

Geriatric Preoperative Optimization: A Review



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ABSTRACT

This review summarizes best practices for the perioperative care of older adults as recommended by the American Geriatrics Society, American Society of Anesthesiologists, and American College of Surgeons, with practical implementation strategies that can be readily implemented in busy preoperative or primary care clinics. In addition to traditional cardiopulmonary screening, older patients should undergo a comprehensive geriatric assessment. Rapid screening tools such as the Mini-Cog, Patient Health Questionnaire-2, and Frail Non-Disabled Survey and Clinical Frailty Scale, can be performed by multiple provider types and allow for quick, accurate assessments of cognition, functional status, and frailty screening. To assess polypharmacy, online resources can help providers identify and safely taper high-risk medications. Based on preoperative assessment findings, providers can recommend targeted prehabilitation, rehabilitation, medication management, care coordination, and/or delirium prevention interventions to improve postoperative outcomes for older surgical patients. Structured goals of care discussions utilizing the question-prompt list ensures that older patients have a realistic understanding of their surgery, risks, and recovery. This preoperative workup, combined with engaging with family members and interdisciplinary teams, can improve postoperative outcomes.

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CLINICAL CASE

Mrs. M is a 72-year-old woman who presents to a preoperative assessment clinic in anticipation of elective laparoscopic cholecystectomy. She was hospitalized 5 weeks ago for sepsis secondary to cholecystitis due to gallstones, but given her age and degree of illness, surgery was deferred and she underwent percutaneous cholecystostomy tube placement.

Mrs. M has a past medical history significant for hypertension, prediabetes, osteoarthritis, lumbar spinal stenosis, and anxiety. She underwent tonsillectomy in childhood and bilateral cataract removal, but otherwise has no surgical history. She has never smoked and denies alcohol use. She lives alone but reports that her daughter lives an hour away and can provide occasional assistance after surgery. Her scheduled medications include: celecoxib, amlodipine, lisinopril, venlafaxine, and calcium-vitamin D supplement; she also takes as-needed acetaminophen, cyclobenzaprine, and lorazepam.

At the preoperative clinic, Mrs. M reports an exercise tolerance equivalent to 4 metabolic equivalents daily. Her cholecystostomy tube has a clean, dry insertion site and scant bilious drainage. She denies abdominal pain and is tolerating a low-fat diet. She will stop her celecoxib 1 week prior to surgery and hold her lisinopril the morning of surgery. Her intraoperative and immediate postoperative course is uncomplicated, and she is admitted overnight for observation. However, overnight she becomes agitated, attempts to get out of bed without assistance multiple times, and tries to hit her nurse. She falls and injures her left hip, requiring extra doses of pain medication. The next day, she is somnolent and cannot interact meaningfully with the surgical team. She spends another night in the hospital, marked by waxing and waning agitation, and receives intermittent doses of haloperidol. On the third hospital day, occupational and physical therapists assess the patient. Given her delirium, they contact the patient's daughter to ascertain her baseline mobility and functional status, but the daughter is uncertain, as she works full time and only sees her mother occasionally. Physical and occupational therapists find the patient significantly deconditioned, and given her low social support, they ultimately recommend the patient be discharged to a skilled nursing facility.

BACKGROUND

Over one-third of elective surgeries are performed on older adults, and this proportion will increase as the population ages.^{1,2} Older adults have higher rates of postoperative complications, readmissions, and mortality, longer length of stay, and are more frequently discharged to post-acute care facilities, compared with adults under age 65 years.³⁻⁷ A number of factors account for these higher rates of adverse events. Aging leads to a shift in expressed cytokines, producing a pro-inflammatory state that can increase the risk of postoperative complications (such as venous thromboembolism or stroke) and worsen postoperative pain, muscle loss, and fatigue.⁸ Additionally, organ systems' functioning diminishes, leading to an increased risk of complications.⁹

