Queensland Health

Clinical Excellence Division

COOPERATE

COllaborative **O**lder **P**ersons' **E**lective surgery **R**isk **A**ssessment for **T**reatment **E**fficacy

Recommendations
June 2018

Queensland Government

Collaborative Older Persons' Elective Surgery Risk Assessment for Treatment Efficacy.

Published by the State of Queensland (Queensland Health), June 2018

For more information contact:
Clinical Excellence Division, Department of Health, GPO Box 48, Brisbane QLD 4001, email Aisling.Fleury@health.qld.gov.au

This project was funded by Health Improvement Unit and sponsored by the Statewide Older Persons Health Clinical Network

TABLE OF CONTENTS

Executive Summary 5

Surgical Parallel Pathway 6

Background 7

1. Methods 8
   - 1.1 Integrative review of the literature 8
   - 1.2 The Advisory Group 8
   - 1.3 The recommendations 8

2. Patient Choices and Goals 9
   - 2.1 Culturally and Linguistically Diverse People 9
   - 2.2 Aboriginal and Torres Strait Islander People 10
   - 2.3 Tools 10
   - 2.4 Recommendations 10
   - 2.5 Useful Links 10

3. Advance Care Planning 11
   - 3.1 Culturally and Linguistically Diverse People 11
   - 3.2 Aboriginal and Torres Strait Islander People 11
   - 3.3 Tools 12
   - 3.4 Recommendations 12
   - 3.5 Links 12

4. Screening for Geriatric Risks 13
   - 4.1 Recommendations 13

5. Cognitive Impairment 15
   - 5.1 Culturally and Linguistically Diverse People 15
   - 5.2 Aboriginal and Torres Strait Islander People 15
   - 5.3 Tools 16
   - 5.4 Recommendations 16
   - 5.5 Links 16

6. Functional Impairment 17
   - 6.1 Tools 17
   - 6.2 Recommendations 17
   - 6.3 Links 18

7. Malnutrition 19
   - 7.1 Aboriginal and Torres Strait Islander People 19
   - 7.2 Tools 19
   - 7.3 Recommendations 20

8. Frailty 21
   - 8.1 Tools 21
   - 8.2 Recommendations 21

9. Polypharmacy 22
   - 9.1 Aboriginal and Torres Strait Islander People 22
   - 9.2 Tools 22
   - 9.3 Recommendations 23
   - 9.4 Links 23

10. Comprehensive Geriatric Assessment 24
10.1 Recommendations 24
10.2 Links 25
11. Communicating with the Team 26
11.1 Recommendations 26
Conclusion and Next Steps 27
References 28
Advisory Group 33
Advisory Group Meeting Schedule 33
Special Thanks 33
Appendix 1. Shared Outcome Tool 34
Appendix 2. 5 Point Abbreviated Functional Status Tool 35
Appendix 3. Malnutrition Action Flow Chart 36
Appendix 4. Clinical Frail Scale 37
COOPERATE 38

Executive Summary

In 2011-12 in Australia 2.1 million elective surgeries were performed on people aged 65 years and older (1). Surgeons, anaesthetists, physicians, nurses and other health professionals involved in the perioperative management of older people recognise the challenge in managing older patients, often with very disparate needs not related to age or medical comorbidities alone. Modern surgical and anaesthetic pathways are excellent at identifying and managing multi-morbidity but can lack the ability to identify and manage common geriatric syndromes such as cognitive impairment, functional impairment, malnutrition and frailty.

Perioperative medicine requires a multicomponent, multi-stage intervention (2). There is a need to identify risk in the preoperative setting, to modify that risk where possible, to give care in the right place and to prevent and manage complications post-operatively. This concept of perioperative care aligns with the updated National Safety and Quality Health Service standards, specifically the Comprehensive Care Standard (Standard 5) (3).

This document provides a decision support tool with key recommendations to guide surgeons, anaesthetists, physicians, nursing staff and allied health professionals in the provision of the preoperative assessment and management of the older surgical patient (>70 years and >55 years for Aboriginal and Torres Strait Islander People). These recommendations provide a framework and are designed to work synergistically with local pre-anaesthetic evaluation pathways. They are not a substitute for clinical judgement or experience.

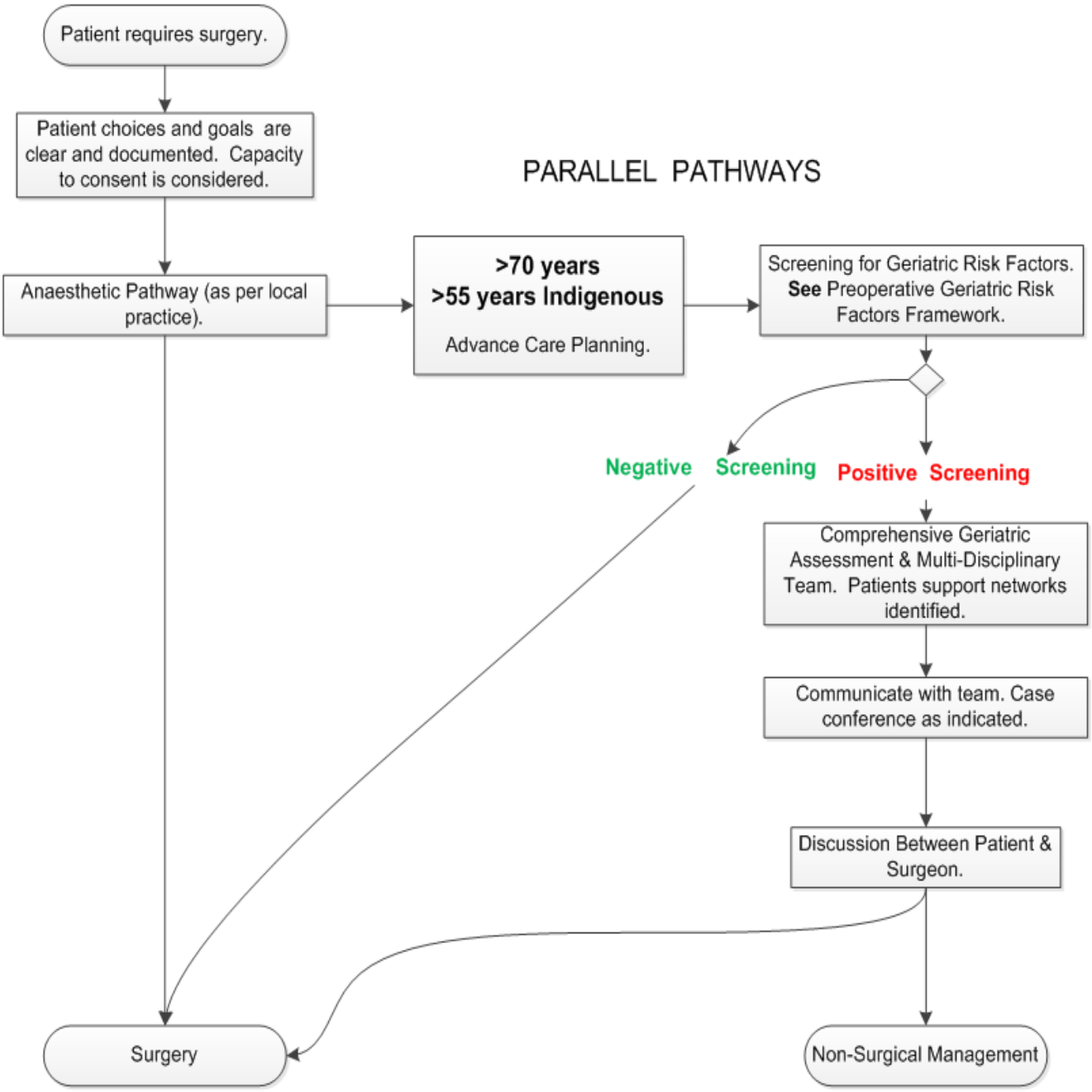
- Screening occurs in the outpatient or primary care setting.
- Screening should be rapid < 10 minutes and culturally safe.
- Positive screen prompts progression to assessment phase.

- Comprehensive Geriatric Assessment.
- Multi-disciplinary team assessment and planning.
- Identify patient support networks.

- Communicate assessment findings with the team.
- Discussion of outcomes between patient and surgeon.
- Surgery or non-surgical management.

Surgical Parallel Pathway

This decision support tool provides a suggested parallel pathway to effectively and efficiently assess, manage and plan the preoperative surgical journey for an older person.



Background

In Queensland the proportion of the population 65 years and over is projected to double by 2036 (4). Improved health outcomes and evolving social attitudes are reshaping the position of our older population by redefining what 'old' means (1). At present 7 in 10 older Australians consider themselves 'in good health' with most managing to live independently with or without community based supports (1). Elective surgery hospitalisations in the older adult population increased on average by 4.6% per year between 2004 - 05 and 2013 – 14 (1). However, elective surgery is not without risk, increasing the potential to lead to functional decline, loss of independence and increased care needs on discharge, especially in high risk patients (5).

Routine perioperative assessment considers cardiovascular and respiratory risk stratification and optimization preoperatively but may not provide adequate assessment of geriatric syndromes which may have more influence on postoperative function and outcomes. Older surgical patients therefore require a different approach to assessment and management preoperatively. Malnutrition, cognitive impairment, functional impairment, polypharmacy and frailty are important predictors of postoperative complications, and often require a multidisciplinary approach to prevention and management. By identifying these risks early in the preoperative setting, interventions to prevent predictable post-operative complications as well as mobilising the patient's pre-existing assets including community services and social supports may improve outcomes.

