Project Title

ePASS – An Electronic Pre-Anaesthesia Self-Screening Questionnaire to Reduce Face-to-Face Consultations at the SGH Pre-Admission Centre

Project Lead and Members

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Organisation(s) Involved

Singapore General Hospital

Healthcare Family Group(s) Involved in this Project

Medical, Health Administration

Applicable Specialty or Discipline

Anaesthesiology

Project Period

Start date: Jun 2020

Completed date: Jun 2021

Aims

- To pre-identify low-risk patients who can omit seeing an anaesthetist and
- To manage low-risk patients in a less resource-intensive manner via telephone screening (TPS).

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

We learnt the importance of a structured quality improvement framework in implementing a new paradigm in patient care. While developing the questionnaire, we underwent several iterative rounds of feedback, evaluation and improvement to bolster the response rate and refine its clinical validity and accuracy. This ensures that the questionnaire is short enough to hold the patients' attention span and yet, accurate in identifying low-risk patients.

We also learnt that process improvement need not require expensive IT system enhancements. ePASS was built entirely on a free and secure survey platform, and the "task list" used to help PAC's nurses identify healthy patients was an Excel spreadsheet compiling demographic data with surgical information from SGH's data warehouse. These simple solutions were pieced together into a sustainable and free solution to mitigate the rising workload at the PAC, albeit requiring the seamless cooperation and coordination between administrators and nurses.

Conclusion

See poster appended/ below

Additional Information

This project is related to a 2021 project with the same title: "ePASS – An Electronic Pre-Anaesthesia Self-Screening Questionnaire to Reduce Face-to-Face Consultations"

Project Category

Care & Process Redesign, Value Based Care, Patient Satisfaction, Productivity, Cost Saving, Workflow Redesign

Keywords

Anaesthesia Risk Assessment, PAC, Pre-Admission Centre, Self-screening Questionaire, Anaesthesia Self Screening (ePASS),

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Introduction

Patients undergoing elective surgery in SGH receive preoperative anaesthesia risk assessment and counselling at the Pre-Admission Centre (PAC). PAC sees an average of 86 patients a day in 2019, and is projected to rise to 110 patients a day by 2026. The rise in PAC's patient load, in tandem with rising elective surgical load with no commensurate increase in doctor manpower, has led to long waiting time for anaesthesia consultation at PAC. The inefficiency in clearing the high patient load in PAC has also led to negative patient experiences and impaired staff work-life balance.

Among patients attending PAC, 10% are low medical-risk patients undergoing low-risk surgical procedures that could have their anaesthesia assessment and counselling performed by trained nurses over-the-phone before their PAC appointment.

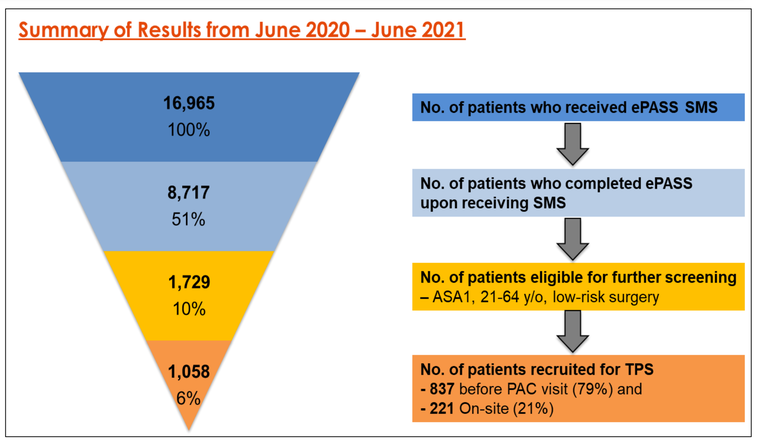
Thus, SGH embarked on a multi-disciplinary project comprising doctors, nurses and administrative staff to (1) pre- identify these low-risk patients who can omit seeing an anaesthetist and (2) manage low-risk patients in a less resource-intensive manner via telephone screening (TPS). Thus, allowing SGH to allocate valuable PAC appointment slots for higher-risk or urgent-need patients.

Results

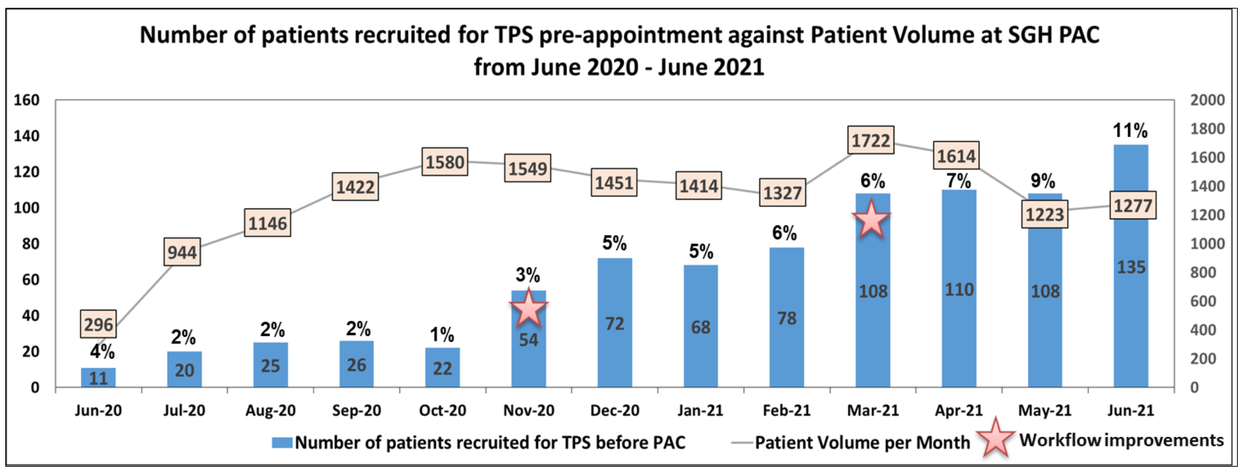
50%

SMS response rate

Out of 8,717 responses received from June 2020 – June 2021, 837 (9.6%) who completed ePASS were recruited for TPS before their PAC appointment