Older adults are also more likely to suffer from comorbid conditions and polypharmacy. Nearly 40% of adults over age 65 years are on 5 or more prescription medications.¹⁰ Polypharmacy is associated with increased rates of nonadherence, medication errors, postoperative delirium, and drug–drug interactions.^{11,12} In a study of over 260,000 older adults undergoing elective, noncardiac surgery, investigators found polypharmacy to be associated with increased postoperative mortality.¹³

Numerous cognitive and psychosocial factors also affect postoperative outcomes. Studies have shown that adults over 65 years of age have lower health literacy than younger adults.¹⁴ Cognitive impairment in older adults may also increase risk for postoperative delirium and impaired ability to follow postoperative care instructions.¹⁵ Functional and sensory deficits may likewise impair ability for self-care after surgery. Tang et al¹⁶ found that dependence in one or more activities of daily living was associated with increased risk of postoperative mortality. Older adults also have higher rates of food insecurity, increased risk of malnutrition, and may suffer from social isolation, leading to inadequate support postoperatively.¹⁷

Comprehensive geriatric assessment allows geriatric specialists to address the confluence of factors that contribute to the complexity of older adults. There is growing evidence that preoperative comprehensive geriatric assessment and geriatric co-management models successfully 1) risk-stratify patients to identify those at highest risk of complications, and 2) improve postoperative outcomes of older adults.¹⁸⁻²³ The Perioperative Optimization of Senior Health (POSH) is one such model.²⁴ POSH is a collaborative care model among Geriatrics, Surgery, and Anesthesiology, in which patients undergo multidisciplinary preoperative evaluation to identify and address both traditional and geriatric-specific preoperative risk factors. Postoperatively, in addition to routine care, patients are followed by an inpatient geriatric consult team. Compared with a matched historical group, POSH participants had significantly decreased length of stay and readmission rates, fewer postoperative complications, and were more likely to be discharged to home rather than a facility.

Despite the growing evidence of the value of geriatric co-management in perioperative care, geriatricians are a limited resource. There is a significant shortage of board-certified geriatricians in the United States compared with the number of older adults seeking care.²⁵ Further, not all geriatricians have expertise in perioperative care. This paper will summarize the best practices for preoperative care of older adults and discuss methods to promote geriatric principles within the practical limitations of busy preoperative clinics and surgical centers.

GERIATRIC PREOPERATIVE CARE

Best Practices

The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) and American

CLINICAL SIGNIFICANCE

- Preoperative comprehensive geriatric assessment can identify risks unique to older adults and provide optimization to improve outcomes.
- Rapid screening tools can be employed to assess geriatric-specific risk factors and address common geriatric syndromes, such as cognitive impairment, polypharmacy, and delirium.
- Utilizing a multidisciplinary team, leveraging family support, and utilizing appropriate screening tools can improve postoperative outcomes for older adults without significantly increasing provider burden.

Table 1 Preoperative Best Practice Guidelines for Older Adults and Implementation Strategies

