Clinical **Excellence** Queensland

COOPERATE **2**

COllaborative **O**lder **P**ersons **E**lective Surgery Risk **A**ssessment for **T**reatment **E**fficacy.

Recommendations

July 2020

COOPERATE Phase 2

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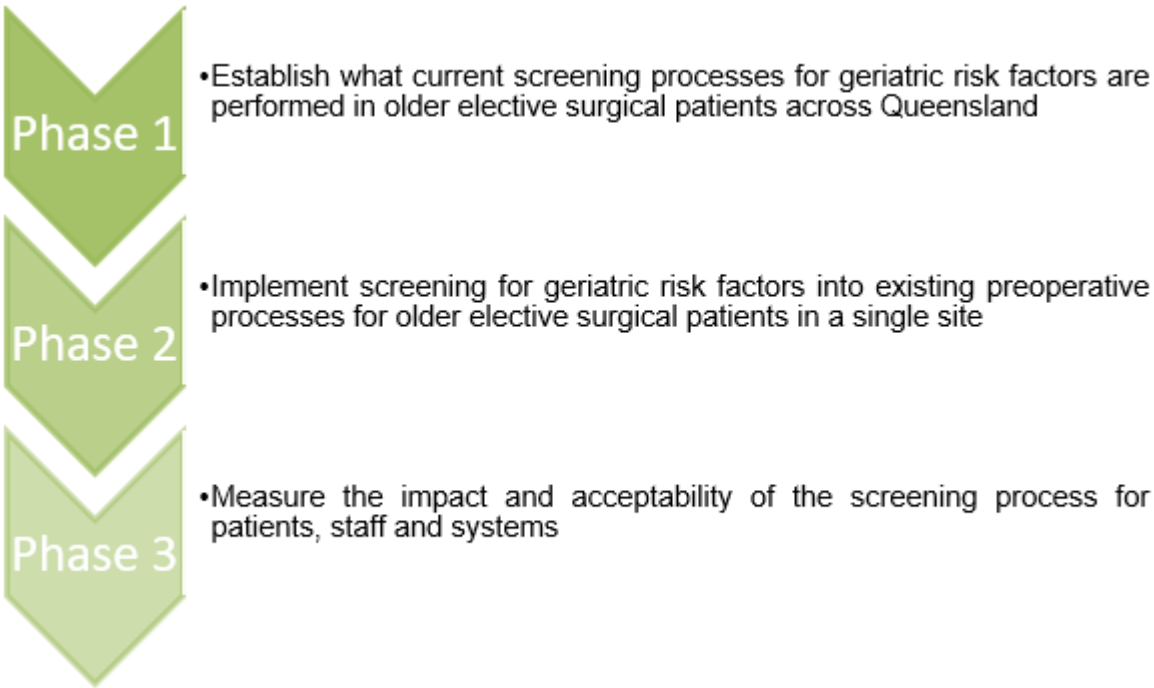
Executive Summary

Health systems in Australia and worldwide have been required to develop models of care which improve patient outcomes and satisfaction while reducing associated costs (1). These pressures are further compounded by an ageing population who require increased access to health care services (2). Redesigning models of care enables health services to systematically change and improve the way care is delivered (3). The COOPERATE 1 project proposed a framework for clinical redesign of preoperative assessment and management of older Queenslanders undergoing elective surgery. This was prompted by an evidence base showing older people were more likely to suffer postoperative complications including morbidity, mortality (4) and functional decline (5) and that co-morbidity alone did not adequately capture the health status of older people undergoing surgery (6).

COOPERATE 2, reports on the operationalisation of the framework that was proposed in COOPERATE 1. In this document, the processes, challenges, and outcomes of introducing screening and management of geriatric risk factors at Logan Hospital are discussed. An operational plan was formulated to guide and support the implementation of the COOPERATE framework. Together the operational plan and the COOPERATE 1 report, provided guidance to implement the redesigned model of care for older elective surgical patients.



Background

With ageing of the Australian population, the number of older people, particularly the oldest old (aged 85 years and older), accessing surgery is increasing (7). Surgery in older people can still offer significant benefits in terms of quality and quantity of life (8). However, older people are more likely to suffer complications from or die after surgery (4). Some of this increased risk is due to multi-morbidity which can be quantified using risk calculators such as the American College of Surgeons National Quality Improvement Program Risk Calculator (ACS NSQIP®) (9), and some due to geriatric syndromes (10). Geriatric syndromes are frequently under-recognised in the preoperative setting without screening (11), therefore integrating routine screening pre-operatively is recommended (12). There is evidence to support interventions which mitigate risk and improve outcomes for older people in whom geriatric risk factors are identified. Comprehensive geriatric assessment (CGA) is a multidisciplinary geriatrician-led method of assessing and managing the complex care needs of older people (13). When undertaken in the preoperative setting, it has been shown to reduce post-operative length of stay (LOS) and complications such as delirium (14).

The COOPERATE 1 project was a cross-network project funded by the Health Improvement Unit and sponsored by the Statewide Older Persons Health Clinical Network (SOPHCN) and Metro South Hospital and Health Service (MSHHS) which developed an evidence-based framework for preoperative identification, assessment, and management of geriatric risk factors for older elective surgical patients (15). The project was supported by the Statewide Anaesthesia and Perioperative Network (SWAPNet) and the Surgical Advisory Committee (SAC). COOPERATE 1 identified the need to test the feasibility and acceptability of the framework. An application was made to Clinical Excellence Queensland (CEQ) and funding was received in July 2019 to operationalise COOPERATE. The project was again sponsored by SOPHCN and MSHHS and supported by SWAPNet and SAC.

Considerations for Older Aboriginal and Torres Strait Islander People

Aboriginal and Torres Strait Islander People are the first people of Australia and have strong cultures and communities. Improving Indigenous health is a key focus in the Queensland health system and forms part of *Making Tracks towards closing the gap in health outcomes for Indigenous Queenslanders by 2033* along with the *Aboriginal and Torres Strait Islander Cultural Capability Framework 2010-2033*. This also aligns with the *National Indigenous Reform Agreement (Closing the Gap).*

To achieve health outcome improvements, we need to meet the needs of Aboriginal and Torres Strait Islander People. This extends beyond the provision of clinical services and requires an organisation that understands and respects cultural differences and applies these to quality improvements, planning and policy (16). Lowering the age criteria within this project is not intended to describe this population as 'prematurely old', but simply to increase the sensitivity of preventive interventions in a potentially vulnerable population group.

Indigenous identification is a key performance indicator for Aboriginal and Torres Strait Islander access units across the health service. With the implementation of ieMR, there has been much progress in collecting this information during patient registration and admissions. However, there is no formal identification for Indigenous status on the statewide surgical booking request forms. This made identifying Indigenous patients who were >55 years for the screening of geriatric risk factors difficult for this project. Investigating statewide change to surgical booking request forms to include Indigenous identification is an important process moving forward. A statewide change will allow health services to better plan and deliver culturally appropriate preoperative care.

COOPERATE 2 Overview

Project Officer Recruitment

The clinical nurse consultant (CNC) position was advertised in late July 2019 and interviews occurred in August 2019. A successful applicant was selected from the interview process. However, delays for commencement in the role occurred due to human resource challenges such as backfill and rostering issues. The CNC commenced in the role in mid-October 2019. The CNC is an experienced senior surgical/orthopaedic nurse who worked for several years in the NHS.

Advisory Group

The project advisory group was formulated with representatives from the original COOPERATE project. The advisory group is transdisciplinary with cross-network representation from SWAPNet, SAC, SOPHCN and included representation from regional Queensland. The project advisory group met monthly via teleconference from November 2019 until the project was put on hold in March 2020 due to the COVID-19 pandemic. Out of session meetings and correspondence with relevant advisory group members occurred to progress the project. The core project team (the project leads and the CNC) met weekly to review progress, assign tasks and ensure the project was progressing on time and on budget.

Methodology

The Knowledge to Action (K2A) framework is a conceptual framework that is recommended in the literature as a way of applying theory to enhance the implementation and knowledge translation of quality improvement projects (17). The K2A framework has phases, which align with COOPERATE 1 and 2. COOPERATE 1 gathered relevant information and adapted that information to the local context to enable implementation of the model of care. COOPERATE 2 identified barriers and enablers to the implementation, implemented the intervention and then evaluated the impact of the intervention.

Findings

Across three hospitals caring for older elective orthopaedic and colorectal surgery patients, COOPERATE 2 identified that screening was inconsistent between sites and surgical groups, and often did not use recommended or valid tools. Barriers that impacted upon both the accurate completion of screening and the absence of clear pathways for acting on abnormal results were identified. This potentially leads to common risk factors being unrecognised or not acted upon.

