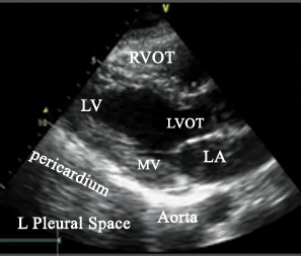
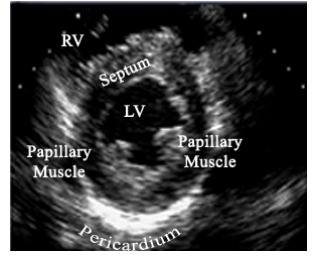
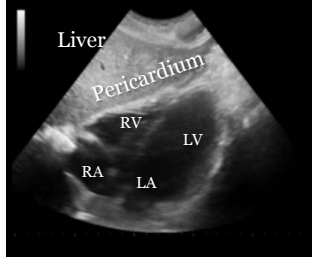
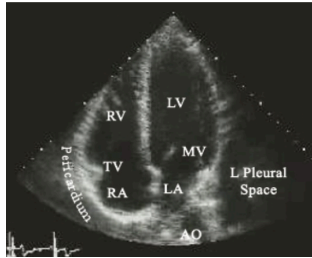
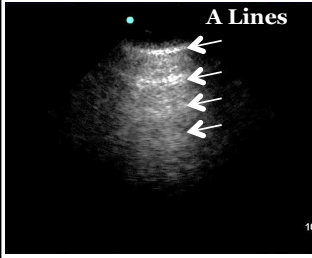
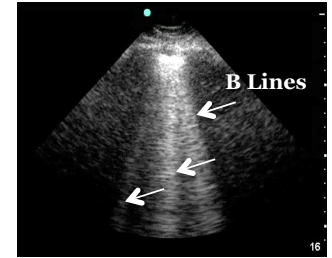
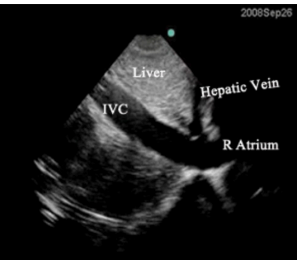
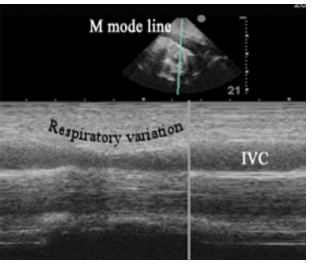
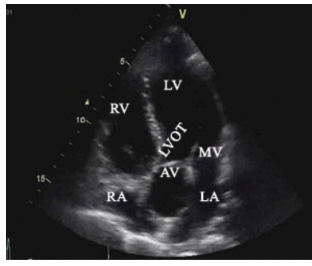
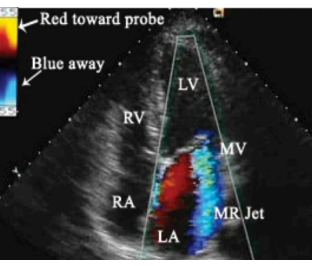
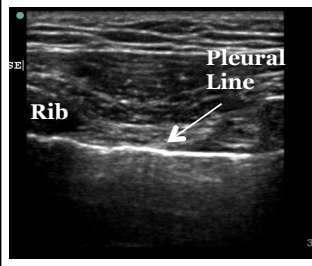
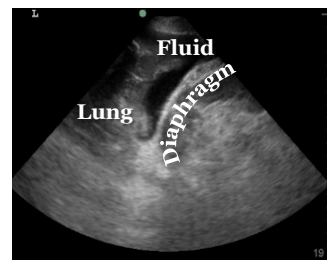