Best Practice Guidelines	Implementation Strategies
Assess cognitive ability, capacity to understand the anticipated surgery	<ul style="list-style-type: none"> • Utilize a brief cognitive screening test such as the MoCA or Mini-Cog (MoCA-BLIND can be administered via telehealth) • Communicate results to PCP for longitudinal follow-up and to anesthesiologist/surgeon for risk stratification
Screen for depression	<ul style="list-style-type: none"> • Perform a brief depression screen with tools such as 2-question PHQ-2, longer instruments if initial screen is positive • Communicate results to PCP to consider management strategies with appropriate longitudinal follow-up • If patient has severe symptom burden, consider delaying surgery to optimize treatment
Identify patient's risk factors for developing postoperative delirium	<ul style="list-style-type: none"> • Use a standardized tool or template to quickly identify presence of risk factors, such as the table provided from the American College of Surgery* • Address modifiable risk factors • Provide standardized education to patients and family members directly or via prepared handouts
Screen for alcohol and other substance abuse/dependence	<ul style="list-style-type: none"> • Use a screening tool like the modified CAGE (cut down, annoyed, guilty, eye-opener) questionnaire[†] • For positive screens, consider perioperative prophylaxis for withdrawal syndromes, or potentially delaying surgery for preoperative abstinence or medical detoxification
Perform a preoperative cardiac evaluation according to the ACC/AHA [‡] algorithm	<ul style="list-style-type: none"> • Estimate functional capacity in terms of metabolic equivalents (METs), with subsequent guideline-directed assessment²⁷
Identify the patient's risk factors for postoperative pulmonary complications and implement appropriate strategies for prevention	<ul style="list-style-type: none"> • Recognize that even without pulmonary disease, older adults are at higher risk for aspiration, atelectasis, and other complications
Document functional status, falls history	<ul style="list-style-type: none"> • Can collect this information at check-in or prior to appointment via telephone call • Document this information so it can be reviewed by inpatient providers
Measure frailty	<ul style="list-style-type: none"> • Tools such as the FiND-CFS[§] rapidly screen for frailty • Frail patients may need additional evaluation, optimization prior to surgery • Surgeons and anesthesiologists should be alerted of frailty status for risk stratification
Assess nutritional status, consider preoperative interventions	<ul style="list-style-type: none"> • Utilize short screening tools such as MNA-SF • Provide standardized education encouraging protein intake • Consider referral to social work or nutritionist for at-risk patients
Take an accurate and detailed medication history, consider appropriate perioperative adjustments; monitor for polypharmacy	<ul style="list-style-type: none"> • Compare medications to the Beers list to identify high-risk medications[¶] • Consider pharmacist referral • Discontinue high-risk, infrequently used medications (eg, occasional benzodiazepines, sedatives) • Arrange PCP follow-up for more complex medication reviews • Leverage telehealth and E-consults to engage PCPs and other providers quickly

Table 1 (Continued)

Best Practice Guidelines	Implementation Strategies
Determine the patient's treatment goals and expectations	<ul style="list-style-type: none"> • Tools such as the QPL** can be provided to patients and families prior to appointments to encourage thoughtful and efficient discussion • If patients' expectations for surgery do not align with their providers', consider referral back to surgeon to clarify goals of care
Determine patient's family and social support system.	<ul style="list-style-type: none"> • Encourage presence of family member at preoperative appointment • Ask patients "Who will support you after surgery?" • Consider social work referral or delaying surgery if patients are unable to identify reliable support structure
Order appropriate preoperative diagnostic tests focused on elderly patients	<ul style="list-style-type: none"> • Hemoglobin, renal function, and albumin recommended for all older adults • Other testing should only be done with a clear indication

MoCA = Montreal Cognitive Assessment Test; PCP = primary care provider; PHQ-2 = Patient Health Questionnaire-2.

*See section I-D of "Best Practice Guidelines" for a table of risk factors for postoperative delirium.²⁶

†Modified CAGE Questionnaire.²⁸

‡American College of Cardiology/American Heart Association.²⁹

§FIND-CFS is the Frail Non-Disabled Survey and Clinical Frailty Scale.³⁰

||Mini Nutritional Assessment Short-Form.²⁷

¶Beers Criteria for Potentially Inappropriate Medication Use in Older Adults.³¹

**Question-Prompt List.³²

Geriatrics Society (AGS) jointly released best-practice guidelines for perioperative care of older adults.²⁶ Practices relevant to preoperative care are summarized in Table 1.²⁶⁻³² These emphasize assessing baseline functional status, screening for preoperative cognitive dysfunction, addressing polypharmacy, and modified goals of care discussions to reflect enhanced risk of complication.^{33,34} In 2019, in line with these guidelines, ACS launched the Geriatric Surgery Verification Program to promote surgical standards that improve the surgical care and outcomes of older adults.^{35,36}

Major limitations to these practices include time constraints and reliance on geriatric expertise. Additionally, providers in preoperative clinics may not have a longitudinal relationship with the patient. If undiagnosed cognitive disorders or psychosocial problems are identified, addressing these issues may be outside the scope of practice for preoperative clinic providers. Furthermore, providers may not feel comfortable adjusting psychotropic or other chronic, high-risk medications. However, recognizing and mitigating such risk factors is essential to optimizing the care and outcomes of older adults.