At Logan hospital these barriers were investigated in greater depth. It was clear there are a large number of stakeholders who need to be considered, and that there are many logistic considerations in terms of staffing, timing, space and processes which need to be addressed for screening to

successfully translate to integrated actions.

COOPERATE 2 integrated screening by an additional trained CN into preoperative clinics utilising the proposed COOPERATE 1 care pathway. Over a two-month period we screened 86% (24/28) eligible older patients, 4/28 (14%) were not screened due to CNC rostered day off cycle. Of the patients that were screened, 19/24 (79%) screened positive for at least one risk factor, most commonly polypharmacy (67%) or frailty (58%). Eight participants (33%) had 3 or more risk factors identified on screening and were referred to a geriatrician for comprehensive geriatric assessment (CGA), with 5 (21%) undergoing a CGA. Actions from CGA included diagnosis, including two new cases of cognitive impairment identified, advance care planning, medication optimisation, and discharge planning. One patient elected to pursue non-operative intervention. Screening was considered acceptable by all 15 patients interviewed post-discharge.

Recommendations

This project has shown that older Queenslanders undergoing elective surgery have geriatric risk factors which may influence their postoperative outcomes, and without screening would remain undetected. Implementing routine screening for and management of geriatric risk factors was feasible in the preoperative setting at Logan Hospital, but required dedicated nursing, pharmacy and medical resources, and engagement of a range of stakeholders to integrate into existing processes. The process of screening for and management of these risk factors is accepted by patients and their families. Larger scale evaluation of the feasibility in different settings, resource requirements, and clinical outcomes of preoperative screening is required to inform adoption of these processes into routine care.

Phase One

1.1 Aims

1. Establish what current screening processes for geriatric risk factors are performed in older elective surgical patients across Queensland
    a. Perform an audit of geriatric risk factor screening and actions taken from positive screening in the 3 hospitals across Queensland
    b. Identify gaps and potential areas of opportunity for screening and intervention in the perioperative pathway

1.2 Process

The key objective in phase one was to establish what screening processes and actions already exist within facilities across Queensland to identify and manage geriatric risk factors preoperatively. Three hospitals were identified as described in the project proposal: a metropolitan hospital (Logan Hospital), a regional hospital (Toowoomba Hospital) and a tertiary hospital (Townsville University Hospital). Hospitals outside the south eastern corner of Queensland were purposefully selected to ensure a broad geographical representation of perioperative services which included rural and remote Queensland.

Key stakeholders were identified in each participating hospital and the lines of communication were established. Using the stakeholder-nominated contact person, each site was requested to provide details on the existing screening processes to identify geriatric risk factors in the preoperative setting, as described in the COOPERATE 1 recommendations. The geriatric risk factors included: cognitive impairment, frailty, functional impairment, polypharmacy and malnutrition (15). If such processes were in place, the sites were requested to describe the output and/or action from the risk screening. Once complete, the sites were required to complete an audit of 10 colorectal surgery charts and 10 elective lower limb arthroplasty charts to review user (healthcare professionals) compliance with the screening processes and actions results from the identified issues in the screening. This audit was conducted via an online survey utilising the Microsoft Forms® survey creator see Appendix 1 – audit questions

In addition to the local practices identified at each site, a short review of the Queensland Health Intranet (QHEPS) was conducted to identify the content of other state-wide tools that are utilised in the preoperative period. Other tools that are utilised across other sites include the Patient Wellness Clinical Pathway, Smoking Cessation Pathway and the Pre-Anaesthetic Evaluation Framework developed by SWAPNet. The goal of this project was to add and compliment the current preoperative assessment processes rather than replace them.

Process mapping was undertaken for elective lower limb joint arthroplasty and colorectal surgery at Logan Hospital and lower limb joint arthroplasty for Toowoomba Hospital (see Appendix 2 and 3 process maps). This enabled the project team to identify opportunities for optimal timing of screening which are likely to be common to other hospitals undertaking elective surgery in Queensland.

1.3 Findings

Initial project networking with Toowoomba and Townsville University Hospital commenced in October 2019. The project team based at Logan Hospital commenced a “chart” ieMR audit. The audit was completed by selecting the first 10 lower limb joint arthroplasty and 10 colorectal patient charts on the surgical waitlists for colorectal and orthopaedics between January 2019-October 2019 and that met the project selection criteria. There were several delays over a couple of months to identify the relevant contact person at Townsville University Hospital. The delays were directly related to workload and workforce challenges, Christmas slow-down and COVID-19.

Of the three hospitals, there were no clear embedded processes to screen for and manage each of the geriatric risk factors of cognitive impairment, frailty, functional impairment, polypharmacy and malnutrition. One hospital even identified variance in the preoperative assessment and management between surgical specialties. Each service identified this as a gap in the provision of care with all 3 sites very receptive to gaining a better understanding of how this could improve preoperative older elective surgical geriatric risk screening and management. Logan, Toowoomba and Townsville University Hospitals are planning to address these gaps in their future preoperative models of care.

Logan Hospital

Logan Hospital (LGH) utilises the Adult Integrated Pre-Procedure Screening Tool (referred to colloquially as the PHQ) for all patients that are booked to undergo an elective surgical procedure. This is completed by the patient at the outpatient clinic appointment, at the same time as the procedure consent form and when the Medical Officer is completing the procedure booking request form. Attaching the PHQ to the consent and procedure booking request form at Logan Hospital is a mandated process. Without the consent, PHQ and procedure booking request form a surgical procedural booking/ or add to the surgical waitlist will not be made (***N.B.: a surgical procedural booking/ add to the surgical waitlist appointment is made regardless of the accuracy and percentage of completion to the PHQ).***

In the instance that the completed PHQ highlights issues/risks or concerns there are fields for nursing staff to complete and action adjacent to the relevant screening questions. However, there remains no clear processes or actions for staff to ensure completion of these fields. At present nursing staff escalate concerns directly to the anaesthetist in the pre-anaesthetic clinic. This is further complicated by the length of time between patient completion of the PHQ and the patient attending pre-anaesthetic clinics. The allied health-led clinic currently has no clear processes to inform or escalate to the surgeon if concerns or risks are identified, nor is there a pathway to optimise patient function preoperatively.

Toowoomba Hospital

Toowoomba Hospital has a highly developed preoperative assessment process for patients that are scheduled/waitlisted to undergo elective lower limb arthroplasty surgery. This assessment process is underpinned by the enhanced recovery after surgery (ERAS) principles and the geographical population service size. Toowoomba Hospital provides orthopaedic surgical services to over 90,000km^2.

Patients that are booked to undergo elective orthopaedic surgery are reviewed in the Major Orthopaedic Procedure Sessions (MOPS) clinic. This is a multi-disciplinary specialist clinic that the patient physically attends 6-8 weeks prior to the planned surgery. At this clinic, patients are assessed by a multi-disciplinary team including; Physiotherapy, Hospital to (H2H) Nurse, OT, Acute Pain Service (APS) and a Medical Officer. The MOPS clinic also considers factors that can impact discharge. The clinic aims to ensure that the patient has been adequately prepared prior to their operation with transport arrangements and identification of potential increased needs on discharge. In the instance that issues are identified as part of the preoperative workup, patients can be referred to the orthogeriatric nurse or geriatrician. Referrals to the orthogeriatric nurse or a geriatrician usually result in delays to the planned orthopaedic procedure.

Townsville University Hospital

In Townsville University Hospital, the Adult Pre Procedure Assessment Record is completed in the OPD appointment at the time of booking and surgical consent. The Adult Pre Procedure Assessment Record is an 8-page self-reported questionnaire. Townsville University Hospital was the only site to assess frailty preoperatively, although they anecdotally report that this is often not completed. Cognitive testing is not part of their preoperative assessment. The assessing clinician is prompted to refer a patient who has 2 or more of the following: Age >75, >1 fall in the last 6 months, a Clinical Frailty Scale score >4, has a known cognitive impairment, or is taking 5 or more prescribed medications to the gerontology team for further review.

At present there are no routine processes for geriatrician input into the perioperative care of older elective surgical patients. Townsville currently have plans to review the opportunities for preoperative pathways and review when is the most appropriate timeframe from surgery to complete the assessments. Townsville are also investigating introducing face to face triaging to improve collection of point of care data and improve processing of the triage form to manage patients at risk.

Townsville University Hospital were unable to complete the audit due to access to the appropriate contact person and data accessing permissions. Remote ieMR audits were considered, however, given restrictions with health service data sharing and access, consent to complete this was not achieved within the project time frame.