<p align="center">Parasternal Long Axis</p> <p align="center">Common Application "Scout view" LV Fn, pericardial fluid</p> 	<p align="center">Parasternal Short Axis</p> <p align="center">Common Application LV function Assess for D septum</p> 	<p align="center">Subcostal 4 Chamber</p> <p align="center">Common Application LV function, relative chamber size, arrest</p> 	<p align="center">Apical 4 Chamber</p> <p align="center">Common Application Relative chamber size Massive valvular lesions</p> 	<p align="center">Lung Aeration: 'A' Profile</p> <p align="center">Common Application Rules out parenchymal disease for resp failure</p> 	<p align="center">Lung Aeration: 'B' Profile</p> <p align="center">Common Application Identify parenchymal disease (interstitial synd)</p> 
<p>TIPS</p> <ul style="list-style-type: none"> *Start with this view *Index mark to 11 O'Clock *Not good for RV assessment 	<ul style="list-style-type: none"> *Rotate probe to 2 O'Clock *Papillary muscle level *D shaped septum = RV pressure overload 	<ul style="list-style-type: none"> *Hold probe overhand *Index mark to 3 O'Clock *Best view for cardiac arrest scenarios (ease of landmarking) 	<ul style="list-style-type: none"> *Index mark 2-3 O'clock *Steep tilt up in to chest *Most difficult view *L lat decubitus helpful 	<ul style="list-style-type: none"> *Repeating horiz lines *Normal aeration pattern *In resp failure supports COPD, asthma, PE *Phased probe best 	<ul style="list-style-type: none"> *B lines orig from pleura to bottom of screen *DDX: CHF, ARDS, PNA, *≥3 lines = pathological *Phased probe best
<p align="center">IVC</p> <p align="center">Common Application Volume responsiveness</p> 	<p align="center">IVC: M-mode</p> <p align="center">Common Application Volume responsiveness</p> 	<p align="center">Apical 5</p> <p align="center">Common Application Interrogation of aortic valve, incl CO calc</p> 	<p align="center">Color Doppler</p> <p align="center">Common Application Assess for massive MR or TR</p> 	<p align="center">Pleural Line</p> <p align="center">Common Application Rule out pneumothorax Confirm ETT placement</p> 	<p align="center">Pleural Space</p> <p align="center">Common Application Pleural effusion, chest tube ldmrk, pneumonia</p> 
<p>TIPS</p> <ul style="list-style-type: none"> *Follow to R atrium *Look for resp variation 2-3cm from RA *Of most value at extremes 	<ul style="list-style-type: none"> *Adjunct to 2D imaging *Assess for resp variation 2cm from heart *>50% variation = fluid responsive 	<ul style="list-style-type: none"> *From apical 4 view, tilt probe anteriorly *Generally limited to advanced users or esoteric ICU applications 	<ul style="list-style-type: none"> *Use "color" setting *Caution regarding color gain and color map *Most sensitive when parallel to flow (A4CV) 	<ul style="list-style-type: none"> *Linear or phased probe *Sagittal plane *Ribs serve as landmark *Sliding excludes PTX at site of probe 	<ul style="list-style-type: none"> *Pleff: 1.anechoic space, 2.typical anatomy, 3.dynamic signs *Phased or curved probe *Mid-post axillary line

Qpath Primer



To Access from any computer at LHSC:

1. In Internet Explorer URL bar type "start/qpath"
2. Login using Cerner login and Qpath password
3. Select desired study
4. To review images: click "Images" on upper menu
5. Assign Exam Type field from drop down (double click)
6. Enter interpretation by completing worksheet (click "Images/Worksheets" in upper menu)
7. To have exam reviewed, click "Submit for QA" to email notify appropriate supervisor (select from list)
8. Print completed worksheet by clicking "Exam" hyperlink (upper menu) – will open a PDF. Print and place in chart of patient.