Optimized Workflow

Table 1 summarizes practical implementation tips to allow providers to incorporate principles of best practice geriatric care into a busy preoperative evaluation clinic. These ideas

are based on core principals of geriatric care, expanded upon below.

Preoperative clinical assessments are heterogeneous. Depending on the nature of the surgery, patient characteristics, and health system policies, patients may be seen by their primary care provider (PCP) or a specialist, or may simply undergo telephone screening. We advocate for in-person or synchronous telehealth preoperative evaluations for older adults, particularly for those at high risk of complications due to multimorbidity, polypharmacy, pre-existing cognitive impairment, or limited social support. Pilot data have shown that the electronic medical record can use machine-learning to identify highest-risk patients.³⁷ This is a promising tool for future risk stratification to best allocate which patients would benefit from in-person assessments.

Informed Consent

The vast majority of healthy, community-dwelling older adults have capacity for medical decision-making, but rates of incapacity are much higher in patients living in facilities and in those with cognitive impairment.³⁸ One small study found 18% of older adults presenting for elective surgery lacked capacity to consent for their upcoming procedure, and a Montreal Cognitive Assessment Test (MoCA) score ≤ 19 was highly predictive of incapacity.³⁹ Providers should be vigilant for possible diminished capacity, and utilize teach-back methods to ensure patients truly appreciate the

attendant risks and benefits of their upcoming procedure, including risks of anesthesia administration.³⁴

Identifying Frailty

Frailty is a geriatric syndrome denoting loss of physical and cognitive reserve that can be measured with multiple tools. The “accumulation of deficits” scale is a 70-item list of symptoms and disorders used to generate a clinical frailty score.⁴⁰ Alternatively, the phenotypical model describes potential deficits across 5 domains, based on patient-reported data (involuntary weight loss, self-reported exhaustion, and activity level) and objective data (grip strength, walking speed).⁴¹ Patients are categorized as robust, pre-frail, or frail. A systematic review demonstrated that regardless of how it was measured, the presence of preoperative frailty is correlated with increased length of stay, risk of complications, and postoperative mortality.⁴²

There are challenges in performing frailty assessments. For instance, grip-strength measurement requires a dynamometer,

which is not available in most clinic settings. Thus, several rapid frailty screens have been developed. The Frail Non-Disabled Survey and Clinical Frailty Scale (FiND-CFS) is a collection of patient- and clinician-reported items that was successfully deployed in a vascular surgery clinic. Patient-reported items were captured at time of check-in, and trained medical assistants assigned a frailty score utilizing the FiND-CFS.³⁰ Utilizing this or similar tools to efficiently screen for frailty allows rapid risk-stratification of patients. Patients who qualify as frail may consider follow-up with their PCP to better optimize their health prior to surgery,⁴³ as well as a nuanced goals-of-care discussion, to ensure they have realistic understanding of their surgical risks.

Leveraging Family

Family members are vital members of the patient’s care team, and with support and education, they can be empowered to improve outcomes. The [Figure](#) depicts phases of perioperative care; family involvement is important