Comparative Pre-Admission Assessment Audit 2019						
Tools and Assessments	**Logan**		**Toowoomba**		**Townsville**	
		Completion Rate		**Completion Rate**		**Completion Rate**
Type of Pre-Admission Assessment Tool	Adult Integrated Pre-Procedure Screening Tool (referred to colloquially as the PHQ) – 4 pages	100%	Anaesthetic patient Questionnaire – 2 pages	83%	Adult Pre Procedure Assessment Record – 8 pages	No data available
Who completes the Pre-Admission Assessment Tool	Patient self-completed	N/A	Patient self-completed	N/A	Patient self-completed	N/A
Specialist Pre-admission Assessment	Orthopaedics only	100%	Orthopaedics only (MOPS clinic) Colorectal only (ERAS clinic)	100%	No	No data available
Cognitive Assessment Questions	Yes (no validated tool used)	25%	No (no validated tool used)	N/A	Yes	No data available
Malnutrition Assessment Questions	Yes (no validated tool used)	75%	Yes (MST tool used)	3.3%	Yes (MST tool used)	No data available
Functional Assessment Questions	Yes (no validated tool used)	75%	Yes (MOPS clinic only, no validated tool used)	100%	Yes	No data available
Frailty Questions	No (no validated tool used)	N/A	No (no validated tool used)	N/A	Yes (Clinical Frailty Scale tool used)	No data available
Medication Assessment Questions	Yes	95%	Yes	100%	Yes	No data

Advance Care Planning Questions	Yes	100%	No	N/A	No	N/A
Patients with Advanced Care Plans in place	Yes	10%	No	N/A	No data Available	No data available
Specialty Allied Health Clinics	Orthopaedics only	Unknown	Orthopaedics and Colorectal only	Unknown	No data available	No data available
Existing Perioperative Physicians Services	Yes	N/A	No	N/A	No	N/A
Existing Processes to escalate risks or concerns	No (informal process in place)	N/A	No (informal process in place)	N/A	Yes (not routine)	N/A
Pharmacy Services in preoperative services	Yes	50%	No (Medications reviewed by Medical Officer)	N/A	Unknown	N/A
For further audit information see Appendix 4 and 5						

1.4 Summary

While our sample size of 3 hospitals is small, it provides a snapshot of what is likely to be representative of what is happening more broadly in Queensland. In all the sites, incomplete pre procedure assessments were identified frequently, with workload challenges and resourcing considered key contributing factors. These sites have acknowledged the need to consider incorporation of screening for geriatric risk factors in preoperative processes. However, workload management, resource allocation, and access to appropriately skilled staff makes this difficult to implement pragmatically. In hospitals without routine access to gerontology specialists, if geriatric risk screening was implemented, it is foreseeable that there would be issues and challenges in further assessment and intervention in response to the risks identified.

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Phase 2

2.1 Aims

1. Implement screening for geriatric risk factors into existing preoperative processes for older elective surgical patients in a single site
    a. To implement screening for geriatric risk factors as identified in the COOPERATE project in the preoperative setting for patients 70 years and older undergoing elective colorectal and lower limb arthroplasty surgery
    b. Develop an operational report for LGH to implement the intervention

2.2 Methodology

Knowledge to Action (K2A) framework provides a framework for knowledge translation in the health care setting (17). The framework has two main steps. The first is knowledge creation, which was developed as part of COOPERATE 1 and Phase 1 of this project. The second is the action cycle, which is the application of the knowledge created into the health care setting, which became phases 2 and 3 of the project.

1. Identification of the problem and potential solutions

From the knowledge creation step COOPERATE 1 and the information obtained in phase 1 of this project, the core issue was identified as the lack of routine standardised processes to screen for and manage geriatric risk factors in the preoperative setting. The solution was to pilot the framework put forward in COOPERATE 1 (see Figure 2.1).

This approach to screening and risk management aligns with international recommendations regarding perioperative care of older people undergoing surgery (12) (18) (19).

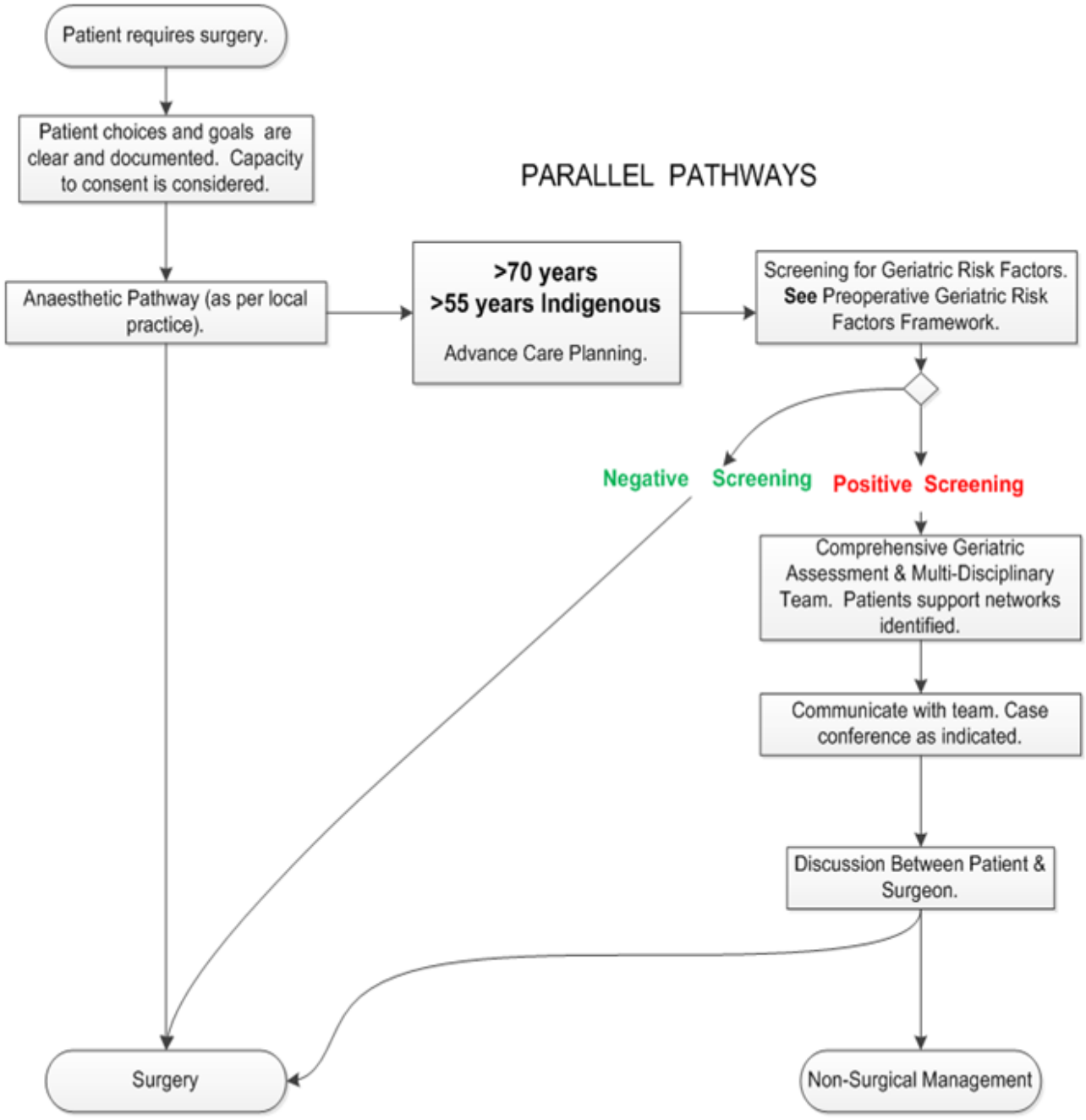


Figure 2.1 Flowchart of the surgical pathway for identifying, screening and managing geriatric risk factors developed in COOPERATE 1

2. Adapting to the local context

The process mapping completed in phase 1 guided the potential opportunities where screening could occur. It was determined that screening would take place in pre-anaesthetic clinic, which minimised disruption for patients and staff. Relevant stakeholders and levels of engagement needed were identified by completing a stakeholder engagement matrix (see Figure 2.2).

