

## **Project Title**

Revising SGH Preoperative Cardiac Assessment Guideline and Referral Workflow for Elective Surgery

## **Project Lead and Members**

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- Singapore General Hospital
- Dr Ignasius Jappar
- Prof Terrence Chua

## **Organisation(s) Involved**

Singapore General Hospital, National Heart Center

## **Healthcare Family Group(s) Involved in this Project**

Medical, Nursing

## **Applicable Specialty or Discipline**

Anaesthesiology, Surgery, Cardiology

## **Aims**

- Reduce number of inappropriate referrals made to NHCS
- Reduce number of delayed surgeries for patients referred to NHCS
- Reduce number of patient visits to NHCS for preoperative assessment.

## **Background**

See poster appended/ below

## **Methods**

See poster appended/ below

## **Results**

See poster appended/ below

## **Conclusion**

See poster appended/ below

## **Project Category**

Care & Process Redesign

Quality Improvement, Clinical Practice Improvement, Workflow Redesign, Access to Care, Referral Rate, Value Based Care, Patient Satisfaction

## **Keywords**

Referral Rate, Anaesthesia, Preoperative, Cardiologist, Anaesthetist, Surgery

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## Introduction

### Background

- Patients who require surgery/endoscopic procedures and are suspected of having heart disease, referred to NHCS for pre-operative assessment
- Inappropriate referrals made for pre-op cardiac assessment with Insufficient referral information on the referral form
- Delay in surgery if pre-operative assessments are not done in time

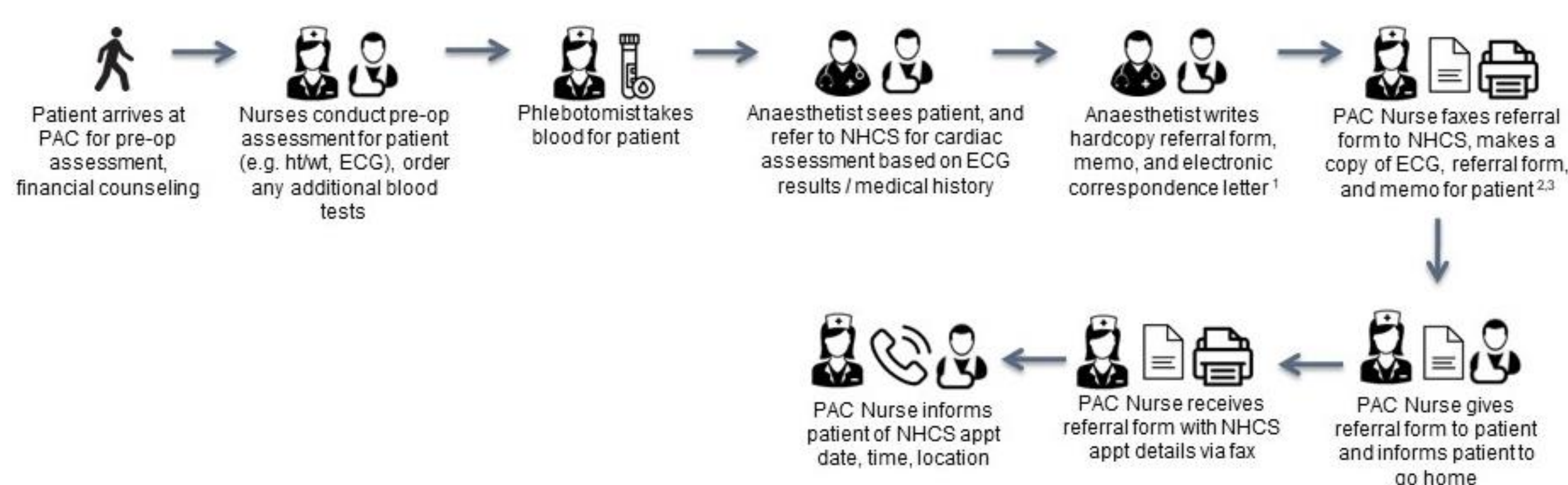
### Aim

- Reduce number of inappropriate referrals made to NHCS
- Reduce number of delayed surgeries for patients referred to NHCS
- Reduce number of patient visits to NHCS for pre-operative assessment