Older Aboriginal and Torres Strait Islander people

Aboriginal and Torres Strait Islander people are the first peoples of Australia, and have strong cultures and communities. Improving Indigenous health is a key focus in the Queensland health system and forms part of the *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).*

At present the life expectancy gap between Aboriginal and Torres Strait Islander people in Queensland and the non-Indigenous population is between 8.9 (female) - 10.4 (male) years (6). The Northern Territory Audit of Surgical Mortality showed a 12-year age gap at death between Aboriginal and non-Aboriginal people admitted as surgical patients between June 2010 and June 2013 (7). 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 (6). Reducing the age of Aboriginal and Torres Strait Islander people to undergo geriatric risk screening for elective surgical patients to >55 years old, may provide an opportunity to bridge the gap and reduce postoperative complication risks. Although it must be acknowledged that the construct of 'early aging' among Aboriginal and Torres Strait Islanders remains uncertain (8). Lowering the age criteria within these recommendations 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.

1. Methods

1.1 Integrative review of the literature

The existing literature was reviewed to identify current evidence of best practice for perioperative management of the older person. A number of databases were searched including PubMed, MEDLINE, EMBASE, CINHAL and references of the included articles were checked. A number of perioperative guidelines including those from American College of Surgeons, NSW Agency for Clinical Innovation, NICE and NHS were reviewed and integrated.

1.2 The Advisory Group

The advisory group was established with representatives from Statewide Older Persons' Health Clinical Network (SOPHCN), Statewide Anaesthesia and Perioperative Care Clinical Network (SWAPNet) and Surgical Advisory Committee (SAC) to meet monthly to provide expertise and direction towards the development of these recommendations. Out of session communication and collaboration also occurred with allied health representatives and representatives from the Health Equity and Access Unit to ensure the suitability, practicality and cultural sensitivity of such recommendations. The advisory group included specialist medical staff from surgery, anaesthetics, geriatrics and general medicine as well as nursing representatives from 4 Hospital Health Services.

In addition to the advisory group, networking occurred in other facilities and HHS to discuss the project goals, projected patient outcomes and potential integration into perioperative practices. This also provided opportunities to identify common themes and gaps in existing older person management across the healthcare continuum.

1.3 The recommendations

An integrative review of the literature, existing perioperative guidelines and expert opinion has informed the development of these recommendations. It summarises screening tools that are brief, valid and reliable which are specific to the individual geriatric risk factor and most importantly, how to best manage a positive score for a geriatric risk. The development of the decision support tool and the preoperative screening framework will guide and support clinicians in the provision of preoperative assessment, planning and management of the older person undergoing elective surgery.

2. Patient Choices and Goals

1. ***Patient's choices and goals are clear and documented.***

Person centered care has become a core value in modern healthcare where to quality of life, maintenance of independence and return to preoperative function have become increasingly important health care goals for older people (9). Shared decision making improves person-centred care (10). There is a growing appreciation for the patient's ability for self-determination to understand the risks and consequences of a particular health care treatment (10). Health care professionals have an increased responsibility and duty to make sure that patients are aware of risks and possible outcomes of any proposed treatment and alternatives. Shared decision making with patients, families and carers are integral aspects of the perioperative process (11). Decision Aids and other professional techniques have been described to raise the quality of the information provided to the patient and therefore enable them to become active participants in decisions regarding their treatment (12). When considering support aids for shared decision making health care providers need to be aware of the health literacy of the patient and the family (11). Decision support tools such as NICE decision tools (13) or the Ottawa Hospital decision aids (14) can promote shared decision making to complement patient doctor conversations.

The importance of a patient's right to make their own choices and decisions regarding their health care has been established and advocated in a number of legal cases. Within Australian law 'informed consent' is firmly defined as fundamental when seeking a patient's consent to proceed in health decisions (15). To gain a patient's informed consent for surgical procedures there is a legal premise that the patient has capacity to make such decisions. Queensland Health requirements for consent are outlined in: Guide to Informed Decision-Making in Healthcare (16).

2. ***Capacity to consent is considered.***

At common law, a person is presumed to have capacity until proven otherwise (17). Capacity is specific to the decision in question so a person may have decision making capacity for some decisions but not for others (18). Dementia is a risk factor for impaired capacity in an older person (19-22) but a diagnosis of dementia does not mean that a person lacks capacity.

In the preoperative setting, the healthcare team should consider the patient's capacity to give informed consent to a planned treatment course. This means the person understands the treatment options available, including the option of no treatment, and can use and weigh the information to make a decision and then communicate that decision (17). If concern exists as to impaired capacity, expert advice from a geriatrician, psychiatrist or neuropsychologist may be required. When capacity to consent is impaired, consent is needed either from an advance health directive or a substitute decision maker. In Queensland, a substitute decision-maker can be a tribunal appointed guardian, an enduring power of attorney or a statutory health attorney.

2.1 Culturally and Linguistically Diverse People

In the instance where patients are from culturally and linguistically diverse backgrounds, the Queensland Health policy is to access professional interpreter services. The perioperative service providers may also need to consider providing patients with access to written instructions in different languages or multimodal format with pictures (11).

2.2 Aboriginal and Torres Strait Islander People

It is imperative that preoperative care is delivered in culturally safe and competent ways. This may include consultation with the family or nominated family spokesperson and the hospital liaison officer to create a culturally safe environment and support staff during this process. This will reduce potential barriers Aboriginal and Torres Strait Islander people experience. Preoperative services need to work in partnership with Indigenous liaison officers or Aboriginal and Torres Strait Islander Health Workers to achieve optimal health outcomes (11). By taking a holistic approach to health and utilising key staff and community supports this can achieve optimal health outcomes for Indigenous people undergoing elective surgical procedures (11).

2.3 Tools

The Shared Outcomes Tool for the patient journey has key features that can be utilised to actively promote the shared decision-making process. This tool addresses patient information needs for the perioperative process, their desired outcomes from having the surgery and most importantly addressing what they are not prepared to forfeit or risk by having the procedure such as loss of independent living (11) **(See Appendix 1**).

2.4 Recommendations

1. Shared decision making in healthcare is integral in the perioperative process. Older patients undergoing high risk elective surgery should have their choices, goals and treatment preferences discussed with the healthcare team and documented in the patient medical record prior to surgery (23). This discussion should also include specific outcomes that are important to older adults, such as loss of independence, increased care requirements and postoperative functional decline (23).
2. Capacity to consent is considered.
3. Consider the need for involvement of the Indigenous liaison officer or Aboriginal and Torres Strait Islander health worker to ensure cultural safety and availability of existing resources for Indigenous patients.

2.5 Useful Links

Capacity Assessments: Quick tips

Ottawa Decision Aids

NICE decision Aids

Informed Decision Making

Language Services Policy

3. Advance Care Planning

1. ***Advance Care Planning is completed.***

Advance care planning enables the older person to consider and make choices to guide future health care decisions (24). Advance Care Planning (ACP) for the patient can involve selecting and appointing an Enduring Power of Attorney, completing an Advance Health Directive and/ or completing a Statement of Choices that represents healthcare and quality of life choices (24). The completion of such advance planning documents align future care and treatment with a person's choices, and guides healthcare decision making when a patient is no longer able to make such decisions (24). Ideally the advance care plan should be completed in the primary care setting but can be completed by any member of the healthcare team with appropriate knowledge and training. For the hospital admission, consideration of an Acute Resuscitation Plan should be made for any patient considered at increased risk of cardiorespiratory arrest.

The healthcare team including the surgeon and anaesthetist should confirm with the patient prior to undergoing elective surgery if they have completed an Advance Health Directive or Statement of Choices. This information should be recorded in the patient's medical record (23) and a copy sent to the Office of ACP so it is checked for validity and visible for future admissions. The healthcare team should consider, discuss and document an acute resuscitation plan prior to planned surgery, including how it applies in the operative and perioperative period. Advice is available to clinicians from Queensland Health guidance and professional associations. Maintaining a person's autonomy is a key goal of ACP and as such participation in any advance care planning is voluntary (25).

The patient should be encouraged to attend the preoperative assessment with an appropriate substitute decision-maker if available, so that the risks and benefits of surgery are carefully and clearly explained and all questions can be answered (26). An advance care plan, including the Statement of Choices would only be utilised in the event that the person is unable to make or communicate their decisions. The Statement of Choices (Form A) can be altered at any time as long as decision making capacity is present (24).

3.1 Culturally and Linguistically Diverse People

Advance care planning information is available in a number of languages.

3.2 Aboriginal and Torres Strait Islander People

Aboriginal and Torres Strait Islander People may consult with significant family members or a nominated support person regarding healthcare decisions and treatment options. This can impact the time scale to achieve the completion of a Statement of Choices or advance care plan, but with supportive consultation time constraints can be minimised. Engaging with Indigenous health liaison officers can support during the discussion process and provide culturally safe advance care planning communication (24).

3.3 Tools

Statement of Choices: The *Statement of Choices* is an ACP document used in Queensland. The Statement of Choices consists of Form A and Form B. Form A is for people who can make their own health care decisions whereas Form B is for people who cannot make their own choices or who require support for decision making (24). Once decisions have been recorded and the declaration has been signed the original form should be kept and copies given to family, support person(s) and GPs (24) . If the older person would like this form to be available to health care providers, the completed forms can be sent to the Office of Advance Care Planning. The Statement of Choices will then be added to the patient's secure electronic record.