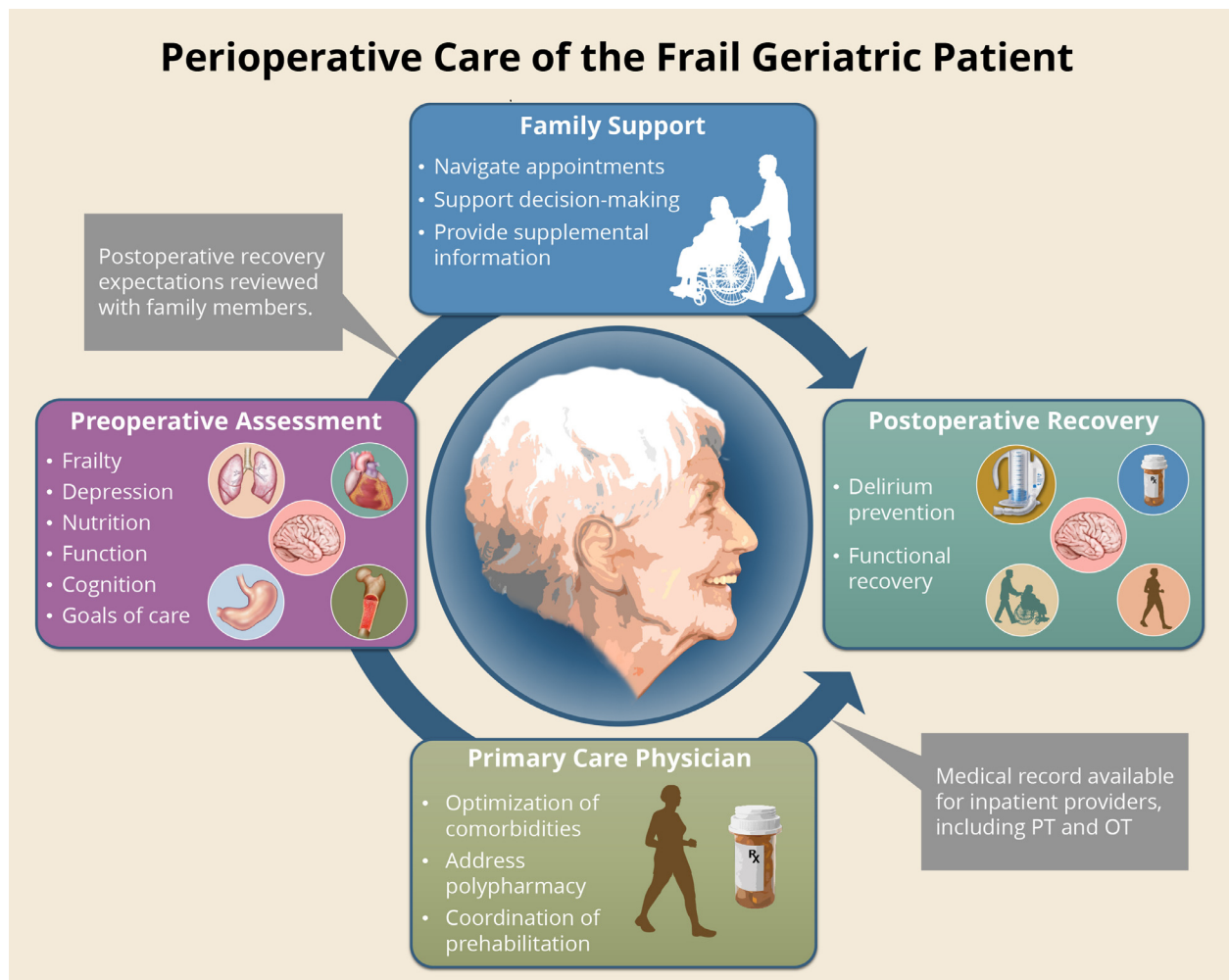


Figure Perioperative care of the geriatric patient. A comprehensive interprofessional approach to preoperative workup and postoperative care is recommended for older adults. Family caregivers can provide support throughout this process. OT = occupational therapist; PT = physical therapist.

throughout this period. The preoperative phase of care can be challenging, and may involve multiple specialists and specialized testing. Furthermore, data may not be readily transmitted between clinic settings, and preoperative instructions can be confusing or even contradictory. Older adults, especially those with functional or cognitive impairment, may rely on family members to help navigate multiple appointments, take notes, ask questions, and manage care coordination.⁴⁴ Additionally, family can provide ancillary information about cognitive or functional deficits that need to be further explored prior to surgery.⁴⁵