➔ For video tutorials: uwosono.ca

Machine Operation



1. Press "start & end"
2. Enter PIN and Cerner login
3. Select desired probe
4. Generate good images
5. Save clips or stills
6. Repeat 4+5 as necessary
7. Press "start & end"
8. Clean machine

Probes

Phased Array



Heart/Torso
3-5MHz

Linear Array

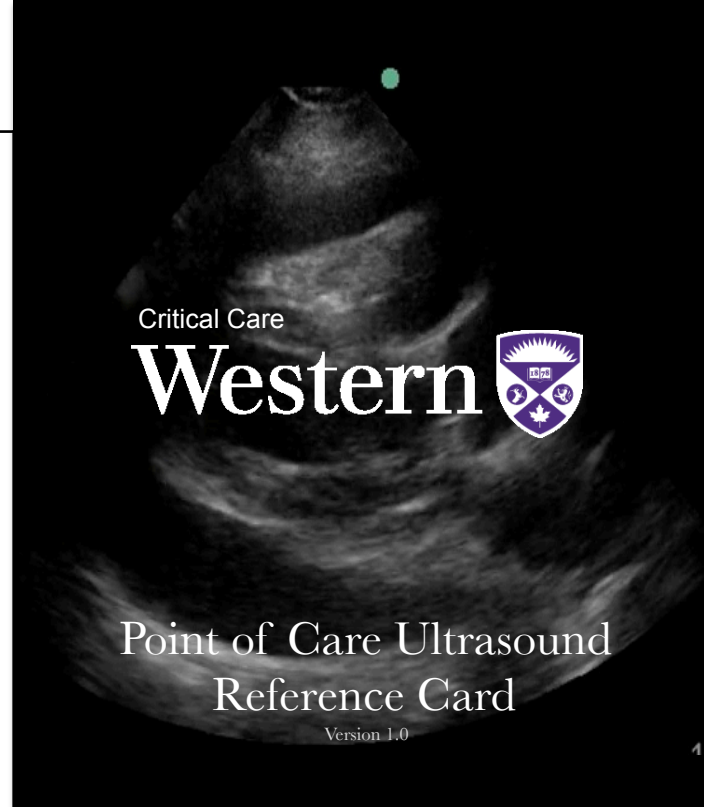


Vascular/Lung
7.5-10MHz

Curvilinear



Abdomen
3-5MHz



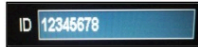
Documentation

How to archive your ICU studies:
(sonosite machines)

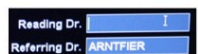
1. Open Patient Encounter (Hit A or B)



2. Enter Patient ID (LHSC PIN #)



3. Enter Referring Dr. (Your Cerner login name)



Optional

add Supervisor Cerner login to Reading Dr.

4. Capture Representative Image(s) (Clip or Save)



6 sec videos images

5. Add interpretation (Any Positive study)

- a. Hit TEXT
- b. Start typing



*Be sure to hit Clip/Save after text entered
**May also enter interpretation in Qpath

6. Close Patient Encounter



Basic Critical Care Ultrasound Applications

Diagnostic

- Undifferentiated shock
- Gross LV function
- Pericardial effusion
- Cor pulmonale
- Massive valvular lesions
- Volume responsiveness

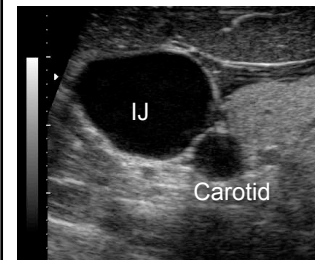
Procedural

- Chest drainage
- Central vein access
- Peripheral vein access
- Arterial access
- Paracentesis
- Pericardiocentesis

Mayo et al, CHEST 2009; 135:1050-1060

Internal Jugular Vein

Common Application
CVC insertion

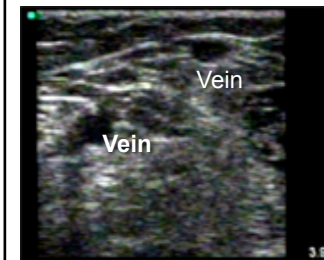


Tips:

- *Use short axis
- *Use "creep" method to always visualize tip

Peripheral Veins

Common Application
Peripheral IV insertion



Tips:

- *Use short axis
- *Avoid vessels > 3cm deep