3.4 Recommendations

1. All older patients undergoing elective surgery should be offered information and the opportunity to discuss advance care planning in the outpatients or primary care setting (as per local practice).

2. The patient should be given time to reflect and consider advance care planning and the Statement of Choices.

3. Where possible the person who is or could be the substitute decision maker attends relevant appointments and is given the opportunity to ask questions.

4. Where appropriate, acute resuscitation planning should be discussed and documented, with particular reference to the perioperative period.

5. Consider the need for involvement of the Indigenous liaison officer or Aboriginal and Torres Strait Islander health worker to ensure cultural safety and availability of existing resources for Indigenous patients.

3.5 Links

My Care My Choices Advance Care Planning:

Advance Care Planning Brochure:

End-of-life care: Guidelines for decision-making

4. Screening for Geriatric Risks

Adverse postoperative outcomes in older elective surgical patients have been attributed to multi-morbidity, age-related physiological change, and the prevalence of geriatric syndromes (27, 28). Cognitive impairment, functional impairment, frailty, malnutrition and polypharmacy preoperatively are associated with poorer outcomes postoperatively. Therefore, screening for these common geriatric syndromes preoperatively and instigating further assessment and a comprehensive management plan may improve outcomes postoperatively.

Screening questions need to be brief. The screening tools we recommend in this review have been validated for use in the preoperative setting and many can be done by the patient/ their support person. The optimal timing of screening for geriatric risk factors in the preoperative period is not addressed in current literature. From a practical perspective it should be early enough to provide sufficient time for community services to be alerted and to plan, for medication changes to occur and for allied health management plans to be actioned. At the same time, sufficiently close to the time of surgery for the assessment to remain valid. We suggest 2-8 weeks preoperatively, but the nature and urgency of surgery will also need to be taken into account.

Patients with risk factors identified should be referred for further assessment and management. This could be done as a multi-disciplinary high-risk clinic which would include access to allied health professionals, nursing staff and geriatrician/physician and anaesthetist as part of a comprehensive geriatric assessment.

4.1 Recommendations

1. Screening for geriatric risk factors should occur in the outpatients or primary care setting. The timing of the screening will depend on the patient and the urgency of their planned surgery but it should probably occur 2 - 8 weeks before planned surgery.
2. The Preoperative Geriatric Risk Factors Framework (see following page) can be utilised to guide the screening process and suggest further management.
3. If a patient is identified with geriatric risk factors the patient requires further assessment and perioperative planning.
4. Consider the need for involvement of the Indigenous liaison officer or Aboriginal and Torres Strait Islander health worker to ensure cultural safety and availability of existing resources for Indigenous patients when screening.

Preoperative Geriatric Risk Factors Framework

		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
ASSESSMENT and MANAGEMENT PLANNING PHASE	**What to do with positive screening?**	Medical officer review Occupational therapist referral Local delirium prevention/management strategies	Allied health referral appropriate to patient needs. Medical Officer	Dietitian referral Perioperative treatment plan e.g. ERAS Reduce length of preoperative fasting	Medical officer Allied health referral as appropriate to patient needs. Local delirium prevention/management strategies	Clinical pharmacist review Medical officer review
	Suggested tools if risk identified	MoCa RUDAS MMSE KICA urban	Katz ADL Instrumental ADL	Malnutrition Action Flow chart	Frailty Index (F.I)	STOPP/START BEERS

5. Cognitive Impairment

1 in 10 people aged 65 years old in Australia have dementia (29). The risk of developing dementia doubles every 5 years from 65 years onwards (30). Recent studies have shown the prevalence of cognitive impairment may be even higher in surgical patients. A group in the US found 24% of older elective orthopaedic patients had preoperative cognitive impairment (31) whereas in the UK 68% of vascular surgery patients had cognitive impairment at admission (32). Queensland data from the CHERISH group (33) showed between 7%-47% of hospitalised older surgical patients, both elective and emergency admissions, had cognitive impairment (34). Therefore, preoperative screening for cognitive impairment preoperatively should be routine practice for older patients (31, 35).

Preoperative screening for cognitive impairment aims to identify people not already known to have dementia or mild cognitive impairment (MCI). We have recommended the mini-Cog as the preferred screening tool, because it is brief, sensitive and has been validated in preoperative settings. The GPCOG is a similar instrument commonly used in primary care. Further assessment is then indicated to assess cognition, with special considerations given below (36).

Preoperative cognitive impairment is the strongest predictor of postoperative delirium. Identification of pre-existing dementia or screening for cognitive impairment preoperatively enables the patient, their support network and the treating team to better plan for their care. Cognitive impairment can also impact upon an individual's ability to provide informed consent and participate with shared decision making (32). The development of delirium impacts length of stay, higher rates of complications after surgery, increased likelihood of discharge to long term care facilities and increased mortality (31, 36, 37). A significant proportion of delirium can be prevented as programs such as Hospital Elder Life Program (38) and Eat Walk Engage (39) have shown.

5.1 Culturally and Linguistically Diverse People

The MMSE and RUDAS are validated and reliable screening tools in culturally and linguistically diverse populations in Australia and Internationally (40). The RUDAS cognitive screening tool was specifically designed to minimise the impact of cultural difference on assessment performance (40).

5.2 Aboriginal and Torres Strait Islander People

Recent research indicates that Aboriginal and Torres Strait Islander communities experience prevalence of dementia 3 -5 times higher and at a younger age than the general Australian population (41). Culturally appropriate, objective and reliable methods of assessing cognitive function are essential to improve accurate early diagnosis of cognitive impairment and dementia in older Aboriginal and Torres Strait Islander people. The RUDAS, MMSE and KICA-Cog are all validated tools in the Australian Indigenous population (40). The KICA-Cog is a tool specifically designed for cognitive screening in remote Indigenous populations where many different Indigenous languages are used (40). The KICA urban is a shorter version of the KICA –Cog and is a validated in predominately English-speaking urban Indigenous people (41).

5.3 Tools

MINI – COG: The Mini-Cog has been validated for use in the preoperative setting; it is quick and easy to use and has a sensitivity of 99% for dementia (35, 36). It has been tested for validity and reliability in culturally, linguistically and educationally heterogeneous older people (42). If the Mini-Cog identifies evidence of cognitive impairment (score ≤2) the patient should be referred for specialist assessment (geriatrician, general physician, neurologist) before a diagnosis of dementia or MCI is made (35).

The General Practitioner Assessment of Cognition (GPCOG): is a valid, reliable, time efficient and free screening tool for dementia in the primary care setting (43). The GPCOG score is not subject to biases such as gender, education, cultural or linguistic backgrounds (43). The GPCOG consists of a brief cognitive testing (4 mins) and an informant interview (2mins).

5.4 Recommendations

1. Ideally this would be done as a comprehensive geriatric assessment. Screening for cognitive impairment in people not known to have dementia or MCI should occur preoperatively, either in primary or hospital setting.
2. The Mini-Cog is the recommended screening tool in the hospital setting. In primary care, Mini-Cog or GPCOG can be used depending on user preference and familiarity.
3. Mini-Cog score ≤2 should trigger further assessment by specialist (geriatrician, general physician or neurologist) before a diagnosis of dementia or MCI is made. The remaining geriatric risk factors screening should utilise collateral history.
4. For any patient identified as having cognitive impairment preoperatively, delirium prevention strategies should be considered early.

5.5 Links

GPCOG
Informant questionnaire on Cognitive decline (IQCODE)
RUDAS
KICA
MOCA
Please note: The forms above are all available and accessible within the iEMR.

6. Functional Impairment

Functional status is a reliable predictor of postoperative complications including postoperative pulmonary complications, nursing home placement, postoperative functional decline and increased wound infections (44). When impaired functional status is combined with frailty and multi-morbidity, it is predictive of perioperative mortality (45, 46). One study in the US identified that, without screening, one quarter of patients with a preoperative functional deficit would have been missed (47). Identification of impaired functional status in the preoperative setting may help the patient, their support network and their healthcare team to more accurately plan care needs postoperatively. It may promote exploration of the older person's desired outcome from surgery and post-operative functional expectations (45).

Functional status can be assessed easily in the preoperative setting (44). Assessing functional status requires assessing the older person's ability to perform Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL).

Older people identified with impairments in ADL function should be referred for comprehensive geriatric assessment (CGA). This can identify need for preoperative assistive devices, home modifications and potentially an opportunity for intervention strategies to mitigate further decline. It can also guide early discharge planning by anticipating need for postoperative rehabilitation (48) increased support from family/friends and increased community services. Whilst falls risk does formulate part of the functional assessment, this has not been included in these recommendations. Falls screening is already captured on all admissions as part of the new combined National Standard 5 (3).

6.1 Tools

Functional Status can be measured utilising a number of different tools. The simplest and most efficient tool for initial screening is the 5 point abbreviated functional status. The 5 point abbreviated functional status tool proposed by the ACS, NSQIP and American Geriatric Society is validated in the preoperative setting (47). The findings in one study identified this tool to have similar specificity and sensitivity to the more comprehensive basic ADL and IADL tools (47). If the patient answers NO to any of these questions in the 5 point abbreviated functional status the patient should undergo a more in depth evaluation and a full screening of basic ADLS and IADLS.

6.2 Recommendations

1. Screening for functional impairment should occur in the preoperative or primary care setting. Consider using the 5 point abbreviated functional status tool as the initial screening (**appendix 2**).