An important area where family can be helpful is in delirium education and management. Postoperative delirium is the most common surgical complication in older adults, and contributes to increased morbidity and mortality.⁴⁶ Families can engage the patient in cognitively stimulating activities, facilitate use of sensory aids, encourage hydration and ambulation, and enhance communication between patients and the care team.⁴⁷ In patients with baseline cognitive dysfunction, family members can identify changes from baseline that may otherwise be missed.⁴⁸

Preoperative education on recognizing delirium symptoms prepares family members to identify postoperative delirium and reduces caregiver distress.^{49,50} The Family Confusion Assessment Method⁵¹ is an adaptation of the Confusion Assessment Method,⁵² a widely-used delirium screening tool. The Family Confusion Assessment Method utilizes family members to quickly identify delirium, and has high sensitivity in hospitalized older adults.⁵³ In addition to detecting delirium, family members can also reduce delirium risk and duration. The Hospital Elder Life Program (HELP) reduces delirium incidence by targeting 5 common risk factors: cognitive impairment, sleep deprivation, immobility, sensory impairment, and dehydration.⁵⁴ Family-HELP, an adaptation of this program, engages family caregivers in delirium prevention through their participation in the portions of the HELP protocol.⁵⁵

Less structured family engagement programs have also been successful. One hospital showed reduced delirium incidence by educating families, engaging them to help with sensory impairments and reorientation, and placing familiar objects from home in the room.⁵⁶ It is essential to promote family members as essential part of the care teams, and whenever possible, encourage a bedside presence in the perioperative period.⁵⁷

Family members can also be engaged in postoperative mobility programs to reduce the risk of functional decline and loss of independence. Even a program as simple as daily ambulation can reduce the need for discharge to rehabilitation facilities.⁵⁸ Tailored Family-Involved HELP, based on the HELP, enlisted family members to reduce postoperative delirium and functional decline. Family members were educated and supervised by nurses, and implemented an early mobilization protocol, leading to significantly less postoperative functional decline.⁵⁹

Family members' involvement is also helpful when planning for postoperative recovery. Many older adults will need

support after surgery, and it is helpful to prepare caregivers in advance. Qualitative interviews with patients and families suggest that patients may not be fully prepared for their postoperative course and may be surprised by the length and intensity of recovery.^{44,60} By engaging them in discussions prior to surgery, family members can better anticipate postoperative needs and develop realistic expectations. Such discussions allow patients and family members to be proactive in, for example, identifying and arranging for postoperative needs, including researching potential rehabilitation facilities; and arranging to take leave from work.

Utilizing a Multidisciplinary, Interprofessional Team

A cornerstone of geriatric care, interprofessional collaborative practice is defined as multiple health workers from different professional backgrounds working together with patients and families. Engaging an interprofessional care team relieves time and administrative burden on individual providers, allows enhanced information dissemination, and can improve the quality and safety of clinical care.⁶¹ With appropriate training, medical or nursing assistants can gather essential information, and trained nurse specialists or advanced practice providers can provide standardized education about geriatric-specific topics, such as delirium prevention, advanced care planning, and postoperative rehabilitation expectations. When available, social workers can help to address issues common to older adults, such as isolation, food insecurity, or transportation. Registered dietitians can address malnutrition, or risk thereof, and be a valuable educational resource. Similarly, pharmacists can provide key guidance in managing polypharmacy. In cases of complex polypharmacy, unoptimized comorbidities, or concerns that the patient's expectations for surgery do not align with those of their provider, patients should be referred back to their PCP or referring surgeon.

