



# Geriatric Surgery Verification

QUALITY IMPROVEMENT PROGRAM

A **QUALITY PROGRAM**  
of the AMERICAN COLLEGE  
OF SURGEONS

# Optimal Resources for Geriatric Surgery

**2019 Standards**

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# Optimal Resources for Geriatric Surgery

2019 Standards

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## Disclaimer

These Standards are intended solely as qualification criteria for GSV accreditation. They do not constitute a standard for care and are not intended to replace the medical judgment of the surgeon or health care professional in individual circumstances.

In order for a center to be found compliant with the GSV Standards, the center must be able to demonstrate compliance with the entire Standard as outlined in the Definition and Requirements. The Documentation section under each Standard is intended to provide summary guidance on how compliance must be demonstrated but is not intended to stand alone or supersede the Definition and Requirements.

In addition to verifying compliance with the Standards as written in this manual, the GSV may consider other factors not stated herein when reviewing a center for accreditation and reserves the right to withhold accreditation on this basis.

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## Executive Summary

### The American College of Surgeons Quality Improvement Programs

The American College of Surgeons (ACS) was established in 1913, founded on the principle of “doing what’s right for the patient.” For more than 100 years, the ACS has been formally measuring and improving the quality of surgical care, with initiatives in cancer and trauma being its longest-standing programs in existence, established in the 1920s and 1950s, respectively.

ACS programs are developed according to a four-part framework used to evaluate and improve the quality of care, consisting of (1) program-specific standards, (2) infrastructure needed for delivering high-quality, high-value care, (3) data collection and use, and (4) verification site visits to ensure proper implementation of components one through three. This model has been shown to improve both care and outcomes in specialties such as cancer, trauma, and metabolic/bariatric surgery, in addition to other surgical disciplines.

Over the past several years, ACS’ focus on specific surgical disciplines has expanded to encompass special populations including both pediatric patients and older adults. In 2018, the ACS released the Children’s Surgery Verification (CSV) Quality Improvement Program, followed closely in 2019 by the Geriatric Surgery Verification (GSV) Quality Improvement Program.

### The Geriatric Surgery Verification Program

Americans aged 65 years and older are the fast-growing segment of our population. With this group expected to exceed 58 million by 2020, we know that most hospitals collectively face an aging population with a unique clinical profile not seen in younger patients. Not only are older patients more physiologically and socially complex, trends

in health care utilization tell us that they are a patient population disproportionately undergoing surgical care. This surge in the number of older, uniquely vulnerable adults is poised to create one of the greatest health care challenges of our time. In this regard, the surgical community has been working to meet this challenge head-on.

Based on the input from stakeholder organizations, the intended patient population for the GSV Program is older adults 75 years of age or greater undergoing inpatient surgery in order to maximize the benefit to patients and minimize the burden of implementation. With the support of The John A. Hartford Foundation, the GSV Program was developed over a four-year period with 50+ stakeholders and two phases of hospital site visits, ultimately resulting in the creation of 30 standards. Garnering expertise from a diverse array of stakeholders as well as evidence from the literature, these standards aim to concisely address the most important aspects of geriatric surgical care within the four-part ACS framework of quality improvement. The GSV standards address matters of institutional investment (securing the administrative support and leadership needed to establish geriatric surgical care as a priority), clinical practice (emphasizing shared decision making, assessment of geriatric-specific vulnerabilities, and interdisciplinary collaboration), and programmatic infrastructure (facilitated by standardized protocols across the clinical continuum that build quality improvement and patient-centered care into the fabric of institutional operations). These evidence-based, methodologically rigorous standards have been developed in conjunction with decades of experience implementing hospital-level quality improvement programs across the U.S. to create a patient-centered initiative feasible for all hospitals caring for older adult surgical patients.

Backed by ACS’ long history of programmatic success in other specialties, the GSV Program is anticipated to similarly improve care and outcomes for older adults. Achievements of other programs include demonstrably better clinical outcomes, enhanced patient satisfaction, operationalization of evidence-based standards, strengthened interdisciplinary care and communication, improved implementation of protocolized care, and better results with payment/incentive programs.

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## Acknowledgments

### Coalition for Quality in Geriatric Surgery (CQGS) Core Development Team

JoAnn Coleman, DNP, ANP, ACNP, AOCN  
Emily Finlayson, MD, MS, FACS  
Kellie Flood, MD  
Mark Katlic, MD, MMM, FACS  
Sandhya Lagoo-Deenadayalan, MD, PhD, FACS  
Thomas Robinson, MD, MS, FACS  
Ronnie A. Rosenthal, MD, MS, FACS  
Marcia M. Russell, MD, FACS  
Victoria Tang, MD, MAS