2. If the patient answers **NO** to any of the simple screening questions. Consider further evaluation utilising the basic ADL and Instrumental ADL to identify functional impairment.

3. Identified deficits should be documented in the patient's medical record and prompt perioperative interventions such as occupation therapy referral, evaluation of existing community and social supports and proactive discharge planning.

6.3 Links

IADL – Australian Modified Lawtons IADL scale

7. Malnutrition

Preoperative nutritional status is predictive of both morbidity and mortality after major surgery (12). Malnutrition is associated with increased risk of post-operative adverse events such as infectious complications (e.g. surgical site infections, urinary tract infections, pneumonia), wound complications (e.g. anastomotic leaks and dehiscence) and increase length of stay (35). The older person, individuals from vulnerable populations such as Indigenous Australians and individuals with chronic disease are at higher risk for malnutrition (49).

Nutritional screening identifies an individual who is or is at risk of malnutrition (50). Identifying an older person's malnutrition risk preoperatively offers an opportunity to intervene and improve nutritional status and may decrease the risk of associated post-operative complications (51). Utilising a valid, reliable and user friendly malnutrition screening tool is a key consideration in the busy clinical environment (52). Other tools that require more complex calculations such as BMI can lead to reduced compliance with screening (50).

7.1 Aboriginal and Torres Strait Islander People

Older Aboriginal and Torres Strait Islander people are more likely to experience poor nutritional status and malnutrition than the non-Indigenous population (53, 54). Socio-economic disadvantage and other social determinants of health are considered to be significant contributing factors to the burden of malnutrition in Indigenous people (53). It must be acknowledged that there is paucity in the literature regarding the validation and reliability of malnutrition screening tools amongst the Indigenous population.

7.2 Tools

MST – The Malnutrition Screening Tool is the simplest and most widely utilised screening tool in Australian hospitals (51, 55). The MST is suitable for acute adults in the inpatient and outpatient clinical setting and in older adult populations. The tool is based on nutritional screening parameters of recent weight loss and poor intake/ appetite (50). MST has been established for validity and reliability and inter-rater reliability amongst the acute adult and older adult population in Australia. The MST can be completed by any person including the individual patient (56, 57).

The MST has demonstrated a high specificity and sensitivity (93%) consistently across different patient populations compared with the Subjective Global Assessment. Its, interrater reliability is 93 -97% (50). The MST screening tool is not designed to predict clinical outcomes (51). A person determined to be at high nutritional risk by the screening tool will require further nutritional assessment by a Dietitian to get a complete indication of nutritional deficits and severity (51).

7.3 Recommendations

1. Malnutrition screening should occur in the preoperative setting in primary care, surgical outpatients or in the pre-anaesthetic clinic.

2. The Malnutrition Screening Tool [MST] can be performed by a number of people without any training; medical officers, nurses, dietetics, administration officers, Indigenous health liaison officers, patients and relatives can complete the tool.

3. The Malnutrition Action Flow Chart should be utilised by a clinician for a positive screen MST score of 2 (**appendix 3**).

4. Patients with a MST score of 3 -5, where possible, should undergo a comprehensive nutritional assessment by a Dietitian and have a complete perioperative nutritional plan to address deficiencies and be considered for preoperative nutritional therapy (as per the recommendations by the European Society for Clinical Nutrition and Metabolism [ESPEN]) (58).

5. Minimise preoperative fasting time where clinically appropriate for all risk categories, and monitor postoperative intake. Early return to full nutritional intake is beneficial in most patient groups (58).

8. Frailty

Frailty is increasingly recognised as one of the strongest independent predictors of poor outcomes in older surgical patients (59, 60). It is associated with increased risk of postoperative complications including delirium, increased mortality, prolonged length of stay and loss of independence as well as increased risk of discharge to residential aged care facility (59, 61-65).

As yet, there is no standard method of assessing frailty. The two most commonly used methods in the literature are the frailty phenotype and the frailty index. The frailty phenotype describes characteristics of people with frailty such as weight loss, exhaustion, slow gait speed, weak handgrip and decreased activity (66). The frailty index is a deficity accumulation model and uses a variety of domains such as comorbidities, polypharmacy, function and cognition to create a data set – generally of approximately 40 items – to determine a denominator. The number of deficits in an individual patient is calculated and expressed as a fraction of the denominator giving the frailty index (FI) (67). A FI of 0.7 or greater is incompatible with life (68).

8.1 Tools

While the frailty phenotype and FI have been used in the perioperative literature neither are particularly suited to use as a screening tool. The Edmonton Frail Scale (EFS) (69) or the Clinical Frailty Scale (CFS) (70) have been used to screen for frailty in the preoperative setting (28, 71). We recommend the CFS due to its ease and speed of use (72). It has been validated in the outpatient setting and has proven inter-observer reliability (72). It is already in use in hospitals/HHS across Queensland. A CFS score of 4 or more indicates early frailty (72) and should trigger comprehensive geriatric assessment in preoperative patients.

8.2 Recommendations

1. Older patients should be screened for frailty in the preoperative outpatient setting using the Clinical Frailty Scale (CFS) (**appendix 4**).
2. A CFS of 4 or more should trigger comprehensive geriatric assessment.
3. Frail patients should receive delirium prevention strategies.

9. Polypharmacy

Medications can improve an older persons' quality of life through maintenance of function and symptom control (73). Medication use in older people is common; in a cross-sectional survey of community dwelling Australian adults age 75 years and above, 66% reported taking 5 or more medications, and more than 20% reported using 10 or more (74). A number of studies have identified 19-77% of older people have experienced at least one potentially inappropriate medication and 23-74% of older people have experienced at least one potential prescribing omissions (75).

Polypharmacy has no standard definition which is consistently utilised in the literature (76), however this framework will define polypharmacy as five or more regular prescription and/or non-prescription medications (77). The focus of preoperative polypharmacy should be on suboptimal or inappropriate prescription, on non-prescription medications and potential drug interactions (35). Inappropriate prescribing in older people comprises of both the prescribing of potentially inappropriate medications (PIMs) and potential prescribing omissions (PPOs) (75). It is widely accepted that potentially inappropriate prescribing (PIP) of medications has considerable humanistic, clinical and economic impacts (78). In older populations physiological changes can alter pharmacodynamics and pharmacokinetics making prescribing and clinical medication reviews challenging (78, 79).

Although medical officers are responsible for initiating and monitoring prescribed medicines, pharmacists have a fundamental role in dispensing, monitoring and clinical review of medicines (79). The data from STOPP/START studies reflect that when pharmacists have access to the same clinical case information, they are able to apply the STOPP/START criteria with similar degrees of reliability to physicians in geriatric medicine (79). In addition to these findings, there was no statistically significant difference with findings between hospital pharmacists and community pharmacists.

9.1 Aboriginal and Torres Strait Islander People

It is notable there is a low prevalence of polypharmacy in Indigenous populations (80). This has been identified in a number of studies exploring polypharmacy and polypharmacy as a risk factor for other patient outcomes. Cost of medications, communication issues leading to Aboriginal and Torres Strait Islander people not understanding the necessity of prescribed medications and side effects are some of the barriers of medication use in Indigenous populations (81). Screening for polypharmacy amongst this population will need to be considered in a culturally safe manner, as medication sharing is common in some Indigenous communities (81).

9.2 Tools

The NICE guideline on multi-morbidity recommends that the use of a screening tool is considered. Identifying if an older person is at risk of polypharmacy, screening requires asking if the patient takes $\geq$ 5 medications including non-prescription, over the counter, complementary and alternative medicines.

9.3 Recommendations

1. Initial screening to identify potential polypharmacy risk can be performed by a number of people without training: medical officers, nurses, patients, relatives, Indigenous liaison officers and administration officers by asking if the patient takes ≥5 medications including non-prescription, over the counter medications or complementary and alternative medicines.

2. If the patient takes ≥5 Medications including non-prescription, over the counter medications or complementary and alternative medicines, the patient should undergo a clinical pharmacist and/or medical officer review and consider utilising tools such as the STOPP/START tool, and develop a perioperative medication management plan.

3. A perioperative medication management plan should be made in conjunction with the patient, pharmacist and treating surgeon, anaesthetist, and/or physician. This should include at a minimum a plan for anti-coagulants, anti-platelets, diabetes medication, anti-hypertensive and preoperative pain medication.

    3.1) Planned discontinuation of non-essential medications should occur with the patient/support person in the days leading up to surgery. Considerations may include:

        a) The potential for withdrawal

        b) The progression of disease with interruption in drug therapy

        c) The potential for interaction with anaesthetic agents.

4. Planning for recommencement of baseline preoperative medications in the postoperative period – with consideration to minimize and review the polypharmacy risk.

9.4 Links

Choosing Wisely

NICE guidelines multi-morbidity

10. Comprehensive Geriatric Assessment

Comprehensive Geriatric Assessment (CGA) is a multi-domain interdisciplinary tool used to not only assess but also manage geriatric syndromes in older people. It encompasses a biopsychosocial model of care (82). For medical inpatients and community dwelling older people, CGA is associated with lower risk of death and higher chance of being home at 36 months compared with standard care (83). While usually co-ordinated by geriatricians, in the perioperative setting CGA could potentially be undertaken by general physicians, anaesthetists with special interest and GPs with special interest with appropriate training – although no studies have been done to compare expertise across craft groups as yet.

