The percentage of Canadians over age 75 is increasing.
“Why is it acceptable care if the physical therapist doesn’t come every day but not acceptable care if antibiotics are not given daily? Is it acceptable to miss meals all day waiting for procedures that are often cancelled? Why do the alarms go off in the patient’s room if it is the nurse who should be notified? For debilitated patients, why can’t testing and procedures be done in the afternoon, so the mornings and evenings can be used for physical therapy, optimizing nutrition, self-care, rest, and time with family? Why does medical treatment trump recovery?”

“...why is it acceptable care if the physical therapist doesn’t come every day but not acceptable care if antibiotics are not given daily? Is it acceptable to miss meals all day waiting for procedures that are often cancelled? Why do the alarms go off in the patient’s room if it is the nurse who should be notified? For debilitated patients, why can’t testing and procedures be done in the afternoon, so the mornings and evenings can be used for physical therapy, optimizing nutrition, self-care, rest, and time with family? Why does medical treatment trump recovery?”

THE COMPREHENSIVE GERIATRIC ASSESSMENT

A comprehensive geriatric assessment (CGA) is a multidimensional, interdisciplinary diagnostic process to determine the medical, psychological, and functional capabilities of a frail elderly person in order to develop a coordinated and integrated plan for treatment and long-term follow-up.

The 5 M’s

![5 M’s](image)

NNT = 33
to have one more older adult survive and return home at discharge.

![CGA Diagram](image)

**GA ≠ CGA**

1. SCREENING
2. ASSESSMENT
3. GOAL-DIRECTED INTERVENTION
4. FOLLOW-THROUGH

Cochrane Database Syst Rev. 2017;CD012485

“older people who received CGA probably have lower risk of dying, and that after discharge, were more likely to return to the same location they lived in before hospital admission”


**PROACTIVE CGA**

- **CASE FINDING**
  - Case finding is done SYSTEMATICALLY based on pre-defined criteria and processes.
- **EARLY**
  - Involvement is early — before treatment decisions are made.
- **PREVENTION**
  - Focus on prevention of geriatric syndromes.
- **DIRECT**
  - Recommendations are implemented directly.

Values-based assessment
Surgical risk assessment
Geriatric risk assessment
Anesthesia
Pre-habilitation
Perioperative Nausea
Medical optimization
Geriatric optimization
Perioperative Analgesia
Post-operative
Discharge
Care Transitions

PROACTIVE Comprehensive Geriatric Assessment
1. **Pre-operative Comprehensive Geriatric Assessment**

2. **PROACTIVE Comprehensive Geriatric Assessment**

3. **ASSESS CAPACITY**

To Make Treatment Decisions

a) “understand” the information that is relevant to making a decision about the treatment, and
b) “appreciate” the reasonably foreseeable consequences of a decision or lack of decision.

4. **VALUES BASED ASSESSMENT**

   - **01** Establish a substitute decision maker (SDM)
   - **02** Discuss goals and preferences
   - **03** Document code status and consider suspension of existing DNR orders for the perioperative period

5. **PRE-OPERATIVE HARMONIZATION**

   - **1**

6. **PRE-OP CHECKLIST**

   1. Determine goals and expectations.
   2. Assess cognitive ability and capacity to understand anticipated surgery.
   3. Screen for depression.
   4. Identify and manage risk factors for delirium.
   5. Screen for substance dependence.
   7. Determine frailty.
   8. Screen for nutritional status and offer interventions.
   9. Determine support system.
   10. Order appropriate diagnostic tests.
   11. Perform a preoperative cardiac evaluation.
   12. Perform a preoperative pulmonary evaluation and implement optimization strategies.
   13. Take a medication history and make any appropriate perioperative adjustments.