### ACS Staff Contributors

Clifford Y. Ko, MD, MS, MSHS, FACS, FASCRS, Director,  
Division of Research and Optimal Patient Care  
Sameera Ali, MPH, Administrative Director, Division of  
Research and Optimal Patient Care  
Kataryna Christensen, BS, Project Manager, Geriatric  
Surgery Verification Program  
Warren Chow, MD, MS, ACS Clinical Scholar 2010–2012  
Sanjay Mohanty, MD, MS, ACS Clinical Scholar 2013–2015  
Julia R. Berian, MD, MS, ACS Clinical Scholar 2014–2017  
Melissa Hornor, MD, MS, ACS Clinical Scholar 2016–2018  
Lindsey M. Zhang, MD, MS, ACS Clinical Scholar 2018–2020  
Meixi Ma, MD, MS, ACS Clinical Scholar 2018–2020

## Stakeholders

ACS Advisory Council for Rural Surgery  
ACS Committee on Surgical Palliative Care  
Aetna  
AMDA: The Society for Post-Acute and Long-Term  
Care Medicine  
American Academy of Ophthalmology (AAO)  
American Academy of Orthopaedic Surgeons /  
American Association of Orthopaedic Surgeons (AAOS)  
American Academy of Otolaryngology –  
Head and Neck Surgery (AAO-HNS)  
American Academy of Physical Medicine and Rehabilitation  
(AAPM&R)  
American Association of Retired Persons (AARP)  
American College of Emergency Physicians (ACEP)  
American College of Physicians (ACP)  
American Geriatrics Society (AGS)  
American Hospital Association (AHA) /  
Health Research & Educational Trust (HRET)  
American Society of Anesthesiologists (ASA)  
American Society of Consultant Pharmacists (ASCP)  
American Society of Health-System Pharmacists (ASHP)  
American Society of PeriAnesthesia Nurses (ASPAN)  
American Urological Association (AUA)  
Association of periOperative Registered Nurses (AORN)  
Association of VA Surgeons (AVAS)  
Carealign  
Case Management Society of America (CMSA)  
Center to Advance Palliative Care (CAPC)  
Centers for Medicare and Medicaid Services (CMS)  
Eastern Association for the Surgery of Trauma (EAST)  
Family Caregiver Alliance (FCA)  
Florida Hospital Association (FHA)  
Geriatrics for Specialists Initiative (GSI)  
Gerontological Advanced Practice Nurses Association  
(GAPNA)  
Hartford Institute for Geriatric Nursing (HIGN)  
Hospital Elder Life Program (HELP)  
Kaiser Permanente Payors  
Memorial Sloan Kettering Cancer Center (MSKCC)

National Association of Social Workers (NASW)  
 National Committee for Quality Assurance (NCQA)  
 National Gerontological Nursing Association (NGNA)  
 National Transitions of Care Coalition (NTOCC)  
 Nurses Improving Care for Healthsystem Elders (NICHE)  
 Patient and Family Centered Care (PFCC) Partners  
 Patient Experience Council (Yale, New Haven)  
 Penn Center for Perioperative Outcomes Research  
 and Transformation (CPORT)  
 Pharmacy Quality Alliance (PQA)  
 Society for Academic Emergency Medicine (SAEM)  
 Society of Critical Care Medicine (SCCM)  
 Society of General Internal Medicine (SGIM)  
 Society of Hospital Medicine (SHM)  
 The American Association for the Surgery of Trauma (AAST)  
 The American Board of Surgery (ABS)  
 The American Congress of Obstetricians and Gynecologists  
 (ACOG)  
 The Beryl Institute  
 The Care Transitions Program (University of Colorado)  
 The Society of Thoracic Surgeons (STS)  
 The University of Alabama at Birmingham,  
 Division of Gerontology, Geriatrics and Palliative Care  
 University of Chicago MacLean Center for Clinical  
 Medical Ethics  
 University of Pittsburgh Medical Center (UPMC)  
 University of Wisconsin Department of Surgery  
 US Department of Veterans Affairs–Geriatrics and  
 Extended Care Services (GEC)

### **Institutional Contributors**

Blue Ridge Regional Hospital  
 Carroll Hospital Center  
 Cone Health Moses Cone Hospital  
 Duke University Hospital  
 Durham VA Health Care System  
 Johns Hopkins Bayview Medical Center  
 Kaiser Permanente Fresno Medical Center  
 Lehigh Valley Hospital  
 NYU Winthrop Hospital  
 Penticton Regional Hospital  
 Rochester Regional Health System  
 Rocky Mountain Regional VA Medical Center  
 Sinai Hospital of Baltimore  
 The Brigham & Women's Hospital  
 University Hospital | Rutgers Health  
 University of Alabama at Birmingham Medical Center  
 University of Connecticut Health Center  
 VA Connecticut Healthcare System  
 Yale New Haven Hospital



**The John A. Hartford Foundation**

Efforts by the Coalition for Quality in Geriatric Surgery  
 were made possible in part by the generous support of  
 The John A. Hartford Foundation.





