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

2.      Stages of the acute appendicitis found on the second ultrasound (US) compared to the surgical pathology findings

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?

4.      Time it takes to perform the POCUS

a.      By Radiology (RADUS)

b.      By pediatric emergency medicine team (POCUS)

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?

* **What we are going to do**: Cleaning and explore dataset.  
    
  **Corresponding to**: Demographics: age, gender, weight, height of the patients  
    
  **Method**: Visualization and Tables
* **What we are going to do**: Search out statistically significant differences in diagnosing Appendicitis stages between decisions made using Ultrasound and actual stages found in surgery through performing hypothesis test.  
    
  **Corresponds to**:   
  Stages of the acute appendicitis found on the second ultrasound (US) compared to the surgical pathology findings  
    
  **Method**: ROC plot
* **What we are going to do**: Identify enabling and deterring factors out of demographic characteristics, time of the procedures, and receptivity by the performers for conducting Ultrasound  
   **Corresponds to:**- Demographic characteristics  
  - Time it takes to perform the POCUS

a.      By Radiology (RADUS)

b.      By pediatric emergency medicine team (POCUS)

-  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?

**Method**: Regression

* **What we are going to do**: Evaluate the effectiveness of antibiotics treatment used between two successive Ultrasound procedures.  
    
  **Corresponds to**: Changes in the stages of the acute appendicitis between the first (US1) and second US (US2)  
    
  **Method**: T-test and Regression (what’s Y)