



Revising SGH Preoperative Cardiac Assessment Guideline and Referral Workflow for Elective 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

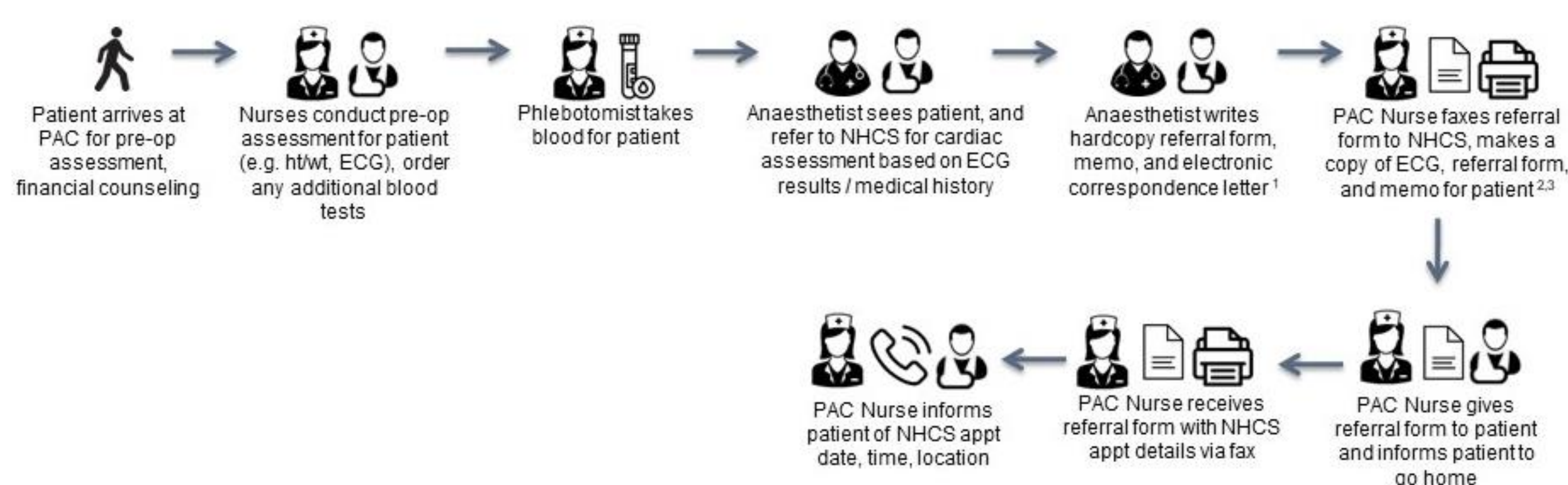
Aim

- 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