7. **WHAT MATTERS TO YOU?**

Moving from “What is the matter?”
**PRE-OPERATIVE HARMONIZATION**

1. VALUES BASED ASSESSMENT
2. SURGICAL RISK ASSESSMENT
3. GERIATRIC RISK ASSESSMENT

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**PRE-OP FRAILTY**

A STATE WITH HIGH VULNERABILITY TO ADVERSE HEALTH CARE OUTCOMES

---

**MORTALITY**

Pre-op frailty is associated with increased 30-day mortality (OR 1.4 to 8.33) and 1-year mortality (OR 1.1 to 4.97).

**POST-OP COMPLICATIONS**

Pre-op frailty is associated with increased postoperative complications (OR 1.5 to 4.6).

**ADVERSE DISCHARGE**

Pre-op frailty is associated with longer length of stay and discharge to long-term care.

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**Clinical Frailty Scale**

1. Very fit - People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fewest for their age.
2. Well - People who have no active disease symptoms but are not fit. Typically, they take one or more medications and may have limited activity.
3. Malignant Illness - People who have major medical problems or are severely limited in their activity and have a very low survival rate.
4. Vulnerable - People who are dependent on others for daily help, often require symptomatic or intervention.
5. Malignant Frustrations - People who often have more chronic symptoms and need help but are not fit. Typically, they require intervention.
6. Mortality Frustration - People who need help with all normal activities and have limited life expectancy.

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**One Last Question Before the Operation: Just How Fraid Are You?**

_Foto Nan_  

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**BMC Geriatrics (2016) 16:157**
TIMED UP AND GO

This single item surrogate to identify frailty correlates to both postoperative complications and 1-year mortality.

PRE-OPERATIVE HARMONIZATION

1. VALUES BASED ASSESSMENT
2. SURGICAL RISK ASSESSMENT
3. GERIATRIC RISK ASSESSMENT

THERAPEUTIC HARMONIZATION

ALIGNING PROGNOSIS AND GOALS WITH CARE.

MEDICAL OPTIMIZATION

- Smoking Cessation
- Cardiac and Pulmonary Optimization
- Medication Management

Values-based assessment
Surgical risk assessment
Geriatric risk assessment

Pre-operative Intra-operative Post-operative Discharge

PROACTIVE Comprehensive Geriatric Assessment
**PULMONARY**

**THROMBOEMBOLISM**

**ANTIMICROBIAL**

**DIABETES**

**CARDIOVASCULAR**

**NUTRITION**

**ADMINISTRATION**
Administer the CAGE Questionnaire.
If motivated, delay surgery for abstinence or detoxification.
If at risk, give perioperative prophylaxis for withdrawal syndromes.
In alcohol use disorder, give perioperative daily multivitamin and high-dose thiamine.

**COGNITIVE IMPAIRMENT**
1. INQUIRE. Ask informants about any cognitive decline.
2. TEST. Perform an assessment such as the Mini-Cog. If abnormal, then further evaluation.
3. DOCUMENT. Documentation of preoperative cognitive status helps to quantify postoperative cognitive dysfunction.
**IDENTIFY POST-OP DELIRIUM RISK**

Age > 65, cognitive impairment, severe illness, hearing or vision impairment, presence of infection, inadequately controlled pain, depression, alcohol use, sleep deprivation or disturbance, renal insufficiency, anemia, hypoxia or hypercarbia, poor nutrition, dehydration, electrolyte abnormalities, poor functional status, limited mobility, use of psychotropic medications, risk of urinary retention of constipation, presence of urinary catheter, aortic procedures.

**DELIRIUM PREVENTION TIP**

Counsel and empower the patient and family on evidence-based delirium prevention measures.

NNT = 13

**PERFORMANCE STATUS**

Deficits should prompt proactive discharge planning and referrals to allied health.

Values-based assessment
Surgical risk assessment
Geriatric risk assessment

**PHQ-2**

**Depression**

If screen is positive, then further evaluation is recommended.

In the past 12 months, have you ever had a time when you felt sad,blue, depressed, or down for most of the time for at least 2 weeks?