Scheduling appointments at least a week prior to surgery allows time to address issues arising during preoperative assessments. Additionally, this allows engagement in prehabilitation, a strategy to begin rehabilitation prior to surgery. Prehabilitation programs are heterogeneous and may include physical, occupational, speech, or respiratory therapy, for strength training exercises, respiratory muscle training, cognitive training, or identified other skilled services.⁶²⁻⁶⁴ Prehabilitation may help reduce postoperative complications, decrease patients' degree of frailty, and improve psychological and social factors that impact recovery.⁶⁵⁻⁶⁸ For example, in a randomized trial comparing the use of a 4-stage prehabilitative program (physical therapy, pulmonary rehabilitation, nutritional optimization, and stress reduction) to usual care for major abdominal surgery patients, the prehabilitation program significantly reduced rates of postoperative complications and led to significant cost savings.⁶⁸

Understanding Available Resources

The ACS-NSQIP/American Geriatrics Society guidelines⁴⁵ include guidance on how to perform recommended

Table 2 Resources Available for Assessment and Optimization of Geriatric Patients

Clinical Need	Available Resources	Description
Cognitive screening	Mini-Cog	<5-min administration time. Publicly available.
	MoCA	Requires training to administer, 10-15 min administration time.
	MoCA-BLIND	Requires training to administer. Can be utilized in telehealth platforms.
Depression screening	PHQ-2	2-question screening tool. Patients who screen positive require additional evaluation (e.g. PHQ-9).
Functional assessment	Short Simple Screening Test for Functional Assessment	4-item screening questionnaire. Patients who answer "No" to one or more item need full assessment of ability to perform activities of daily living, instrumental activities of daily living.
Polypharmacy	AGS BEERS List	List of potentially inappropriate medications for older adults, from the American Geriatrics Society
	Deprescribing.Org*	Free online resource with provider and patient educational resources to assist in describing
Addressing goals and expectations	The Surgical Question Prompt List†	Free online toolkit for patients, families containing 3 question prompt categories to review prior to medical appointments.
	Prepare for Your Care‡	Free online resources for patients, families to discuss and prepare advanced directives.
Increasing support at home or in the community	Area Agency on Aging§	Regional, non-profit agencies maintained with state and federal funding to coordinate and offer support to help older adults remain in their homes.

AGS = American Geriatric Society; MoCA = Montreal Cognitive Assessment Test; PHQ-2 = Patient Health Questionnaire-2.

*Accessed on January 18, 2021 at www.deprescribing.org.

†Accessed on January 18, 2021 at <https://www.hipxchange.org/SurgicalQPL>.

‡Accessed on September 3, 2020 at www.prepareforyourcare.org

§Accessed on February 9, 2021 at https://eldercare.acl.gov/Public/About/Aging_Network/AAA.aspx

assessments. Additionally, there are a variety of free, available resources for patients and providers to help perform assessments and optimize perioperative care. These resources are summarized in [Table 2](#).^{60,69-73}

REVISIT CASE

We can reimagine the care of Mrs. M from the preoperative timepoint utilizing principles outlined in this paper. Key points are summarized in [Table 3](#).^{27,30,32,70} Prior to Mrs. M's appointment, a clinical nurse specialist from the preoperative clinic contacted the patient. In a 10-minute phone call, the nurse confirmed Mrs. M's medications, including dosage and frequency. She found out Mrs. M takes lorazepam for sleep approximately 3 nights per week. She also collected information about the patient's preoperative functional status using a standardized flowsheet. With the patient's permission, the clinical nurse specialist contacted the patient's daughter to request she attend the preoperative appointment.

During the visit, as part of the check-in process, the medical assistant performs a MoCA examination and Mrs. M scores a 22/30, consistent with mild cognitive impairment. The results of the MoCA are entered into the electronic medical record and will be included as part of the preoperative visit summary sent to the patient's surgeon, anesthesiologist, and PCP. The medical assistant performs a rapid frailty screen using the FiND-CFS and provides the patient and her daughter a handout on delirium, then educates the daughter to be available at bedside after surgery.

Mrs. M is instructed to stop her celecoxib 1 week prior to surgery and hold her lisinopril the morning of surgery. Because she takes her lorazepam infrequently, she is also instructed to stop this medication prior to surgery. She is on a number of other high-risk medications per the BEERS list, so she is referred back to her PCP, and schedules an urgent virtual visit for further medication review.