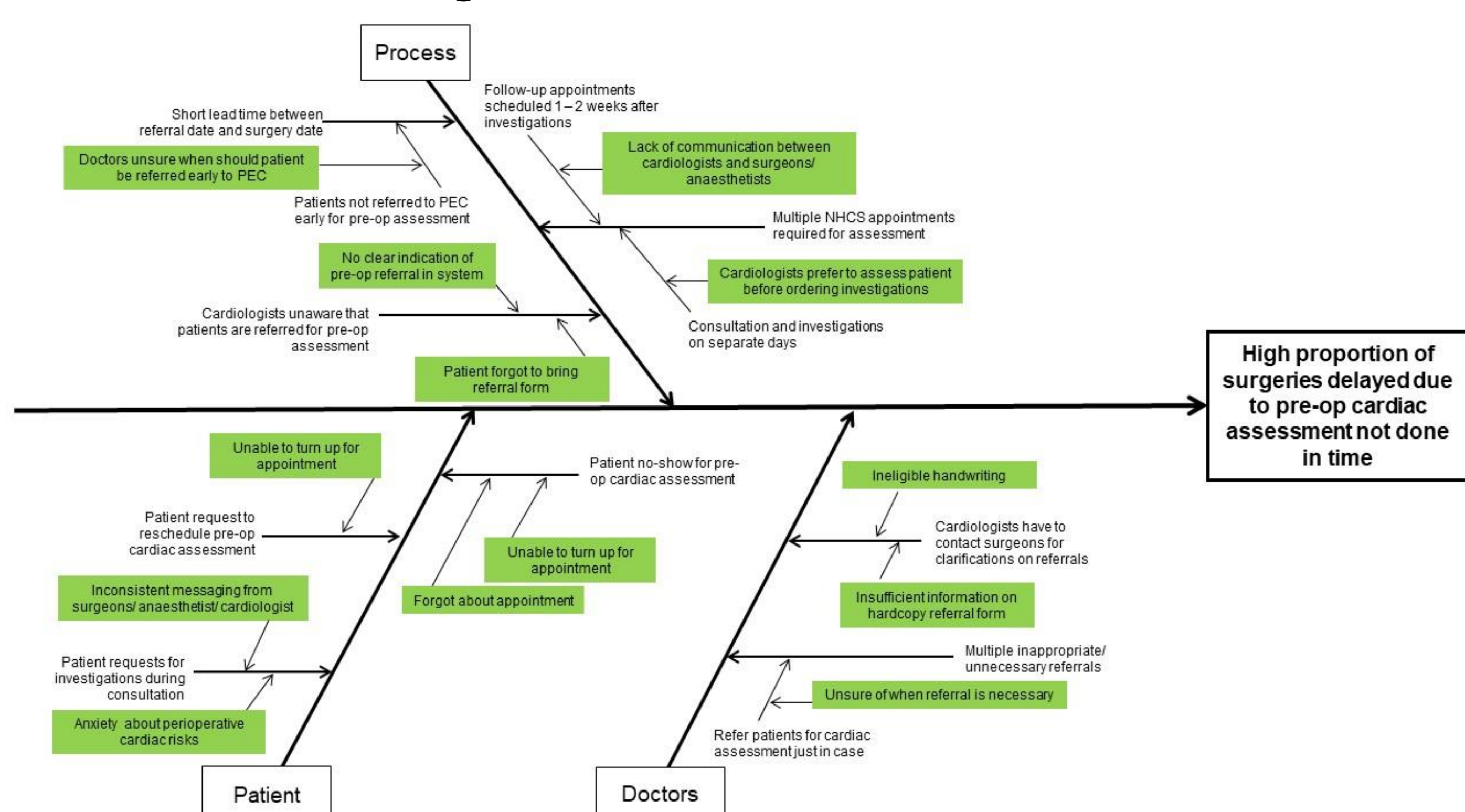
## Methodology

### Analysis of the problem

- Meeting was held between various stakeholders including anaesthesia perioperative medicine team, Cardiology team, PEC nursing and operation team
- Old workflow:



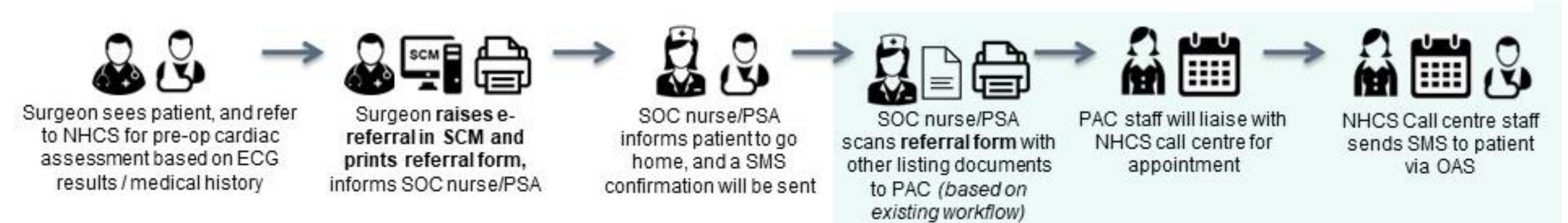
### Cause effect diagram



- Top 3 strategies identified through prioritization matrix
  - Develop a referral guideline with clear criteria for Preoperative cardiac referral
  - To have a more efficient operation system to make referral
  - To have better communications between cardiologists and anaesthetists

## Results

### Revised Workflow Process



### Revised Preoperative Cardiac Referral Guideline

- New guideline was developed by Department of Anaesthesia Perioperative team and Department of Cardiology
- Finalized guideline was presented in both departments during department meetings and CME sessions

### Pre-implementation Phase Results

- 30% of total procedures were postponed due to NHCS appt
- 32% of preoperative cardiac referrals made are unnecessary

### Post-implementation phase Results

- 17% of total procedures were postponed due to NHCS appt
- 20% of preoperative cardiac referrals made are unnecessary
- Reduction of total preoperative cardiac referrals made from 3.4% to 2.8% among all elective surgical patients (~122 preoperative cardiac referrals per year)
- No significant increase in the incidence of perioperative cardiac related mortality and morbidity following the new referral guideline and process
- Estimated **Annual total cost saving of S\$74,045** (including cardiology clinic consultation, investigation costs)
- Junior doctors found the new guideline easier to follow

## Conclusions

- High risk patients are referred to anaesthesia by surgeons earlier, allowing adequate time for preoperative optimization
- Anaesthetists are able to follow the new guideline easier
- Less surgical postponement increase patients and surgeons' satisfaction
- Cost saving for both patients and institutions
- Better optimization of precious healthcare resources

## Sustainability

- The new workflow is being promoted to Division of Surgery
- Ongoing seminars and talks in Division of Surgery on the new guidelines to increase surgeon's awareness
- We plan to conduct another feedback survey plus data collection in one year's time to further collect the feedback from cardiologists and anaesthetists

### Acknowledgement

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- We would also like to thank all the nureses and operation staff working in preoperative assessment clinic