphoid** Visual assessment of LV and RV size and function Is there a pericardial effusion or signs of tamponade?	**Pericardial effusion**	Present	Large >2cm Moderate 1-2cm Small 0.5-1cm	<u>Tamponade?</u> IVC distended RA collapse RV collapse	
				Absent			
		**5. IVC** Rotate probe marker ~90 degrees to point to head Gross inspection +/- measure size of IVC and respiratory variability. IVC size in children is roughly the size of the aorta. Max IVC diameter is 2cm.	**IVC**	Distended with reduced collapsibility (<50%)	Normal size and collapsibility (>50%)	Reduced size and complete collapsibility	

Conclusions (Note: FELS findings must be consistent with clinical suspicion: integrate history, examination, investigations and USS findings).

Clinician	Signature	Date	Time	Credit: Ultrasound Village, POCUS 101