In the past 12 months, have you ever had a time, lasting at least 2 weeks, when you didn't care about the things that you usually cared about or when you didn't enjoy the things that you usually enjoyed?
**Prehabilitation**

Increase functional capacity in anticipation of an upcoming stress.

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**PREOPERATIVE inspiratory muscle training**

Reduces atelectasis and pneumonia
RR 0.53, 95% CI 0.34 to 0.82

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**PREHABILITATION**

A 1-month trimodal program improves post-op functional recovery.

- **NUTRITIONAL SUPPORT**
- **EXERCISE TRAINING**
- **ANXIETY SUPPORT**

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**Values-based assessment**

- Surgical risk assessment
- Geriatric risk assessment

**Pre-habilitation**

- Pre-operative
- Intra-operative
- Post-operative
- Discharge

**Medical optimization**

**Geriatric optimization**

**PROACTIVE Comprehensive Geriatric Assessment**
NNT=16

using the processed EEG to help deliver the optimal depth of anesthesia could reduce the incidence of delirium (21.3% to 15.2%)


Values-based assessment
Surgical risk assessment
Anesthesia

Pre-operative
Intra-operative
Post-operative
Discharge

Medical optimization
Geriatric optimization

PROACTIVE Comprehensive Geriatric Assessment

PERIOPERATIVE ANALGESIA

OPIOID-SPARING

Use preoperative, intraoperative, and/or scheduled postoperative acetaminophen and/or addition of regional techniques such as neuraxial blockade or peripheral nerve block.


PERIOPERATIVE ANALGESIA

AVOID THESE

Common analgesics and anxiolytics to avoid include barbiturates, benzodiazepines, non-benzodiazepine hypnotics, meperidine, skeletal muscle relaxants, non-Cox NSAIDs.


PERIOPERATIVE ANALGESIA

BOWEL ROUTINE

include a prophylactic pharmacologic bowel regimen such as a stimulant laxative, when appropriate.


Colace: looks like a jelly bean, works like a jelly bean.
**ANTI-EMETICS**

AVOID
corticosteroids, scopolamine, metoclopramide, promethazine, dimenhydrinate, prochlorperazine

USE
5-HT3 receptor antagonists (e.g., odansetron)

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**POST-OP CHECKLIST**

1. Delirium prevention strategies
2. Multimodal, individualized acute pain control
3. Minimize pulmonary complications
4. Fall risk reduction
5. Maintain adequate nutrition
6. Urinary tract infection prevention
7. Prevent functional decline
8. Reduce pressure ulcers

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**Values-based assessment**

**Surgical risk assessment**

**Geriatric risk assessment**

**Anesthesia**

**Pre-habilitation**

**Perioperative Nausea**

**Medical optimization**

**Geriatric optimization**

**Perioperative Analgesia**

**Pre-operative**

**Intra-operative**

**Post-operative**

**Discharge**

**PROACTIVE Comprehensive Geriatric Assessment**

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**orientation strategies**

- vision and hearing aids
- sleep environment

- family participation
- uncluttered hallways
- multimodal pain control

- remove urinary catheters and other tethers
- wound care: minimize pressure, friction, humidity, shear force

- avoid potentially inappropriate medications
- resume diet early and provide dentures, if needed

- chest physiotherapy and incentive spirometry
- early, multidisciplinary involvement
- nutritional supplement, if needed

- early mobilization, using walking aids if needed
- scheduled toileting
- aspiration precautions

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**Values-based assessment**

**Surgical risk assessment**

**Geriatric risk assessment**

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**Perioperative Analgesia**

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**Discharge**

**PROACTIVE Comprehensive Geriatric Assessment**

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Antipsychotics do **NOT** shorten the duration or reduce the severity.