During the preoperative evaluation, Mrs. M and her provider discuss expectations for surgery. She is able to

Table 3 Modified Clinical Work Flow for Mrs. M.'s Preoperative Assessment

Modified Clinical Work Flow: Mrs. M		
Phase of Care	Suggested Tasks	Mrs. M's Experience
Pre-appointment phone screen by clinical nurse specialist	<ul style="list-style-type: none"> • Confirmation of medication list • Functional status questionnaire 	<ul style="list-style-type: none"> • Daughter was contacted and encouraged to accompany the patient to her preoperative clinic appointment
Check-in with front desk staff	<ul style="list-style-type: none"> • Screening questionnaires administered 	<ul style="list-style-type: none"> • Mrs. M completes the patient portion of the FiND-CFS* frailty screen <ul style="list-style-type: none"> ◦ She is independent in all ADLs ◦ She requires assistance with housework and driving • Screening assessment is entered into the medical record so it is available for inpatient providers, including PT and OT
Medical assistant completes screening assessments	<ul style="list-style-type: none"> • Clinician portion of the FiND-CFS • MoCA • PHQ-9 	<ul style="list-style-type: none"> • FiND-CFS score is in the "robust" range • MoCA score is 22/30, mild cognitive impairment • Surgical and anesthesia teams are notified of increased delirium risk • PCP is provided results to further evaluate cognitive changes postoperatively • PHQ-9 score is 2, mild depression
Provider assessment	<ul style="list-style-type: none"> • Discuss delirium risk factors and prevention strategies • Cardiac/functional assessment • Mini-Nutritional Assessment (MNA)[‡] • Medication counseling • Use the QPL[§] to review expectations for surgery 	<ul style="list-style-type: none"> • Mrs. M's daughter plans to be at bedside during postoperative recovery • She walks 1 mile daily; no further cardiac workup required • MNA screening in normal range; receives education on protein intake and hydration • Chronic high-risk medications are reviewed; she is referred to her PCP for deprescribing • Expectations for surgery and recovery are discussed and consistent with likely outcomes • Mrs. M identifies her daughter as her postoperative caregiver and surrogate decision-maker. They are provided instructions to complete DPOA paperwork

ADLs = activities of daily living; MoCA = Montreal Cognitive Assessment Test; OT = occupational therapist; PCP = primary care provider; PT = physical therapist.

*FiND-CFS is the Frail Non-Disabled Survey and Clinical Frailty Scale.³⁰

† Patient Health Questionnaire-2.⁷⁰

‡ Mini Nutritional Assessment Short-Form.²⁷

§ Question-Prompt List.³²

clearly state that she wants her cholecystostomy tube removed, that she found the episode of cholecystitis painful and traumatic, and that she would not want to go through it again. She understands her age, multimorbidity, and polypharmacy increase her risk of postoperative complications, including delirium, but she is willing to proceed with surgery. She identifies her daughter as her desired medical decision-maker, should she become incapacitated.

Based on medication changes and her daughter's presence, Mrs. M is at substantially lower risk of delirium. Her providers are aware of her cognitive impairment and are vigilant in monitoring for mental status changes. Physical and occupational therapy are able to provide better disposition recommendations because they know her baseline functional status. Her postoperative course is uncomplicated and she is able to discharge home on postoperative day 1, with home health care services ordered at discharge.

In addition to routine postoperative care, she will follow-up with her PCP to re-evaluate the recommended medication changes and further evaluate her possible cognitive impairment.

CONCLUSIONS

Older adults carry a higher risk of perioperative morbidity and mortality. Comprehensive geriatric assessment allows for accurate risk stratification and optimization of complex older adults but is not widely available at many centers, particularly outside of academic medical practices. Preoperative clinic providers can employ geriatric principles and best practice guidelines efficiently by utilizing rapid screening tools, available online resources, relying on an interdisciplinary team, and leveraging family as part of the care team.

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