Proactive care of Older People undergoing Surgery (POPS) group in the UK have published extensively on role of CGA in the preoperative setting. Harari et al published the first paper in 2007 and found significant improvement in postoperative complications including pneumonia, delirium, pressure injuries and showed a reduced Length of Stay (LOS) of 4.3 days (84). The same group performed a Randomised Controlled Trial (RCT) for preoperative vascular surgical patients aged 65 years and older and found significantly reduced rates of delirium, reduced length of stay by 2 days, reduced medical complications and increased likelihood of discharge straight home in the intervention group (85).

A 2018 Cochrane review reviewed CGA in patients admitted as emergency surgical patients. Only 8 papers met the inclusion criteria of the study, of which 7 studied CGA in patients with hip fracture. CGA improved outcomes for patients with hip fracture including improved function, reduced length of stay, reduced mortality at 1 year and reduced cost (86). The only non-orthopaedic paper included in the Cochrane review studied older patients admitted with non-orthopaedic trauma and showed no benefit of CGA. Geriatric co-management may reduce length of stay and mortality, with most evidence in hip fracture patients (87).

The role of prehabilitation is as yet undefined. Prehabilitation is the process of improving preoperative function with a view to influencing postoperative outcomes (88). A systematic review published in 2015 (89) showed no evidence that prehabilitation improved function, quality of life or pain in elective joint arthroplasty patients. The same study showed insufficient evidence to recommend prehabilitation in any other surgical group. Similarly, a meta-analysis in 2016 looked at the role of prehabilitation on postoperative outcomes from intra-abdominal surgery (90). It concluded that while prehabilitation may reduce postoperative complications, the evidence to support this was very low quality. For patients being considered for elective total knee replacement for osteoarthritis The Australian Commission on Safety and Quality in Healthcare (ACSQHC) Osteoarthritis of the Knee Clinical Care Standard recommends weight loss, exercise together with education and self-management to delay or even avoid the need for surgery (91). We consider this non-surgical management rather than prehabilitation which is the process of improving preoperative function with a view to influencing postoperative outcomes (88). At this stage, prehabilitation is not routinely recommended in patients with preoperative geriatric syndromes to prevent postoperative complications (92).

10.1 Recommendations

1. Older patients identified as having a geriatric syndrome in the preoperative setting (either through screening or known) may benefit from CGA with a management plan for pre and postoperative needs formulated, which may need support through inpatient follow-up of recommendations.

2. The outcome of the CGA should be communicated to the treating surgeon either through case conference or in writing.

3. There is currently no evidence to recommend prehabilitation for older people with geriatric syndromes undergoing elective surgery.

4. Consider the need for involvement of the Indigenous liaison officer or Aboriginal and Torres Strait Islander health worker to ensure cultural safety and availability of existing resources for Indigenous patients.

10.2 Links

Comprehensive Geriatric Assessment

11. Communicating with the Team

A written summary of perioperative issues and associated management plan identified from Comprehensive Geriatric Assessment (CGA) should be provided to the patient and the treating healthcare team. This can then be communicated more broadly including ward staff, rehabilitation team (if the patient is likely to need inpatient rehabilitation), the patient's GP and even community service providers who may be asked to step up service provision in the short term postoperatively.

In limited occasions e.g. where the older person's care is especially complex and high risk, a case conference model may need to be utilised. Case conferencing is a multidisciplinary communication tool used extensively across both community and hospital settings. The evidence for case conferences is however scant, including in planning cancer treatment (93). In the palliative care field, case conferences have been shown to reduce hospitalisations and improve function (94) whereas in the residential care setting, there were trends towards reduced medication use and mortality but none reached statistical significance (possibly due to the study design and short follow up) (95). Despite the limited evidence, case conference are growing in popularity and being integrated more and more into care pathways – especially when it comes to older people (96). Preoperative case conferences have been used to guide advance care planning discussions – as has been done in Townsville (97). QFIRST at Sunshine Coast University Hospital (SCUH) is also using case conferencing to discuss treatment options in high risk patients.

There are no clear guidelines as to who should participate in case conferences; on whether the patient and their family/support person should be included and which medical/allied health clinicians should be involved. Preoperative case conferencing for patients with a positive geriatric risk screen should include at a minimum the treating surgeon, anaesthetist and physician. Where practical, allied health professionals, nursing staff and the patient's GP should also be involved. Local hospital and health services should decide on their own case conference model and whether to include the patient in the case conference or have the patient and their support person have a separate discussion with a member of the healthcare team at a later date.

11.1 Recommendations

1. For complex high-risk patients, case conferencing between all members of the patient's treating team may help guide treatment and plan for postoperative care including discharge back to the community.

2. If in-person case conferencing is not practical or possible, written communication from comprehensive geriatric assessment should be communicated from the multidisciplinary team to the treating surgeon using a standard pre-agreed format.

Conclusion and Next Steps

As our patients age, acquire multi-morbidities, and develop geriatric syndromes, they require a multidisciplinary, multifaceted approach to their care. The preoperative framework we have developed in this project is a practical, yet comprehensive, approach to the assessment and management of preoperative risk factors that affect postoperative outcomes for older patients who undergo elective surgery.

Good perioperative care requires teamwork; both between the patient and their healthcare team and within the healthcare system. Throughout this project we have considered the role of teamwork and collaboration across multiple specialties which are increasingly recognising the need to work together. The models of care we have developed through this project aim to enable patients, their support persons and their healthcare team to better plan for their care. Through early identification and modification of risk, as well as improved care co-ordination, we may reduce preventable complications, manage predictable postoperative complications proactively, and reduce delayed discharge.

There are many unanswered questions from this project. Should screening be done on every patient booked for elective surgery? When should screening occur in relation to the planned surgery? Does comprehensive geriatric assessment improve outcomes for all surgical patients with geriatric syndromes or are there subgroups which benefit more than others? How should we manage patients, who with their healthcare team, elect not to have surgery? These are but a few of the gaps in knowledge in perioperative medicine. We also recognise that to date much of the literature focuses on healthcare related outcomes such as morbidity and mortality. There is little on patient-related outcomes such as quality of life, change in functional or cognitive status post discharge or whether the patient achieved the outcome they hoped for from their surgery. We need to move beyond simple metrics and start to get a better understanding of whether we are delivering the care our patients want. We need to consider what we can do for our patients not to them.

This project has several limitations. Firstly, the literature regarding perioperative care of older people is in its infancy with the majority of the published work focusing on assessment of risk but little on how to alter that risk or manage it more effectively. This has follow-on effects for the recommendations we propose which are from a small evidence base. Secondly, the framework we are proposing has not been trialled in practice and its feasibility and acceptability require testing. Thirdly, by identifying people with geriatric syndromes we may inadvertently create a situation in which cognitively impaired or frail patients are discriminated against and denied access to appropriate surgical care. We have tried to account for this in the pathway but it needs to be borne in mind by all clinicians caring for this group of patients.

Through this project we have developed a framework with key recommendations which we believe will improve the quality of care delivered to older surgical patients across Queensland. While the SOPHCN has been the lead network, there has been significant collaboration across SWAPNet and SAC. Given the increasing number of patients undergoing elective surgery, we recommend this framework should be piloted to assess its feasibility and acceptability as a process, its cost effectiveness and whether it improves outcomes for our patients.