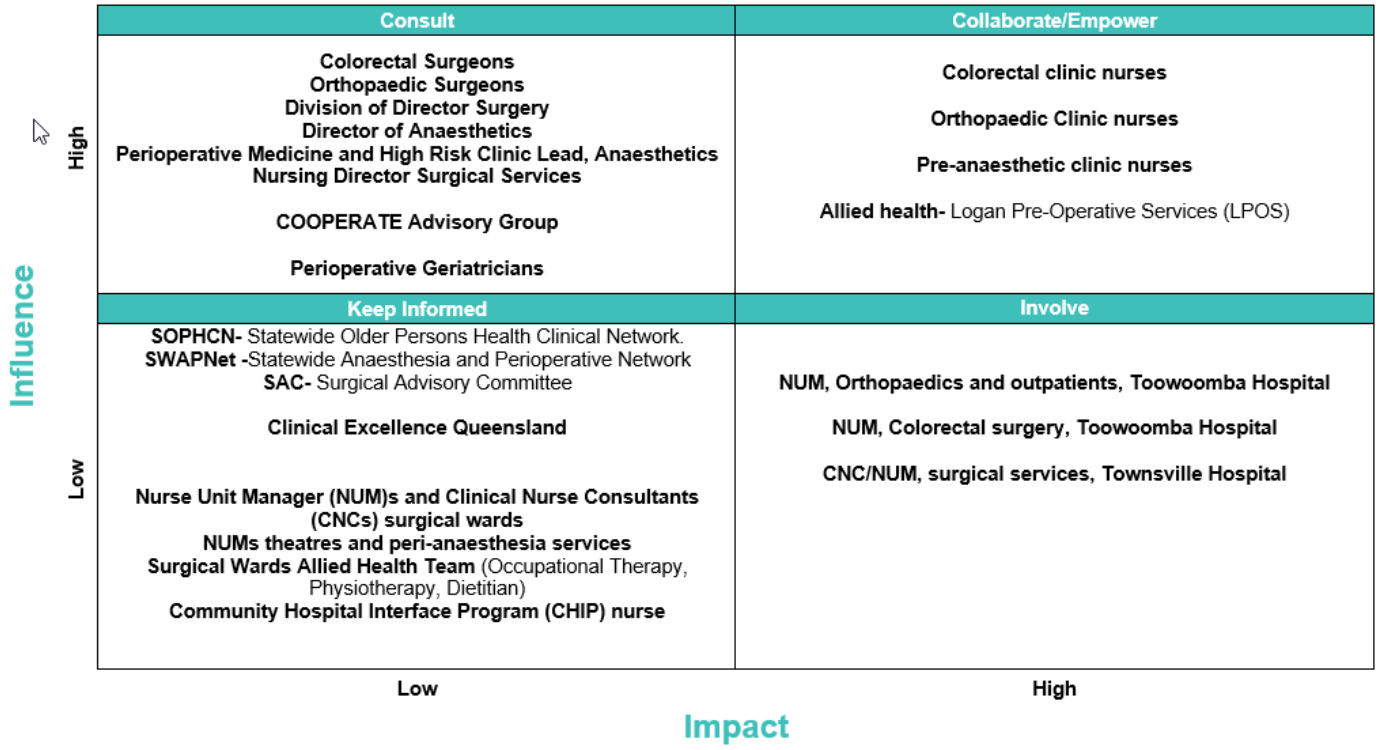


Figure 2.2 Stakeholder engagement matrix for Logan Hospital

3. Identification of barriers and enablers

A fish bone diagram (figure 2.3) was used early to identify barriers and enablers from 4 view-points: people, information, process, and system. This enabled us to pre-empt and proactively manage issues.

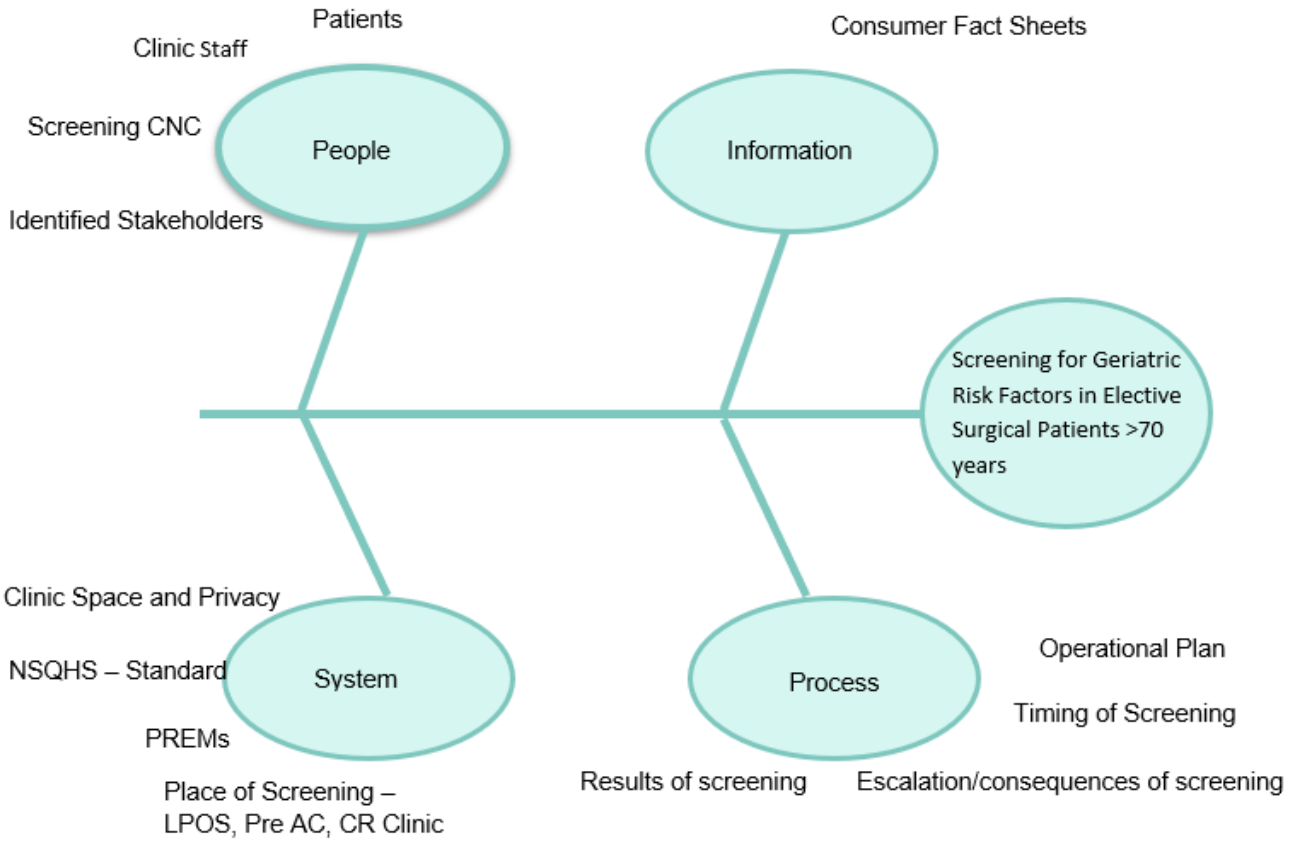


Figure 2.3. fishbone diagram of enablers and barriers to implementing screening for geriatric risk factors at Logan Hospital. LPOS: Logan Preoperative Service, PreAC: preadmission clinic, CR clinic: colorectal clinic, NSQHS: National Safety and Quality Health Service

People

The primary enablers were staff, especially in the pre-anaesthetic clinic, who recognised the need to identify geriatric risk factors preoperatively. Senior medical staff and the surgical and nursing divisional directors also supported the project.

Information

An unforeseen barrier was the lack of hospital and health service approved delirium prevention educational material. One of the key outcome measures for future versions of this work should include the prevention of delirium in at-risk patients. We used the Australian Commission on Safety and Quality in Health Care Delirium Clinical Care Standard – consumer fact sheet. This fact sheet referenced the role of early screening and provided a way to engage patients and their families in their role in delirium prevention in the post-operative period. The consumer fact sheet gives clear concise steps and easy to understand language. Delirium prevention information was given to all patients who had any positive screening results, whether or not they had CGA.

Process

An operational plan for implementing the project at Logan Hospital was developed (see

accompanying operational plan).

System

In order to minimise trips to hospital and delays for patients, the geriatrician project lead needed to be flexible and available at short notice to perform a CGA. This required negotiation with relevant stakeholders.

The National Safety and Quality Health Service (NSQHS) Standard 2 partnering-with-consumers lead, was engaged to provide guidance for how to best empower consumers and to design the patient reported experience measures questions (PREMS). As there was no standardized brief patient satisfaction tool available, the project team developed 4 short questions in conjunction with the Standard 2 lead. The hospital liaison office was engaged to ensure they were aware of the project and to provide a pathway for patients involved in the project to lodge compliments or complaints with clear contact details for the clinical leads of the project.

Metro South HHS Communications media team was utilized to promote the project. One of the patients who participated in the screening and underwent surgery consented to be photographed with the project team. See Appendix 6 – Media Promotion article in the *Pulse*

4. Implement interventions

The screening commenced on 13th January 2020. Patients eligible for screening were identified by the project CNC using the Enterprise Scheduling Manager (ESM) outpatient booking system and consented when they attended their pre-admission clinic appointment. The screening tools utilised were the recommended tools identified in COOPERATE 1 (Figure 2.4). Patients with no risk factors identified on screening, returned to the usual care perioperative pathway. For patients in whom screening was positive, the CNC discussed the case with the geriatrician clinical lead and relevant allied health and nursing professionals. If clinically required a CGA was performed at that time (Figure 2.1). Consent was sought from all patients for a follow-up phone call which was performed by the nursing project lead.