Monthly recruitment of TPS patients pre-appointment improved from 20 (2%) from July 2020 to 135 (11%) in June 2021



$35,549 **Annual savings in medical manpower costs due to a reduction of 529 physician consult hours per annum**

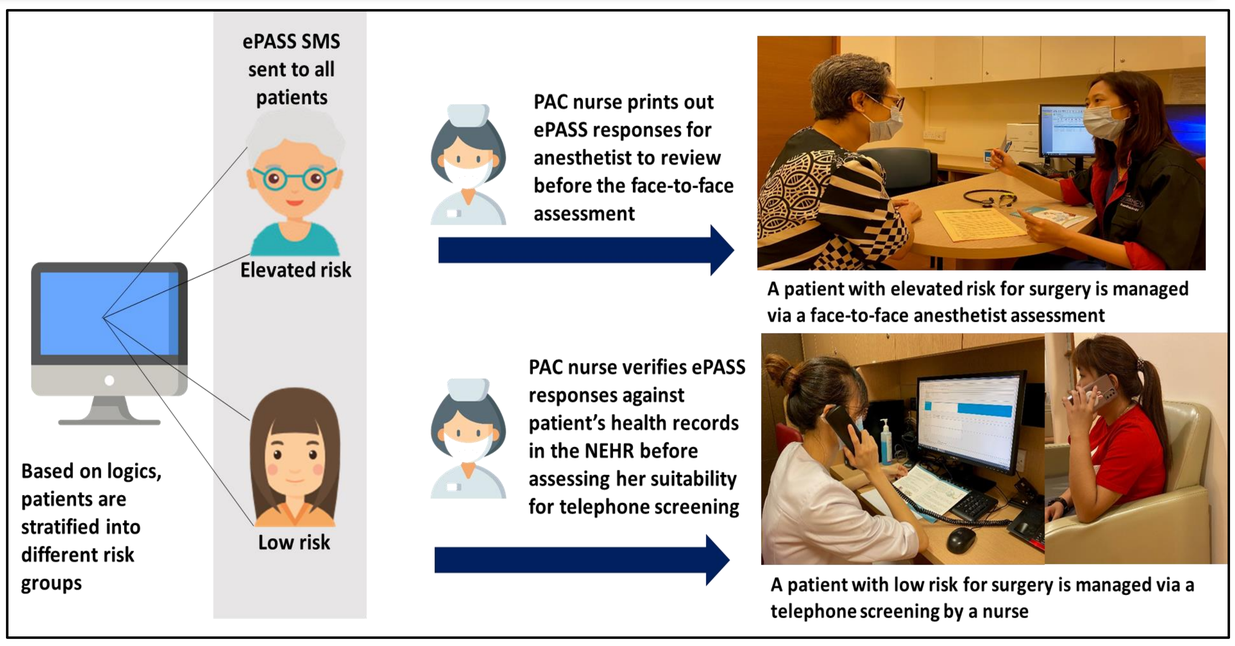
$81,189 **Combined PAC consultation fee savings per annum for TPS patients**

0 **Surgery cancellations due to inadequate risk assessments among TPS group**

Conclusion

Our project of developing a self-screening questionnaire that is easily completed by a layperson and yet, accurate in identifying low-risk patients has enabled PAC nurses to identify nearly all eligible patients and conduct telephone screening. This is a sustainable and safe innovation to mitigate rising workload at PAC. This ensures that we continue to provide cost-effective and patient-centric care in light of shortages of doctors across the public healthcare sector.

Methodology



1. Development of an Electronic Pre-Anaesthesia Self-Screening (ePASS) questionnaire to screen for health conditions affecting patients' anaesthesia risk

- Questions were compiled and adapted from published questionnaires in literature, and critically evaluated by a small focus group of non-medical people and anaesthetists to improve questionnaire clarity and reduce unnecessary medical jargon before its deployment.

2. Validation of ePASS self-reported health conditions against anaesthesia consult notes

- Questions which had poor accuracy (low inter-rater reliability between patient's responses and anaesthetists' notes) were refined further.

3. Sending SMSes with links to ePASS questionnaire, to patients before their PAC appointment

- The SMS notification workflow was tweaked to optimize messaging frequency and wording to elicit a high response rate of 50%.

4. Stratification of patients into different risk-groups based on their health demographics

- Low-risk patients were defined as those of 21 to 64 years of age, with ASA (American Society of Anaesthesiologists) Score of 1, and going for low-risk surgeries. Surgery risk was determined based on an array of considerations including site of surgery, expected duration of surgery and expected blood loss.

5. Training PAC nurses to conduct remote telephone screening (TPS) for low-risk patients

- Patients who had undiagnosed health conditions discovered during TPS that require further management may be asked to return for further investigations or assessment by a doctor. Their management are guided by the anaesthesiology consultant covering PAC, which ensures that patients' care isn't compromised.

6. Alternative pathways to manage low-risk and elevated-risk patient groups:

- Patients provisionally identified as low-risk: Reviewed in detail by PAC's nurses to determine their eligibility for telephone screening (TPS). They would verify patients' key responses and conduct anaesthesia-risk counselling.
- Elevated-risk patients: Their ePASS responses would be printed out during their PAC visit, with key responses reviewed by an anaesthetist so that they can conduct a quicker and targeted consultation.