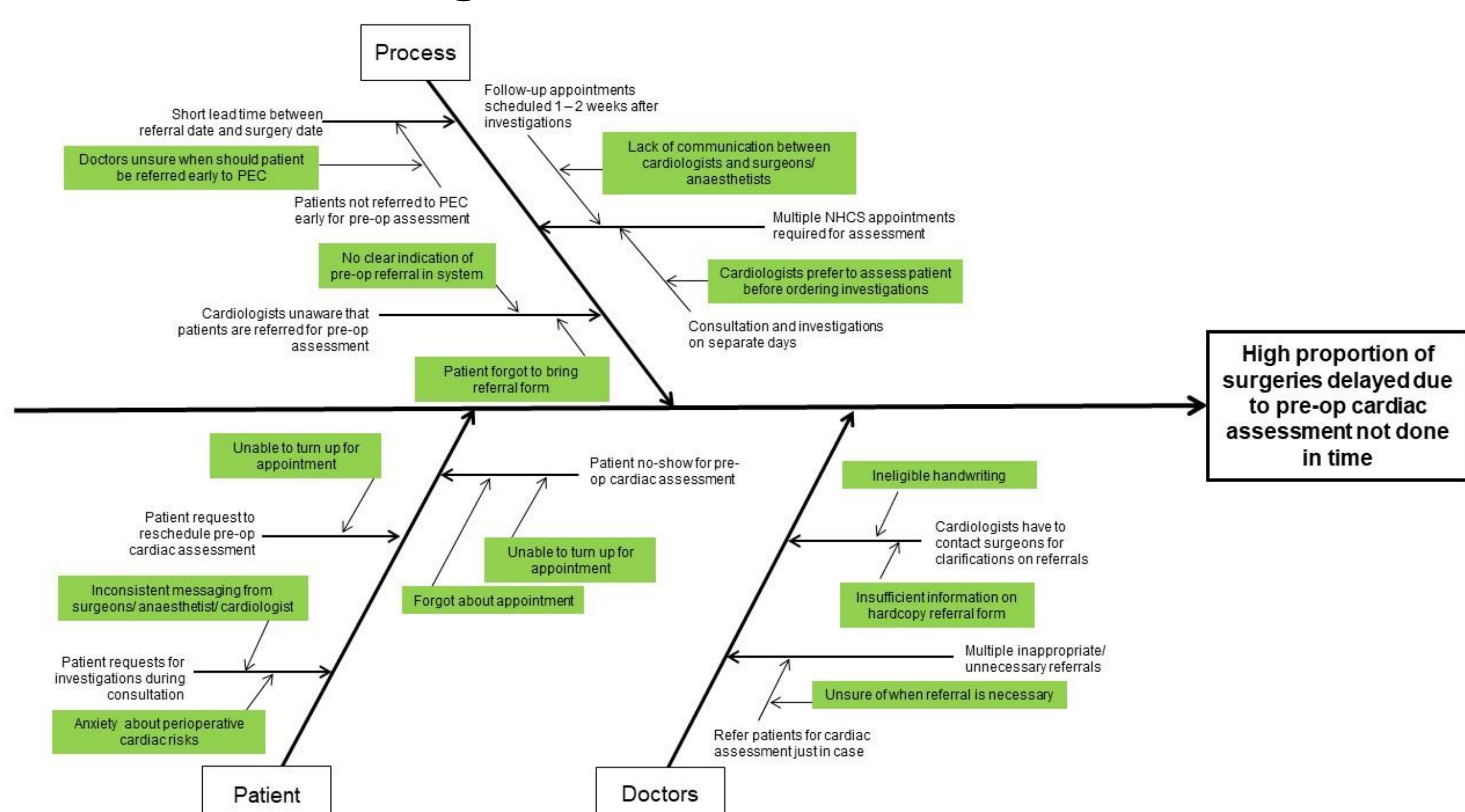
Methodology

Analysis of the problem

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



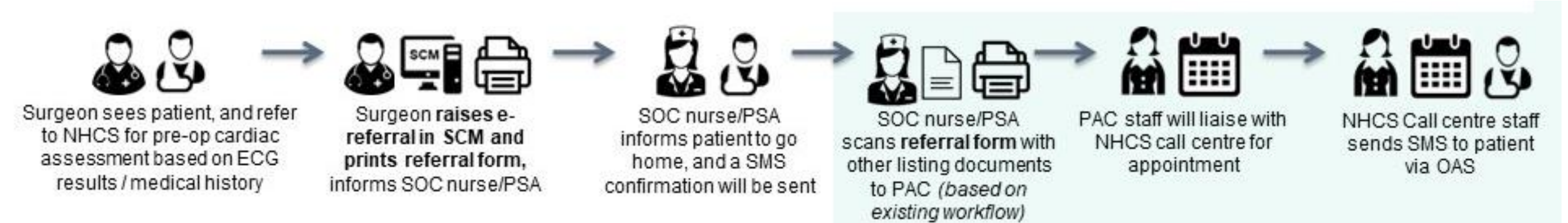
- Cause effect diagram



- 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