		Cognitive Impairment	Functional Impairment	Malnutrition	Frailty	Polypharmacy
SCREENING PHASE	**Where to screen?**	Outpatients setting	Outpatients setting	Outpatients setting	Outpatients setting	Outpatients setting Pre-Admission clinic
	Who can perform screen?	Nurse or medical officer	Patient, relative, medical officer, nurse, Indigenous liaison officers	Patient, relative, medical officer, nurse, dietetics, administration officers, Indigenous liaison officers	Nurse or medical officer	Patient, relative, medical officer, nurse, administration officers, Indigenous liaison officers, medical officer, pharmacist
	Recommended Tool	Mini-Cog and informant questionnaire if indicated or GPCOG	5 Point Abbreviated Functional Status	Malnutrition Screening Tool - MST	Clinical Frailty Scale -CFS	Number of medications (>5 medications) * including non- prescription medications, over counter

Figure 2.4: Geriatric Risk Framework (Screening phase)

2.3 COVID-19

On March 11, 2020, the World Health Organisation declared COVID-19 a global pandemic (20). Just over 2 weeks later, elective surgery was cancelled in Australia on March 26, 2020 (21). Logan Hospital had already moved to reduce elective surgery 3 days earlier. The project proposal anticipated 40-50 patients would be screened during the project. In response to the reduction of elective surgery the project was postponed, and the health service changed its focus to preparedness and pandemic planning for COVID-19. The project restarted 29th April 2020 which aligned with the incremental increase of elective surgery. The incremental increase was slow and took time to return to usual levels, coupled with social distancing requirements this greatly impacted the project's capacity to screen elective surgical patients. For comparative patient numbers during the same time period in the previous year January 2019 – 30 June 2019, 45 people aged 70 years and over underwent elective colorectal and lower limb arthroplasty cases.

2.4 Summary

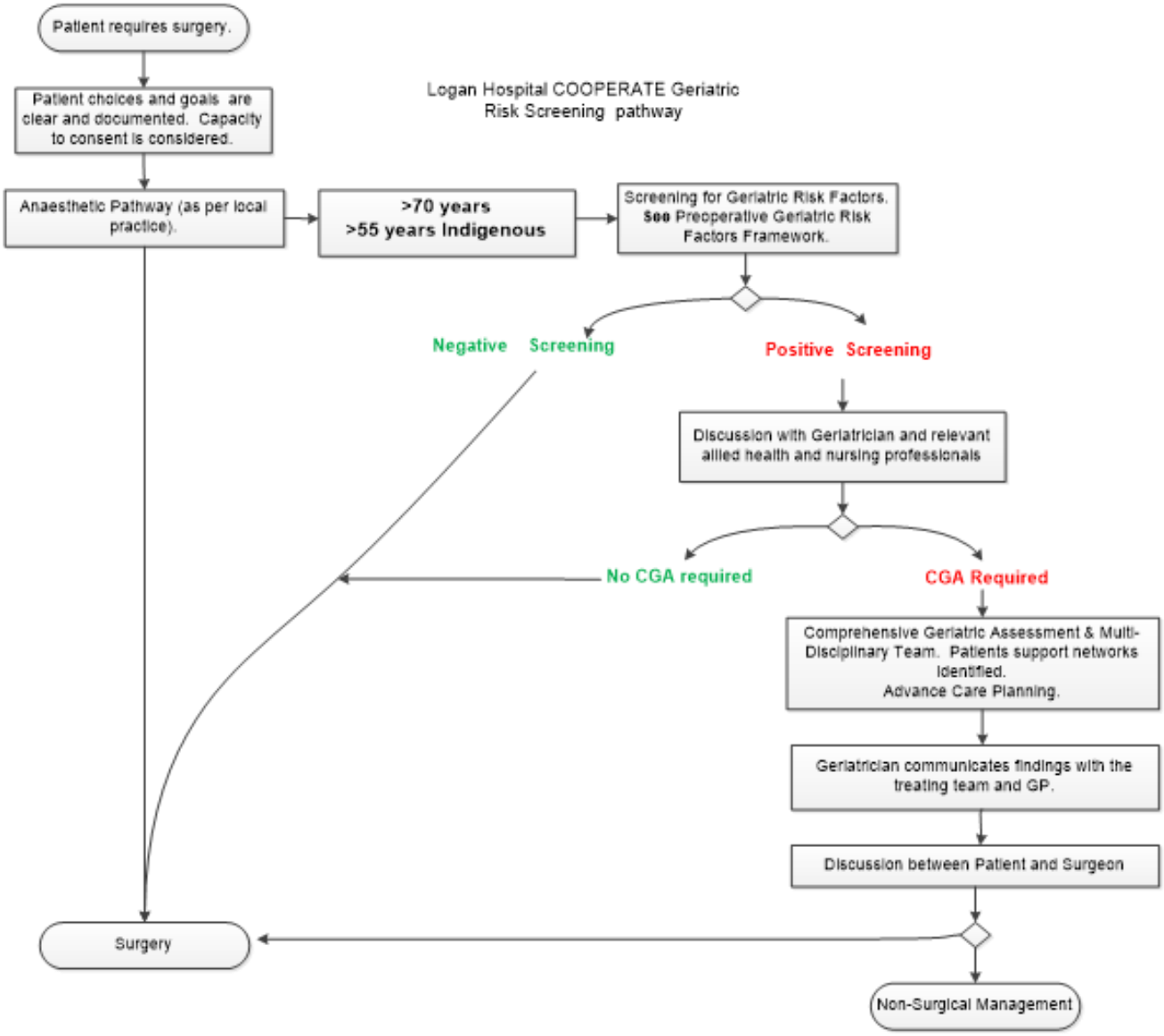


Figure 2.5 Local Modified Parallel Pathway

Phase 3

3.1 Aims

1. To Measure the impact and acceptability of the screening process for patients, staff and systems.

3.2 Findings

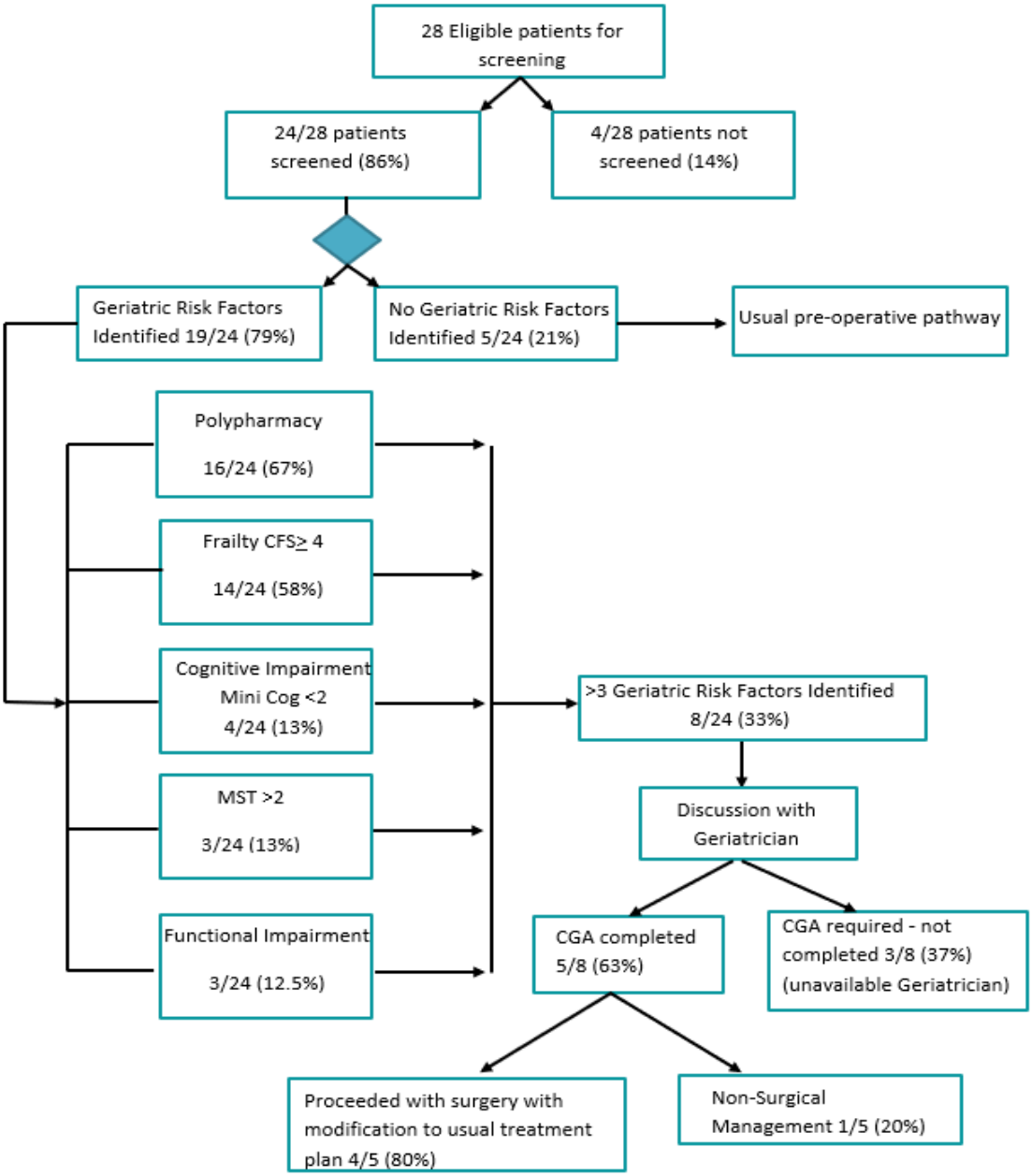


Figure 3.1 Flow chart of implementation of COOPERATE 2 at Logan Hospital

Geriatric Risk Factors

24 out of 28 (86%) eligible patients were screened between 13/1/20 and 23/3/20. All patients were screened in the pre-anaesthetic clinic.