References

1. Australian Insititute Health and Welfare. Australia's Health 2016. Canberra: AIHW; 2016.
2. Partridge J, editor Using comprehensive geriatric methodolgy in the preoperative setting. AAA scientific meeting/ British Geriatric Society POPs conference; 2018 May London.
3. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards. 2nd ed. Sydney: ACSQHC; 2017.
4. Queensland Government. Queensland Government Population Projections, 2015 edition. In: Treasury Q, editor. 2015 ed: Queensland Government Statistician's Office; 2015. p. 1-7.
5. Fleisher LA, Fleischmann KE, Auerbach AD, Barnason SA, Beckman JA, Bozkurt B, et al. 2014 ACC/AHA guideline on perioperative cardiovascular evaluation and management of patients undergoing noncardiac surgery: a report of the American College of Cardiology/American Heart Association Task Force on practice guidelines. J Am Coll Cardiol. 2014;64(22):e77-137.
6. Queensland Health. Making Tracks towards closing the gap in health outcomes for Indigenous Queenslanders by 2033 - policy and accountability framework. 2010.
7. Treacy PJ, North JB, Rey-Conde T, Allen J, Ware RS. Outcomes from the Northern Territory Audit of Surgical Mortality: Aboriginal deaths. ANZ Journal Of Surgery. 2015;85(1-2):11-5.
8. Cotter PR, Condon JR, Barnes T, Anderson IPS, Smith LR, Cunningham T. Research note: Do Indigenous Australians age prematurely?: The implications of life expectancy and health conditions of older Indigenous people for health and aged care policy. Australian Health Review. 2012(1):68.
9. Russell MM, Berian JR, Rosenthal RA, Ko CY. Improving quality in geriatric surgery: A blueprint from the American College of Surgeons. Bull Am Coll Surg. 2016;101(12):22-8.
10. Hoffmann TC, Légaré F, Simmons MB, McNamara K, McCaffery K, Trevena LJ, et al. Shared decision making: what do clinicians need to know and why should they bother? Medical Journal of Australia. 2014;201(1):35-9.
11. Agency for Clinical Innovation. The Perioperative Toolkit. 2016.
12. National Confidential Enquiry into Patient Outcome and Death. Knowing the Risk: A review of the peri-operative care of patients 2011. Available from: http://www.ncepod.org.uk/2011poc.html. .
13. National Instituite for Health and Care Excellence. Patient Decision Aids Available from: https://www.evidence.nhs.uk/.
14. The Ottawa Hospital. Patient Decision Aids 2015. Available from: https://decisionaid.ohri.ca/.
15. Australian Law Reform Commission. Equality, Capacity and Disability in Commonwealth Laws (DP 81). 2014.
16. Clinical Excellence Division. A Guide to Informed Decision-Making in Healthcare. 2017.
17. Snow HA, Fleming BR. Consent, capacity and the right to say no. The Medical Journal Of Australia. 2014;201(8):486-8.
18. Brémault-Phillips SC, Parmar J, Friesen S, Rogers LG, Pike A, Sluggett B. An Evaluation of the Decision-Making Capacity Assessment Model. Canadian Geriatrics Journal. 2016;19(3):83-96.
19. Spreng RNP, Karlawish JM, Marson DCM. Cognitive, social, and neural determinants of diminished decision-making and financial exploitation risk in aging and dementia: A review and new model. Journal Of Elder Abuse & Neglect. 2016;28(4-5):320-44.
20. Moye J, Marson DC. Assessment of decision-making capacity in older adults: an emerging area of practice and research. The Journals Of Gerontology Series B, Psychological Sciences And Social Sciences. 2007;62(1):P3-P11.
21. Bennett H, Hallen P. Guardianship and financial management legislation: what doctors in aged care need to know. Internal Medicine Journal. 2005;35(8):482-7.
22. Astell H, Lee J-H, Sankaran S. Review of capacity assessments and recommendations for examining capacity. The New Zealand Medical Journal. 2013;126(1383):38-48.
23. American College of Surgeons NSQIP/ American Geriatrics Society. Optimal Perioperative Management of the Geriatric Patient: Best Practice Guidelines. 2016.
24. Queensland Government. My Care, My Choices Advance Care Planning 2017. Available from: https://metrosouth.health.qld.gov.au/acp/explained.
25. Australian & New Zealand Society for Geriatric Medicine. Position statement 27 Advance Care Planning. 2016.
26. Woolger JM. Preoperative Testing and Medication Management. Clinics in Geriatric Medicine. 2008;24(4):573-83.
27. Partridge JSL, Collingridge G, Gordon AL, Martin FC, Harari D, Dhesi JK. Where are we in perioperative medicine for older surgical patients? A UK survey of geriatric medicine delivered services in surgery. Age & Ageing. 2014;43(5):721-4.

28. Dasgupta M, Rolfson DB, Stolee P, Borrie MJ, Speechley M. Frailty is associated with postoperative complications in older adults with medical problems. Archives of Gerontology and Geriatrics. 2009;48(1):78-83.
29. Dementia Australia. Dementia Key facts and statistics 2018 2018 [15 April 2018]. Available from: www.dementia.org.au/statistics.
30. Corrada MM, Brookmeyer R, Paganini-Hill A, Berlau D, Kawas CH. Dementia Incidence Continues to Increase with Age in the Oldest Old The 90+ Study. Annals of Neurology. 2010;67(1):114-21.
31. Culley DJ, Flaherty D, Fahey MC, Rudolph JL, Javedan H, Huang C-C, et al. Poor Performance on a Preoperative Cognitive Screening Test Predicts Postoperative Complications in Older Orthopedic Surgical Patients. Anesthesiology. 2017;127(5):765-74.
32. Partridge JSL, Dhesi JK, Cross JD, Lo JW, Taylor PR, Bell R, et al. The prevalence and impact of undiagnosed cognitive impairment in older vascular surgical patients. Journal of Vascular Surgery. 2014;60(4):1002-11.e3.
33. Mudge AM, Banks MD, Barnett AG, Blackberry I, Graves N, Green T, et al. CHERISH (collaboration for hospitalised elders reducing the impact of stays in hospital): protocol for a multi-site improvement program to reduce geriatric syndromes in older inpatients. BMC Geriatrics. 2017;17:11.
34. Mudge AM. In: Fleury A, editor. Personal Communication ed2018.
35. Chow WB, Rosenthal RA, Merkow RP, Ko CY, Esnaola NF. Optimal preoperative assessment of the geriatric surgical patient: a best practices guideline from the American College of Surgeons National Surgical Quality Improvement Program and the American Geriatrics Society. Journal Of The American College Of Surgeons. 2012;215(4):453-66.
36. Long LS, Shapiro WA, Leung JM, Long LS, Shapiro WA, Leung JM. A brief review of practical preoperative cognitive screening tools. Canadian Journal of Anaesthesia. 2012;59(8):798-804.
37. Ansaloni L, Catena F, Chattat R, Fortuna D, Franceschi C, Mascitti P, et al. Risk factors and incidence of postoperative delirium in elderly patients after elective and emergency surgery. The British Journal Of Surgery. 2010;97(2):273-80.
38. Inouye SK, Bogardus ST, Baker DI, Leo-Summers L, Cooney LM, Jr. The Hospital Elder Life Program: A model of care to prevent cognitive and functional decline in older hospitalized patients. Journal of the American Geriatrics Society. 2000;48(12):1697-706.
39. Mudge A, McRae P, Reade M, Donovan P, Jenkins J, Foster M, et al. Abstract from the 2015 Annual Meetings of the Western Vascular Society and Australia and New Zealand Society for Vascular Surgery: Improving Care and Outcomes for Older Vascular Surgical Patients. Journal of Vascular Surgery. 2015;62:536.
40. Radford K, Mack HA, Draper B, Chalkley S, Delbaere K, Daylight G, et al. Comparison of Three Cognitive Screening Tools in Older Urban and Regional Aboriginal Australians. Dementia And Geriatric Cognitive Disorders. 2015;40(1-2):22-32.
41. Radford K, Mack HA, Draper B, Chalkley S, Daylight G, Cumming R, et al. Prevalence of dementia in urban and regional aboriginal Australians. Alzheimer's & Dementia: The Journal of the Alzheimer's Association. 2015;11(3):271-9.
42. Borson S, Scanlan J, Brush M, Vitaliano P, Dokmak A. The mini-cog: a cognitive 'vital signs' measure for dementia screening in multi-lingual elderly. International Journal Of Geriatric Psychiatry. 2000;15(11):1021-7.
43. Brodaty H, Connors MH, Loy C, Teixeira-Pinto A, Stocks N, Gunn J, et al. Screening for Dementia in Primary Care: A Comparison of the GPCOG and the MMSE. Dementia And Geriatric Cognitive Disorders. 2016;42(5-6):323-30.
44. Kim S, Brooks AK, Groban L. Preoperative assessment of the older surgical patient: honing in on geriatric syndromes. Clinical Interventions In Aging. 2014;10:13-27.
45. Scandrett KG, Zuckerbraun BS, Peitzman AB. Operative risk stratification in the older adult. The Surgical Clinics Of North America. 2015;95(1):149-72.
46. Watt J, Tricco AC, Talbot-Hamon C, Pham B, Rios P, Grudniewicz A, et al. Identifying older adults at risk of harm following elective surgery: a systematic review and meta-analysis. BMC Medicine. 2018;16(1):2-.
47. Min L, Hall K, Finlayson E, Englesbe M, Palazzolo W, Chan C-L, et al. Estimating Risk of Postsurgical General and Geriatric Complications Using the VESPA Preoperative Tool. JAMA Surgery. 2017;152(12):1126-33.
48. Oresanya LB, Lyons WL, Finlayson E. Preoperative assessment of the older patient: a narrative review. JAMA. 2014;311(20):2110-20.

