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### Standardized Point-of-care Ultrasound (POCUS) set-up for cardiac evaluation during COVID-19 pandemic in a pediatric population.

Anmol Goyal

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# Standardized Point-of-care Ultrasound (POCUS) set-up for cardiac evaluation during COVID-19 pandemic in a pediatric population

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## Children's Mercy Kansas City

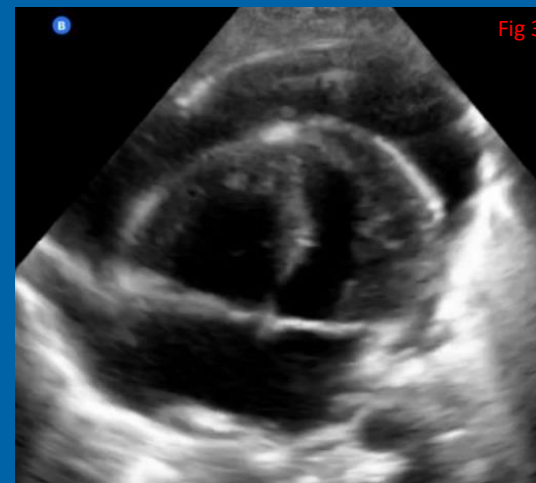
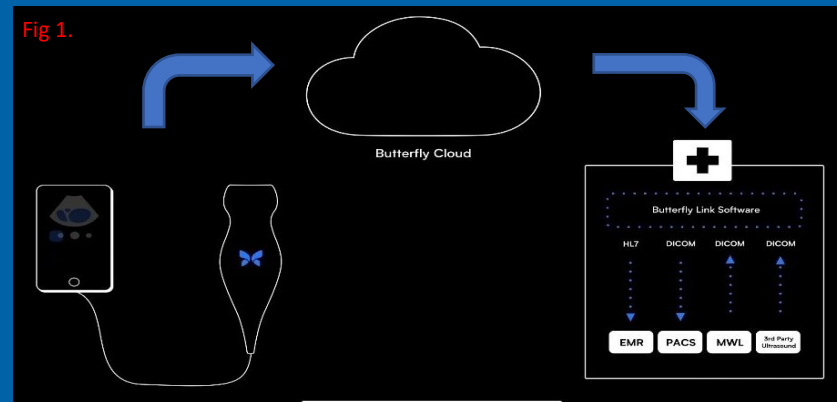
### BACKGROUND

- Novel coronavirus SARS-CoV2 can cause significant cardiac dysfunction, arrhythmias, effusion, thromboembolism and coronary dilation.
- There are no specific guidelines for use of POCUS for cardiac assessment in pediatric population.
- Objective: To establish feasibility for Pediatric POCUS using commercially available adult size equipment and standardize its use in pediatrics.

### METHODS

- A Phillips Lumify probe paired with an Android Samsung tablet and a Butterfly iQ probe paired with an iPad were considered and tested.
- A workflow algorithm and cleaning instructions were created.
- If the POCUS scan answered the clinical question, then a detailed echo was deferred.
- If the POCUS scan revealed findings requiring comprehensive evaluation, a follow-up echo was planned.

### POCUS: A feasible and economical tool for cardiac assessment in COVID-19 or similar acute care setting.



**Fig 1.** Secure IT setup to transfer data to our cardiology PACS and EMR. **Fig 2.** POCUS setup on IV pole + supplies. **Fig 3.** POCUS image showing significant pericardial effusion.

### RESULTS

- Both probes produced images of diagnostic quality.
- Due to hospital informatics support for iOS system, a Butterfly probe with iPad was preferred.
- Our network algorithm and equipment set-up are illustrated in figure 1-2.
- By using POCUS, pericardial effusion and systolic dysfunction could be identified and monitored as shown in figure 3.
- Coronary and valvar evaluation was limited.
- Average scan time was around 10 mins [range 6-15mins].

### CONCLUSION

- POCUS during COVID-19 pandemic is feasible in pediatrics with short scan time.
- Multiple economical probes are available that are easy to use and clean.
- Further comparative studies and pediatric specific POCUS probes and guidelines are needed to assess this modality as a first-line for cardiac evaluation in COVID-19 or similar acute care setting.