The mean age was 75.88 years (standard deviation (SD) 6.25 years) and median age 74 years (interquartile range (IQR) 9.25 years), with the youngest patient screened aged 65 years and the oldest 89 years.

The patients were evenly split between elective lower limb arthroplasty (12 patients, 50%) and elective colorectal surgery (12 patients, 50%).

Cognition

Most patients screened had a normal Mini-Cog screening test of ≥3 (20/24 patients, 83%) with a mean score 3.95 (SD 1.46) and a median score 5 (IQR 2). 4 patients had an abnormal Mini-Cog score ≤2.

Patients with an abnormal Mini-Cog were also more likely to be older (mean age 81.50, SD 5.51) than those who screened negative (74.75 years, SD 5.87).

Frailty

The mean CFS score was 3.88 (SD 1.19) and median 4 (IQR 2) with the lowest score of 2 and the highest 6. Using CFS <4 as not frail, 4 as vulnerable and ≥5 as frail; 10 patients (42%) were not frail, 6 (25%) were vulnerable and 8 patients (33%) of patients were categorised as frail.

Patients who were categorised as vulnerable or frail on screening were more likely to be older than those screened negative for frailty (78.33 years (vulnerable), 78.12 years (frail) Vs 72.60 years (not frail)).

Polypharmacy

The mean and median number of medications taken was 7 (SD 3.21, IQR 5.25). The maximum number of medications taken by any patient was 12.

Two-thirds of patients screened had polypharmacy, as defined by taking 5 or more prescribed medications in 24hrs. Where this was the only risk factor identified, patients underwent medication review with a clinical pharmacist.

Malnutrition

MST screening uses a score of 2 or more as a positive screening test for malnutrition. 21 out of 24 (87.5%) patients had a negative screening for malnutrition using MST.

Functional status

Almost all patient screened had normal functional status (21/24 people, 87.5%), scoring zero using the 5-point abbreviated functional status tool.

Patients with multiple risk factors

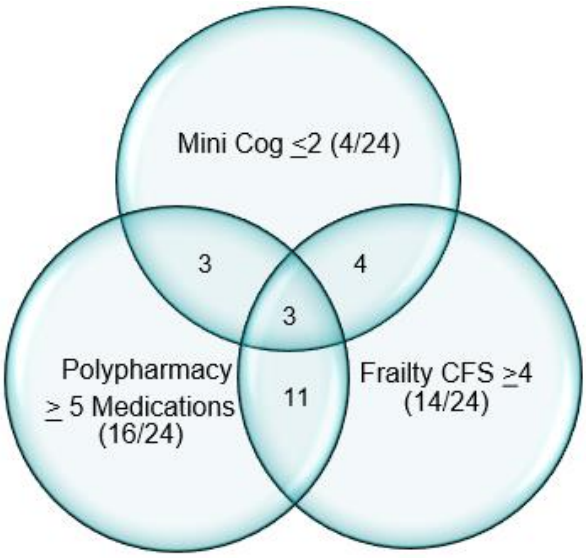


Figure 3.2 Venn diagram of the prevalence of geriatric risk factors in patients screened during COOPERATE 2.

All patients with an abnormal Mini-Cog test ≤2 screened as vulnerable or frail (CFS ≥4). They were also more likely to take more medications (8.25 medications Vs 6.55 medications). All patients with functional impairment and malnutrition also screened positive for frailty. Similarly, frail patients were more likely to have polypharmacy than non-frail (8.07 medications Vs 5.10 medications). Eight patients (33%) had 3 or more risk factors identified on screening.

Comprehensive Geriatric Assessment (CGA)

The initial plan intended that all patients who screened positive with any geriatric risk factor would be discussed with a geriatrician. However, only 5 of the 24 patients screened had no risk factor identified.

Five patients (21%) underwent CGA. All patients with Mini-Cog ≤2 underwent CGA. Of those, 2 patients were diagnosed with cognitive impairment: one with mild cognitive impairment and the other with Alzheimer's disease. Neither of these patients were known to have cognitive impairment prior to screening and CGA.

Advance care planning (ACP) was undertaken with all patients who underwent CGA. In the process of ACP, one patient elected not to undergo surgery. They were referred to palliative care medicine for ongoing follow up. One patient required arranging community medication management strategies with a local pharmacy to ensure preoperative medication instructions (ceasing anticoagulation 3 days prior to surgery) could be enacted. Another patient required communication and planning with their treating subspecialist to ensure the correct management of their underlying health condition in the perioperative period. Patients and their families were given education for delirium prevention strategies and received written information on delirium prevention. A discharge plan was discussed with all patients preoperatively and where required, communicated to community care providers and inpatient allied health and nursing teams. A contemporaneous letter detailing CGA was sent to both the treating surgeon and the patient's usual general practitioner (GP), and where possible the GP was spoken with directly.

Patient Perception

Follow-up phone calls were made with 15 of the 24 patients screened. Two attempts were made to contact each person before they were considered lost to follow-up.

Overall patients were happy with the screening process, although several admitted that it was “a big day” for them.

Most people knew the purpose of the screening questions, although they recalled the cognitive screening questions more readily than the other questions "They were screening me for Alzheimer’s" and "They were screening me for old folks’ disease". Although a person reported being “confused as why I needed to be asked these questions”.

When asked how they felt about the screening, again most did not report discomfort. Some of the patients had undertaken similar screening tests before e.g. with their GP “I get a yearly assessment, although it’s not overly comfortable to be asked questions like this", “The team really put me at ease, and I understand why they need to check these things.”

When asked about how we could make the process more comfortable, only 1 patient had a suggestion “a glass of champagne”!

Most patients were accompanied by a support person in the clinic which they found helpful. One patient who attended unaccompanied, commented that she found it less stressful on her own “…daughter can be a bit emotional and this makes me worry"

One patient even reported that "my neighbour went privately and they didn’t ask her questions about her memory, she didn’t know you can have problems after surgery with memory".

3.3 Summary

In the cohort screened, geriatric risk factors were prevalent. A third of patients screened fit the pre-specified criteria for CGA. Of those who underwent CGA, most had a change to their perioperative care plan instigated. Therefore, adoption of processes to undertake routine preoperative screening for geriatric risk factors will also require contemporaneous inclusion of processes to manage the risk which meets patient and organisational needs. Overall, patients reported to understand the need for screening and the screening tools used were reported as acceptable.

Discussion

Preoperative care of older elective surgical patients requires clinical redesign of service delivery, not a new service delivery. Often the work is already being performed, but it is poorly co-ordinated, which results in patients 'falling through the cracks.' This often results in the health services scrambling to organise discharge plans for patients whose function and cognition has changed post-operatively. Even simple surgery in complex patients can result in complex discharge plans.

With the ageing population, older people will continue to need access to surgical services. This project has demonstrated that patients may have additional risk factors such as frailty, polypharmacy and cognitive impairment that are not detected without screening. We have shown screening is feasible and accepted by patients when incorporated into preoperative processes. However, we acknowledge that Logan Hospital is unusual in that there is a perioperative geriatric medicine service embedded within the Division of Surgery. Screening for geriatric risk factors preoperative must be accompanied by a plan to manage and mitigate that risk. CGA, which is performed by a skilled physician and delivered by a multidisciplinary team (13), can reduce length of stay and complications such as delirium in older people undergoing surgery (14).

