Our aims are to

1) determine clinically important factors on point of care ultrasound that may assist clinicians in determining progression of simple acute appendicitis diagnosed in children seen in an emergency department;

2) identify enabling and deterring factors for doing serial POCUS.

1.      Demographics: age, gender, weight, height of the patients  
- Table 1 (summary statistics) **Updated by Yiling 03/10/2020**  
- Covariates in later quetsions

2.      Stages of the acute appendicitis found on the second ultrasound (US) compared to the surgical pathology findings  
  
- Confusion matrix (Sequential Staging v.s. Surg Path Findings) (2x2 4x4, 4 for category) and Fisher Exact Test **Updated by Yiling 03/10/2020**

- Summary statistics for the table

3.      Changes in the stages of the acute appendicitis between the first (US1) and second US (US2)

a.      Did the administration of antibiotics make a difference?

- Summary table for people having US1, US2, and both.

- 4x4 table for US1 and US2

- Mixed Effect Model with ordinary variable adjusted by other factors  
- Wilcoxon signed ranks test   
- Simple Logistic regression (decrease or not) adjusted by demographics

4.      Time it takes to perform the POCUS

a.      By Radiology (RADUS)

b.      By pediatric emergency medicine team (POCUS)

- Two sample T test, paired t-test, and mixed effect model

Note: We might need to consider about the cohort effect.

5.      Receptivity of the POCUS by the performers

a.      Did the performers find this easy to do?

b.      Did the patients tolerate the diagnostic test (POCUS) well?

- Visualization and Summary Statistics