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**Electronic Database: Apr 2018, Jul 2018**

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Antipsychotics do **NOT** shorten the duration or reduce the severity.
COMMON COMPONENTS OF TRANSITION CARE MODELS

- Coordinated care with primary care physician
- Engagement of patient, family, and/or caregiver
- Patient-centered medical record
- Post-discharge follow up plan
- Medication management
- Knowledge of important signs and symptoms
THE IMMEDIATE CHALLENGE TO IMPROVING THE QUALITY OF SURGICAL CARE IS NOT DISCOVERING NEW KNOWLEDGE, BUT RATHER HOW TO INTEGRATE WHAT WE ALREADY KNOW INTO PRACTICE.

Enhanced Recovery Programs

The immediate challenge to improving the quality of surgical care is not discovering new knowledge, but rather how to integrate what we already know into practice.

Systematic reviews and 12 additional studies showed Enhanced Recovery After Surgery (ERAS) programs may reduce hospital stays by 0.5–3.5 days compared with conventional care.

BMJ Open 2014;4:e005015.

POP'S IN ORTHOPEDICS

- elective orthopedic surgery
- 65 years +
- before-and-after study (N=54)
  - LOS (4.9 vs 4.0 days, P=0.03)
  - delirium (19% vs 6%, P=0.036)
  - pneumonia (20% vs 4%, P=0.008)
  - urinary catheter use (20% vs 7%, P=0.046)


'POPS' IN UROLOGY

- elective and emergency urology patients
- 65 years +
- before-and-after study (N=242)
  - LOS (4.9 vs 4.0 days, P=0.03)
  - postoperative complications (RR 0.24, 95% CI 0.10–0.54, P=0.001)


PREOPERATIVE GERIATRIC ASSESSMENT IN VASCULAR SURGERY

- elective aortic aneurysm repair or lower-limb arterial surgery
- 65 years +
- RCT, N=176
  - LOS (5.5 vs 3.3 d, P<.001)
  - delirium (11% vs 24%, P=.018)
  - cardiac complications (8% vs 27%, P=.01)
  - bowel/bladder complications (33% vs 55%, P=.003)

J Orthop Trauma 2014;28:e49–e55.

HIP FRACTURE–ORTHogeriatrics

- Meta-analysis (N=242)
  - LOS (SMD −0.25)
  - In-hospital mortality (RR 0.60, 95% CI 0.42–0.84)
  - Long term mortality (RR 0.83, 95% CI 0.74–0.94)
- Systematic review (4 studies)
  - Delirium RR 0.81, 95% CI 0.69–0.94

Orthogeriatric Care Models and Outcomes in Hip Fracture Patients: A Systematic Review and Meta-Analysis

Enrolled clinical trial of comprehensive geriatric assessment and cohabitation in vascular surgery.

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Enrolled clinical trial of comprehensive geriatric assessment and cohabitation in vascular surgery.
**PROACTIVE GERIATRIC TRAUMA CONSULTATION**

- traumatic activation
- 65 years +
- before-and-after study (N=486)

- delirium (51% vs 41%, P=0.05)
- discharge to LTC (6.5% vs 1.7%, P=0.03)

*Ann Surg* 2012;256: 1098–1101

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"If you want to go fast, go alone; if you want to go far go TOGETHER"  
--- African Proverb

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**WHICH OF THE FOLLOWING IS FALSE ABOUT POSTOPERATIVE DELIRIUM?**

1. Use encephalographic monitors to measure the depth of sedation
2. Counsel family on non-pharmacologic prevention strategies
3. Use peripheral nerve blocks adductively if indicated
4. There are delirium risk stratification tools
5. Choose dexamethasone for pain management

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**PREHABILITATION SHOULD INCLUDE WHICH OF THE FOLLOWING?**

1. Aerobic exercise and resistance training
2. Anxiety support
3. Incentive spirometry
4. Glyceine optimization
5. All of the above

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**FRAILTY IS ASSOCIATED WITH WHICH OF THE FOLLOWING?**

1. 30-day mortality
2. Postoperative complications
3. Longer lengths of stay
4. Discharge to long-term care
5. All of the above
Thank you.

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