This project has answered questions from COOPERATE 1. While this phase of the project only screened older people undergoing elective colorectal surgery and joint arthroplasty surgery, the high prevalence of geriatric risk factors suggests there may be benefits in extending screening to all older people undergoing elective surgery. The timing of screening was debated but realistically it needs to be adapted to local context and incorporated into existing local processes rather than identifying a specific time that would work for all health services. As the role of prehabilitation and potentially more evidence regarding the role of exercise preoperatively emerges, the timing of screening should be flexible enough to adapt to changes in the evidence. It remains unclear if CGA improves outcomes in all patients or if there are specific subgroups that benefit. This project prioritised CGA for those who screened positive for cognitive impairment and frailty. How to best manage patients who elect not to have surgery requires shared decision making and individualised treatment plans which include referral to other speciality groups depending on the situation.

Risks

- Identification of geriatric syndromes may inadvertently create a risk where cognitively impaired or frail patients maybe actively discriminated against and denied access to appropriate surgical intervention
- Over-assessment of risk with an unwillingness to manage the risk
- Over medicalisation of the patient and repeated attendances in multiple clinics
- Perception of increased workload to preoperative services
- Delays to or deferring of appropriate access to surgical intervention due to perceived risk

Conclusion

This project has identified gaps in the preoperative assessment of older surgical patients, with processes to routinely screen for geriatric risk factors not embedded in practice. It has shown that when screening for geriatric risk factors are introduced, these risk factors are prevalent. Processes to manage and mitigate geriatric risk factors using CGA-based interventions will be required if screening is to be more broadly adopted. PREMs data provided evidence that patients understand the rationale for and are accepting of the screening processes.

Next Steps

The goal of this project was to examine the feasibility and acceptability of the COOPERATE model, the next step requires exploring whether the model improves outcomes and is cost-effective for older elective surgical patients. This would require a multi-site introduction of the model with clearly defined patient and system outcome measures.

Advisory Group

Title	First Name	Surname	Organisation	
Dr.	Aisling	Fleury	MSHHS	Co-Project Lead, Geriatrician
Ms.	Shelley	Haydon	MSHHS	Co-Project Lead, RN grade 7
Ms.	Julie	Dwyer	MSHHS	CNC, Project Officer
Professor	Alison	Mudge	SOPHCN	Clinical Director Research and Education, Internal Medicine and Aged Care, Royal Brisbane and Women's Hospital SOPHCN steering committee
Ms.	Sandra	Lenehan	SWAPNet	Executive Director Specialty and Procedural Services, Gold Coast University Hospital Co-clinical chair, SWAPNet
Dr	John	North	SAC	Orthopaedic Surgeon Clinical Director Queensland Audit of Surgical Mortality Former president Australian Orthopaedic Association
Dr	Owain	Evans	SWAPNet	A/Deputy Director Anaesthesia & Perioperative Medicine
Ms.	Tanya	Archinal	DDHS	Nurse Unit Manager, Orthopaedics

Advisory Group Meeting Schedule

1st Tuesday of the month, commenced 5th November 2019

3rd December 2019

7th January 2020

4th February 2020

3rd March 2020

*out of session correspondence not included

Special Thanks

Mr. Ashley Currie Metro South District Coordinator for Aboriginal and Torres Strait Islander Health
Mr. Warren Waters Darling Downs Cultural Capability Officer
Professor Alison Mudge – SOPHCN
Ms. Tanya Archinal- Toowoomba Hospital Orthopaedics Nurse Unit Manager

Appendix 1

Pre-Admission Questionnaire.

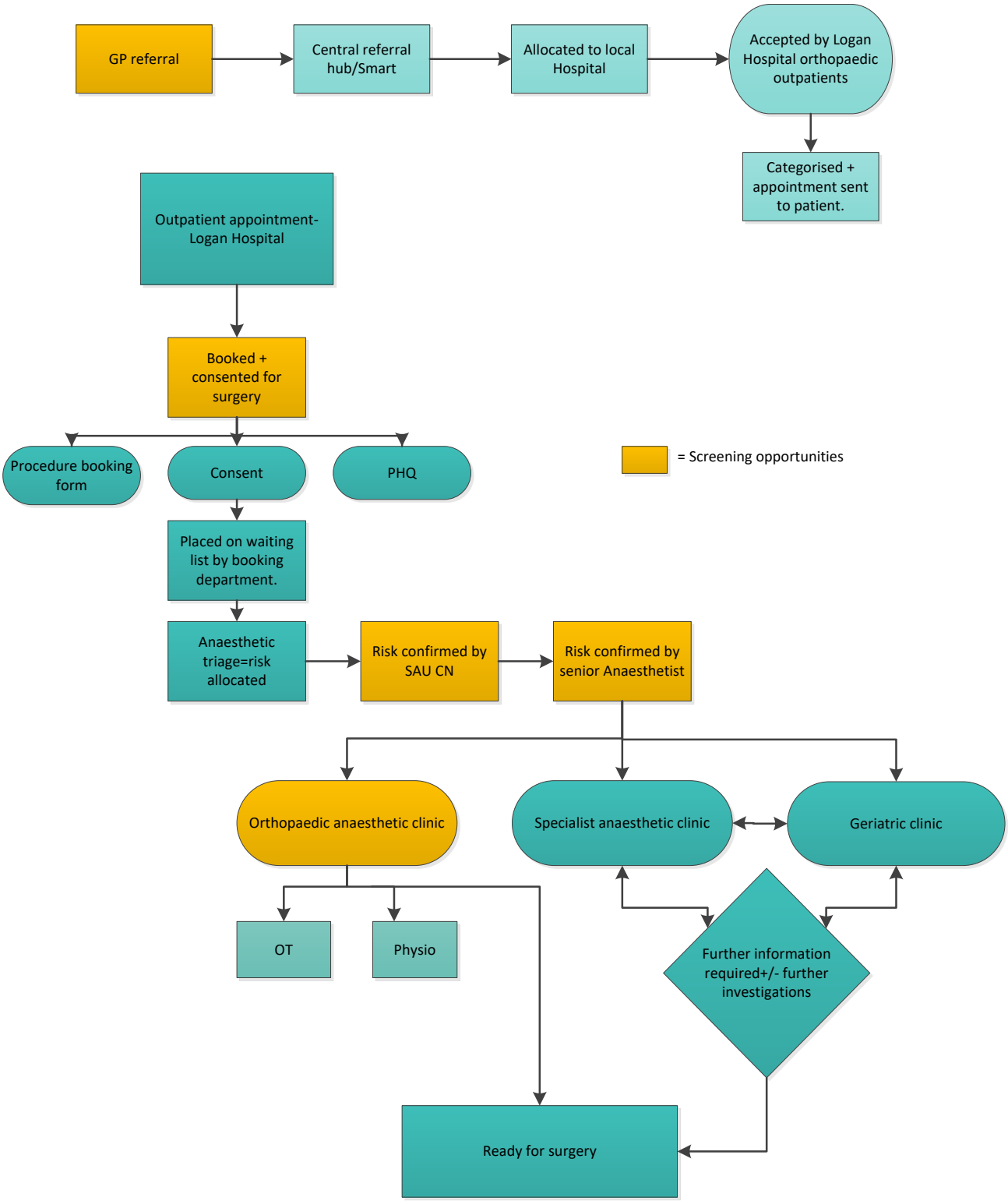
How well are we screening Geriatric syndromes pre-operatively?

Audit criteria: Older people 70+years / 55+ years (Aboriginal and Torres Strait Islander People) Booked for elective major orthopaedic (joint replacements) or major colorectal (bowel resections) surgery.

1. Has a Pre-anaesthetic patient questionnaire been complete? **YES/NO**
2. What is the name of this questionnaire in your hospital? i.e. PHQ, Anaesthetic Patient Questionnaire.
3. How complete would you rate this questionnaire? **50% 75% 100%**
4. Is there also a speciality specific pre-admission questionnaire for patients in your area? i.e. Orthopaedics/Colorectal
5. If YES, what is it known as? i.e. MOPS, ERAS
6. Is there any Cognitive questions/screening? **YES/NO**
7. If YES, what screening tool is used? i.e. Mini-Cog, Montreal Cognitive Assessment (MoCa), Mini-Mental State Examination (MMSE)
8. If YES, is the cognitive tool fully complete? i.e. All questions answered. **YES/NO**
9. If Cognitive impairment is identified what action is taken? i.e. Refer to... Inform admitting ward.
10. Is there any Malnutrition questions/screening? **YES/NO**
11. If YES, what screening tool is used? i.e. MST
12. If YES, is the Malnutrition tool fully complete? **YES/NO**
13. If Malnutrition is highlighted what action is taken? i.e. referral to a Dietician
14. Is there any Functional questions/screening? **YES/NO**
15. If YES, what screening tool is used? i.e. Katz ADL, 5Point Abbreviated Functional Status.
16. If YES, is the screening fully complete? **YES/NO**
17. If Functional concern is highlighted what action is taken? i.e. referral to OT, Physio
18. Is there any Frailty questions/screening? i.e. CFS (Clinical Frailty Scale), Frailty Index **YES/NO**
19. If YES, what screening tool is used? i.e. CFS (Clinical Frailty Scale), Frailty Index
20. If YES, is the Frailty screening fully complete? **YES/NO**
21. If a patient is identified as Frail what action is taken? i.e. referral to Geriatrician (CGA)
22. Is there a documented list of what medication the patients takes? including any non-prescription and over counter. **YES/NO**
23. Does the patient take 5 or more medications? **YES/NO**
24. If Polypharmacy is identified what action is taken? i.e. referral to a pharmacist
25. Is there any Advanced Care Plan? i.e. ARP, Statement of Choices, Advanced health directive. **YES/NO/Unsure.**
26. If YES what? i.e. ARP, Statement of choices, Advanced health directive
27. Can you suggest anything you feel would benefit pre-anaesthetic screening for older people 70 years + undergoing major elective surgery?