49. Morris N, Stewart S, Riley M, Maguire G. The Indigenous Australian Malnutrition Project: the burden and impact of malnutrition in Aboriginal Australian and Torres Strait Islander hospital inpatients, and validation of a malnutrition screening tool for use in hospitals-study rationale and protocol. SpringerPlus. 2016;5(1):1-10.
50. Ferguson M, Capra S, Bauer J, Banks M. Development of a valid and reliable malnutrition screening tool for adult acute hospital patients. Nutrition. 1999;15(6):458-64.
51. van Bokhorst-de van der Schueren MAE, Guaitoli PR, Jansma EP, de Vet HCW. Nutrition screening tools: Does one size fit all? A systematic review of screening tools for the hospital setting. Clinical Nutrition. 2014;33(1):39-58.
52. Cascio BL, Logomarsino JV. Evaluating the effectiveness of five screening tools used to identify malnutrition risk in hospitalized elderly: A systematic review. Geriatric Nursing. 2018;39(1):95-102.
53. Morris NF, Stewart S, Riley MD, Maguire GP. The burden and nature of malnutrition among patients in regional hospital settings: A cross-sectional survey. Clinical Nutrition ESPEN. 2018;23:1-9.
54. Schouten K, Lindeman MA, Reid J. Nutrition and older Indigenous Australians: Service delivery implications in remote communities. A narrative review. Australasian Journal on Ageing. 2013;32(4):204-10.
55. Wu M-L, Courtney MD, Shortridge-Baggett LM, Finlayson K, Isenring EA. Validity of the Malnutrition Screening Tool for Older Adults at High Risk of Hospital Readmission. Journal of Gerontological Nursing. 2012;38(6):38-45.
56. Marshall S, Young A, Isenring E. The Malnutrition Screening Tool in Geriatric Rehabilitation: A Comparison of Validity When Completed by Health Professionals With and Without Malnutrition Screening Training Has Implications for Practice. Journal Of The Academy Of Nutrition And Dietetics. 2018;118(1):118-24.
57. Di Bella A, Blake C, Young A, Pelecanos A, Brown T. Reliability of Patient-Led Screening with the Malnutrition Screening Tool: Agreement between Patient and Health Care Professional Scores in the Cancer Care Ambulatory Setting. Journal Of The Academy Of Nutrition And Dietetics. 2018.
58. Weimann A, Braga M, Carli F, Higashiguchi T, Hübner M, Klek S, et al. ESPEN guideline: Clinical nutrition in surgery. Clinical Nutrition (Edinburgh, Scotland). 2017;36(3):623-50.
59. Lin H-S, Watts JN, Peel NM, Hubbard RE. Frailty and post-operative outcomes in older surgical patients: a systematic review. BMC Geriatrics. 2016;16(1):157-.
60. Makary MA, Segev DL, Pronovost PJ, Syin D, Bandeen-Roche K, Patel P, et al. Frailty as a predictor of surgical outcomes in older patients. Journal Of The American College Of Surgeons. 2010;210(6):901-8.
61. Dasgupta M, Rolfson DB, Stolee P, Borrie MJ, Speechley M. Frailty is associated with postoperative complications in older adults with medical problems. Archives of Gerontology and Geriatrics. 2009;48:78-83.
62. Sepehri A, Beggs T, Hassan A, Rigatto C, Shaw-Daigle C, Tangri N, et al. Perioperative management: The impact of frailty on outcomes after cardiac surgery: A systematic review. The Journal of Thoracic and Cardiovascular Surgery. 2014;148:3110-7.
63. Jung P, Pereira MA, Hiebert B, Song X, Rockwood K, Tangri N, et al. Perioperative management: The impact of frailty on postoperative delirium in cardiac surgery patients. The Journal of Thoracic and Cardiovascular Surgery. 2015;149:869-75.e2.
64. Hewitt J, Moug SJ, Middleton M, Chakrabarti M, Stechman MJ, McCarthy K. Clinical Science: Prevalence of frailty and its association with mortality in general surgery. The American Journal of Surgery. 2015;209:254-9.
65. Fagard K, Leonard S, Deschodt M, Devriendt E, Wolthuis A, Prenen H, et al. Review article: The impact of frailty on postoperative outcomes in individuals aged 65 and over undergoing elective surgery for colorectal cancer: A systematic review. Journal of Geriatric Oncology. 2016;7:479-91.
66. Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J, et al. Frailty in older adults: evidence for a phenotype. Journals of Gerontology Series A: Biological Sciences & Medical Sciences. 2001;56(3):M146-M56.
67. Mitnitski AB, Mogilner AJ, Rockwood K. Accumulation of deficits as a proxy measure of aging. Thescientificworldjournal. 2001;1:323-36.
68. Rockwood K, Rockwood MRH, Mitnitski A. Physiological redundancy in older adults in relation to the change with age in the slope of a frailty index. Journal Of The American Geriatrics Society. 2010;58(2):318-23.
69. Rolfson DB, Majumdar SR, Tsuyuki RT, Tahir A, Rockwood K. Validity and reliability of the Edmonton Frail Scale. Age & Ageing. 2006;35(5):526-9.

70. Rockwood K, Song X, MacKnight C, Bergman H, Hogan DB, McDowell I, et al. A global clinical measure of fitness and frailty in elderly people. CMAJ: Canadian Medical Association Journal = Journal De L'association Medicale Canadienne. 2005;173(5):489-95.
71. Dent E, Kowal P, Hoogendijk EO. Frailty measurement in research and clinical practice: A review. European Journal of Internal Medicine. 2016;31:3-10.
72. Gregorevic KJ, Hubbard RE, Lim WK, Katz B. The clinical frailty scale predicts functional decline and mortality when used by junior medical staff: a prospective cohort study. BMC Geriatrics. 2016;16:117-.
73. Hubbard RE, Peel NM, Scott IA, Martin JH, Smith A, Pillans PI, et al. Polypharmacy among inpatients aged 70 years or older in Australia. The Medical Journal Of Australia. Australia: Australasian Medical Publishing Co; 2015. p. 373-7.
74. Elliott RA, C. Booth J. Problems with medicine use in older Australians: a review of recent literature. Journal of Pharmacy Practice & Research. 2014;44(4):258-71.
75. Manias E, Kusljic S, Lam D-L. Use of the Screening Tool of Older Persons' Prescriptions (STOPP) and the Screening Tool to Alert doctors to the Right Treatment (START) in hospitalised older people. Australasian Journal on Ageing. 2015;34(4):252-8.
76. Patterson SM, Cadogan CA, Kerse N, Cardwell CR, Bradley MC, Ryan C, et al. Interventions to improve the appropriate use of polypharmacy for older people. The Cochrane Database Of Systematic Reviews. 2014(10):CD008165.
77. Gnjidic D, Hilmer SN, Blyth FM, Naganathan V, Waite L, Seibel MJ, et al. Original Article: Polypharmacy cutoff and outcomes: five or more medicines were used to identify community-dwelling older men at risk of different adverse outcomes. Journal of Clinical Epidemiology. 2012;65:989-95.
78. Hill-Taylor B, Sketris I, Hayden J, Byrne S, O'Sullivan D, Christie R. Application of the STOPP/ START criteria: a systematic review of the prevalence of potentially inappropriate prescribing in older adults, and evidence of clinical, humanistic and economic impact...Screening Tool of Older Person's potentially inappropriate Prescriptions... Screening Tool to Alert doctors to the Right Treatment. Journal of Clinical Pharmacy & Therapeutics. 2013;38(5):360-72.
79. Ryan C, O'Mahony D, Byrne S. Application of STOPP and START criteria: interrater reliability among pharmacists. The Annals Of Pharmacotherapy. 2009;43(7):1239-44.
80. Lukaszyk C, Harvey L, Sherrington C, Keay L, Tiedemann A, Coombes J, et al. Risk factors, incidence, consequences and prevention strategies for falls and fall-injury within older indigenous populations: a systematic review. Australian And New Zealand Journal Of Public Health. 2016;40(6):564-8.
81. Hamrosi K, Taylor SJ, Aslani P. Issues with prescribed medications in Aboriginal communities: Aboriginal health workers' perspectives. Rural And Remote Health. 2006;6(2):557-.
82. Welsh TJ, Gordon AL, Gladman JR. Comprehensive geriatric assessment--a guide for the non-specialist. International Journal Of Clinical Practice. 2014;68(3):290-3.
83. Partridge JSL, Harari D, Martin FC, Dhesi JK. The impact of pre-operative comprehensive geriatric assessment on postoperative outcomes in older patients undergoing scheduled surgery: a systematic review. Anaesthesia. 2014;69 Suppl 1:8-16.
84. Harari D, Hopper A, Dhesi J, Babic-Illman G, Lockwood L, Martin F. Proactive care of older people undergoing surgery ('POPS'): designing, embedding, evaluating and funding a comprehensive geriatric assessment service for older elective surgical patients. Age And Ageing. 2007;36(2):190-6.
85. Partridge JSL, Harari D, Martin FC, Peacock JL, Bell R, Mohammed A, et al. Randomized clinical trial of comprehensive geriatric assessment and optimization in vascular surgery. The British Journal Of Surgery. 2017;104(6):679-87.
86. Eamer G, Saravana-Bawan B, van der Westhuizen B, Chambers T, Ohinmaa A, Khadaroo RG. Economic evaluations of comprehensive geriatric assessment in surgical patients: a systematic review. The Journal Of Surgical Research. 2017;218:9-17.
87. Van Grootven B, Flamaing J, Dierckx De CasterlÉ B, Dubois C, Fagard K, Herregods M-C, et al. Effectiveness of in-hospital geriatric co-management: a systematic review and meta-analysis. Age & Ageing. 2017;46(6):903.
88. Levett DZH, Grocott MPW. Cardiopulmonary exercise testing, prehabilitation, and Enhanced Recovery After Surgery (ERAS). Canadian Journal Of Anaesthesia = Journal Canadien D'anesthesie. 2015;62(2):131-42.

89. Cabilan CJ, Hines S, Munday J. The effectiveness of prehabilitation or preoperative exercise for surgical patients: a systematic review. JBI Database Of Systematic Reviews And Implementation Reports. 2015;13(1):146-87.
90. Moran J, Guinan E, McCormick P, Larkin J, Mockler D, Hussey J, et al. The ability of prehabilitation to influence postoperative outcome after intra-abdominal operation: A systematic review and meta-analysis. Surgery. 2016;160(5):1189.
91. Australian Commission on Safety and Quality in Health Care. Osteoarthritis of the Knee Clinical Care Standard. Sydney: ACSQHC; 2017.
92. Alvarez-Nebreda ML, Bentov N, Urman RD, Setia S, Huang JC-S, Pfeifer K, et al. Recommendations for preoperative management of frailty from the Society for Perioperative Assessment and Quality Improvement (SPAQI). Perioperative Care and Operating Room Management. 2018;10:1-9.
93. Brännström F, Bjerregaard JK, Winbladh A, Nilbert M, Revhaug A, Wagenius G, et al. Multidisciplinary team conferences promote treatment according to guidelines in rectal cancer. Acta Oncologica. 2015;54(4):447-53.
94. Shelby-James TM, Butow P, Davison G, Currow DC. Case conferences in palliative care - a substudy of a cluster randomised controlled trial. Australian Family Physician. 2012;41(8):608-12.
95. King MA, Roberts MS. Multidisciplinary case conference reviews: improving outcomes for nursing home residents, carers and health professionals. Pharm World Sci. 2001;23(2):41-5.
96. Grant EV, Skolnick AH, Chodosh J, Perskin MH, Orr NM, Blaum C, et al. Improving Care Using a Bidirectional Geriatric Cardiology Consultative Conference. Journal Of The American Geriatrics Society. 2018.
97. Selwood A, Senthuran S, Blakely B, Lane P, North J, Clay-Williams R. Improving outcomes from high-risk surgery: a multimethod evaluation of a patient-centred advanced care planning intervention. BMJ Open. 2017;7(2):e014906-e.

Advisory Group

Title	First Name	Surname	Organisation	
Dr.	Aisling	Fleury	MSHS	Project Lead,Geriatrician
Adjunct Professor	Alison	Mudge	SOPHCN	Clinical Director Research and Education Internal Medicine and Aged Care
Ms	Sandra	Lenehan	SWAPNet	Executive Director Specialty and Procedural Services
Dr	Owain	Evans	SWAPNet	A/Deputy Director Anaesthesia & Perioperative Medicine
Dr	Carl	Lisec	SAC	General Surgeon
Dr	John	North	SAC	Orthopaedic Surgeon/ Clinical Director QASM
Ms	Candice	Sadler	MSHS	Nurse Unit Manager
Ms	Shelley	Haydon	MSHS	Project Officer

Advisory Group Meeting Schedule

27 February 2018
20 March 2018
17 April 2018
12 June 2018

*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 Metro South Cultural Capability Officer
Adjunct Professor Alison Mudge - SOPHCN
Professor Ben White – Director, Australian Centre for Health Law Research
Ms Sabrina Palham – CNC MSPCS
Mr Antonio Martinez Ortiz – CNC Renal Improvement Project
Ms Susan Ko – Senior Dietitian
Ms Chai Gaik Yeoh – Pharmacist
Associate Professor Ruth Hubbard – SOPHCN

Appendix 1. Shared Outcome Tool

Shared Outcome Tool – for patients, family and carers

<table>
<tr><th>Ideal outcome</th><th>Agreed outcome/s</th><th>Notes on outcome/s following surgery/ procedure</th><th>Outcomes following surgery/ procedure discussed with surgeon and anaesthetist</th><th>Further Comments/ notes</th></tr>
<tr><td colspan="5">This tool records the information and agreed outcomes discussed between you, your family/carer, and treating health care team</td></tr>
<tr><td>Surgeon perspective:
e.g. reduced knee pain</td><td rowspan="2">Surgeon and patient:</td><td rowspan="4">e.g. What was the outcome?</td><td rowspan="4">Yes/No Provide details of discussion:</td><td rowspan="4">Any other notes on the surgery/procedure or patient journey [relating to outcomes]:</td></tr>
<tr><td>Patient Perspective:
e.g. I want to walk and play golf without pain.

What I am not prepared to trade/give up in considering having this procedure.</td></tr>
<tr><td>Anaesthetist perspective:
e.g. reduced knee pain</td><td>Anaesthetist and patient:</td></tr>
</table>

Adapted from (11)

Appendix 2. 5 Point Abbreviated Functional Status Tool

ASSESSING BASELINE AND CURRENT FUNCTIONAL STATUS
5 Point Abbreviated Functional Status
Ask the patient the following four questions: 1. *Can you get out of bed or chair yourself?* 2. *Can you dress yourself?* 3. *Can you bathe yourself?* 4. *Can you make your own meals?* 5. *Can you do your own shopping?*
Interpretation of Functional Screening Tests
• If the patient answers **NO** to any of the above questions, a more in-depth evaluation should be performed, including full screening of basic ADLS and IADLS. • Identified deficits should be documented and may prompt perioperative interventions – such as referral to occupational therapists and proactive discharge planning.

Adapted from (23, 47)

Appendix 3. Malnutrition Action Flow Chart

Logan Hospital Surgical Outpatient Malnutrition Screening

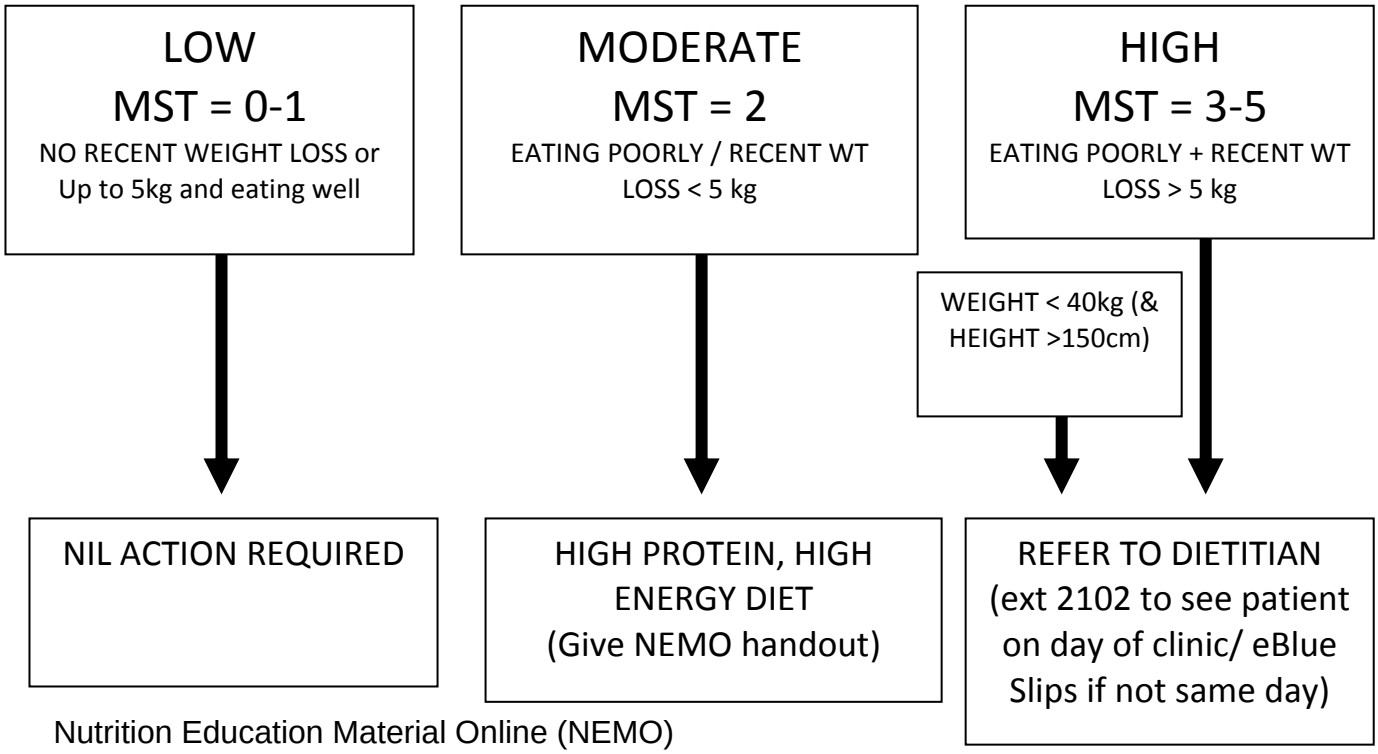
Malnutrition Screening Tool

A. Have you lost weight recently without trying? (last 6 months)	No	0
	Unsure	2
	Yes,	
If yes, how much weight?	1-5kg	1
	6-10kg	2
	11-15kg	3
	>15kg	4
B. Have you been eating poorly because of a decreased appetite?	Yes	1
	No	0
	Total Score (A+B):	

Weight Conversions: 1 kg = 2.2 pounds 1 stone = 14 pounds = 6.5 kg

(Development of a valid and reliable malnutrition screening tool for adult acute hospital patients. Ferguson M, Capra S, Bauer J and Banks M. Nutrition 15:458-464. 1999)

Malnutrition Screening Tool Score:



Nutrition Education Material Online (NEMO)
https://www.health.qld.gov.au/nutrition/nemo_nutrsup
Quick Tips for a High Protein High Energy Diet
High Protein High Energy Drink

Appendix 4. Clinical Frail Scale

Clinical Frailty Scale

1 Very fit

People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 Well

People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.

3 Managing well

People whose medical problems are well controlled, but are not regularly active beyond routine walking.

4 Vulnerable

While not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed up", and/or being tired during the day.

5 Mildly frail

These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 Moderately frail

People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.

7 Severely frail

Completely dependent for personal care, from whatever cause physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 Very severely frail

Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9 Terminally ill

Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.

K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people.
Courtesy of Geriatric Medicine Research, Dalhousie University

SCORING FRAILTY IN PEOPLE WITH DEMENTIA

The degree of frailty corresponds to the degree of dementia.
Common symptoms in mild dementia include: forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In moderate dementia, recent memory is very impaired, even though they seemingly can remember their past life events well.
They can do personal care with prompting.
In severe dementia, they cannot do personal care without help.

Queensland Government

Metro North Health Service

COOPERATE

If you have any questions regarding this document or if you have a suggestion for improvements, please contact:
Clinical Excellence Division, Department of Health
GPO Box 48, Brisbane QLD 4001
Aisling.Fleury@health.qld.gov.au