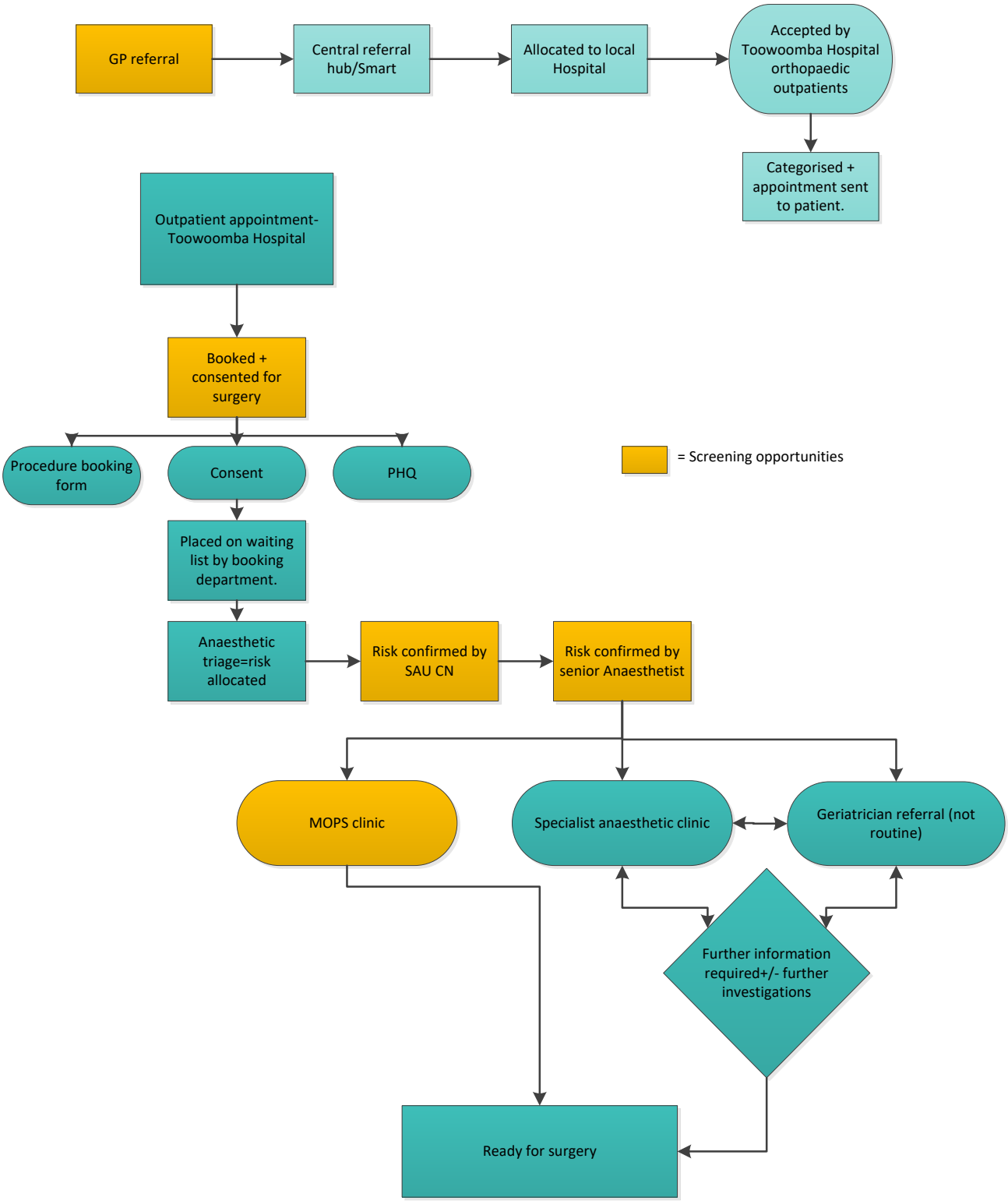
Appendix 2

Logan Hospital screening opportunities



Appendix 3

Toowoomba Hospital screening opportunities



Appendix 4

Logan Pre-Admission Assessment Audit 2019	
	Nov-Dec 2019
Pre-Admission Assessment Tool	**N=20**
Adult Integrated Pre-Procedure Screening Tool utilised (20/20)	100%
100% completion of tool (9/20)	45%
75% completion of tool (10/20)	50%
50% completion of tool (1/20)	5%
Specialist Assessment Tool (Ortho patients only)	**N=10**
Additional specialist assessment tool complete (10/10)	100%
OT/Physio assessment complete (10/10)	100%
Cognitive Assessment	
Cognitive questions in pre-admission tool	Yes
Validated cognitive assessment tool	No
100% completion of cognitive questions (5/10) **N**=10	25%
Cognitive impairment identified (0/10) **N**=10	0%
Malnutrition Assessment	**N=20**
Malnutrition questions in pre-admission tool	Yes
100% completion of malnutrition questions (15/20)	75%
Validated malnutrition tool	No
Functional Assessment	**N=20**
Functional questions in pre-admission tool	Yes
100% completion of functional questions (15/20)	75%
Validated functional assessment tool	No
Frailty Assessment	**N=20**
Frailty questions in in pre-admission tool (0/20)	No
Validated frailty tool	No
Medication Assessment	**N=20**
Medication questions included in pre-admission tool	Yes
Polypharmacy identified (15/20)	75%
Pharmacy assessment complete in patients with polypharmacy (10/20)	50%
Advanced Care plan	**N=20**
Any advance care plan questions in pre-admission tool	Yes
Advanced care plan in place (2/20)	10%

Appendix 5.

Toowoomba Orthopaedic Pre-Admission Assessment Audit 2019	
	Dec 2019
Pre-Admission Assessment Tool	
Anaesthetic Patient Questionnaire complete (25/30)	83%
100% completion of tool (25/25)	100%
Specialist Assessment Tool (Ortho patients only)	**N=30**
Additional specialist orthopaedic assessment tool complete	100%
OT/Physio assessment complete	100%
Cognitive Assessment	
Cognitive questions in pre-admission tool	No
Validated cognitive assessment tool	No
Malnutrition Assessment	**N=30**
Malnutrition questions in pre-admission tool	Yes
100% completion of malnutrition questions	3.3%
Validated malnutrition tool	Yes
Functional Assessment	**N=30**
Functional questions in pre-admission tool	Yes
100% completion of functional questions	100%
Validated functional assessment tool	No
Functional concerns or action required (6/30) – no formal tool utilised	20%
Frailty Assessment	
Frailty questions in pre-admission tool	No
Validated frailty assessment tool	No
Medication Assessment	
Medication questions in pre-admission tool	Yes
100% completion of medication questions (30/30)	100%
Polypharmacy identified (22/30) N=30	73.3%
Medical Officer assessment completed in patients with polypharmacy (22/22) N=22	100%
Advanced Care plan	
Advance care plan questions in pre-admission tool	No

Appendix 6.

COOPERATE project at Logan Hospital

Phase 2 of the COOPERATE project (Collaborative Older Persons Elective surgery Risk Assessment for Treatment Efficacy) is currently running at Logan Hospital until June 2020.

The project aims to develop and trial screening for geriatric risk factors including frailty, functional impairment, cognitive impairment, polypharmacy and malnutrition on patients aged 70+ and Aboriginal and Torres Strait Islander patients aged 55+ who are undergoing major elective surgery at Logan Hospital.

Often older people's main concern facing surgery is how soon they will recover and how to maintain independence. By identifying geriatric syndromes early in the pre-operative setting, strategies can be put in place to potentially prevent post-operative functional and cognitive decline.

The project is in partnership with SOPHCN (Statewide Older Persons Health Clinical Network) and is funded by Clinical Excellence Queensland.

For more information on the project, please contact the clinical leads Dr Aisling Fleury (Geriatrician), Shelley Haydon (CNC), or Julie Dwyer (CNC).

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COOPERATE

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