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# 1 — Institutional Administrative Commitment



## 1.1 Letter of Support

### Definition and Requirements

The institution must solicit a letter of support from the hospital leadership (for example, CEO or equivalent) confirming their support for the implementation of the Geriatric Surgery Verification (GSV) Program. The intent of this standard is to describe and demonstrate leadership support and commitment for the GSV Program at the hospital. The letter must include the following components:

- A high-level description of how the hospital intends to comply with the GSV Program
- Hospital leadership's involvement in the quality and safety efforts devoted to geriatric care involving both surgical and non-surgical options
- Administrative support to provide the resources and authority necessary for successful implementation of an interdisciplinary program delivering evidence-based, patient-centered care

### Documentation

- A letter of support from hospital administration confirming their support for the GSV Program.

### Rationale for Standard 1.1

Institutional commitment is essential for the development and success of the GSV Program. From administrative and clinical leadership to frontline staff, there must be acknowledgment that older adults are a distinct population with unique care needs. Buy-in should be driven primarily by the desire to improve outcomes for patients. Data show a clear improvement in outcomes when care in the perioperative period is provided by an interdisciplinary team with expertise in the unique issues that make older adults more vulnerable.<sup>1,2</sup>

The return on investment in a geriatric surgery quality program will likely be achieved by decreasing the rate and severity of common geriatric complications such as delirium, pressure injury, and falls, and by formalizing the communication with patients and their families and caregivers. The implementation of care processes designed to prevent the occurrence of complications specific to the geriatric surgical patient will result in better patient outcomes and decrease hospital resource use.<sup>3,4,5</sup> In addition,

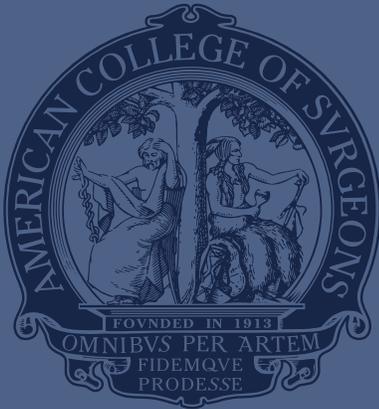
by improving communication across the continuum of care, including preoperative input from and postoperative feedback to the patients' primary care provider (and post-acute care institution, if applicable), the coordination of care and the patient experience of care will likewise improve.<sup>6</sup>

With regulatory agencies and insurers now focused on both the value and patient perceptions of care, an institution will likely find meeting quality metrics easier when there is a well-codified plan for engaging patients in decision making, identifying and addressing potential vulnerabilities, communicating across transitions of care, and tracking meaningful outcomes.<sup>7</sup> These are the goals the GSV Program hopes to help hospital leadership achieve in order to provide both high-value and high-quality patient-centered care.

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## 2—Program Scope and Governance



## 2.1 Geriatric Surgery Director

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### Definition and Requirements

The institution must have a Geriatric Surgery Director. The role must be fulfilled by a physician (surgeon, preferably) and is not intended to require a dedicated, full-time equivalent (FTE). The official job description must reflect the responsibilities outlined below and support dedicated time and compensation commensurate with duties assigned.

Geriatric Surgery Director Responsibilities:

- **Leadership:** Provide the leadership for all GSV operations, including GSV implementation oversight and accruing necessary resources to assure that all standards are met.
- **Committee Oversight:** Oversee the Geriatric Surgery Quality Committee (GSQC).
- **Continuing Education:** Complete at least 6 hours of Continuing Medical Education (CME) annually (or 18 hours over a three-year accreditation period) on topics pertinent to geriatric surgery.

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### Documentation

- A job description of the Geriatric Surgery Director illustrating that he or she is fully integrated into the institution's organizational framework and budgetary process and has the resources to fulfill all duties.
- Evidence of CME certification totaling 6 credit hours per year or 18 credit hours over a three-year accreditation period.

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### Rationale for Standard 2.1

See page 9 for combined rationale for Standards 2.1, 2.2, and 2.3.

## 2.2 Geriatric Surgery Coordinator

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### Definition and Requirements

The institution must have a Geriatric Surgery Coordinator. The role is not intended to be fulfilled by a dedicated FTE. The official job description must reflect the responsibilities outlined below and support dedicated time and compensation commensurate with duties assigned.

Geriatric Surgery Coordinator Responsibilities:

- **Communication:** Serve as the main point of contact with the ACS GSV Program.
- **Administrative Oversight:**
  - Day-to-day operations of the GSV Program
  - Documentation of minutes and attendance of committee meetings
  - Implementation plans of action from committee meetings
  - Quality improvement (QI)/process improvement (PI) initiatives
  - Community outreach project
  - GSV compliance
  - Preparations for site visits

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### Documentation

- A job description of the Geriatric Surgery Coordinator illustrating that he or she is fully integrated into the institution's organizational framework and budgetary process and has the resources to fulfill all duties.

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### Rationale for Standard 2.2

See page 9 for combined rationale for Standards 2.1, 2.2, and 2.3.

## 2.3 Geriatric Surgery Quality Committee

### Definition and Requirements

The institution must have a Geriatric Surgery Quality Committee (GSQC), which will be responsible not only for the maintenance and compliance of the GSV standards but also for monitoring quality of care by identifying and addressing areas in need of improvement. The GSQC must meet at least quarterly with attendance of greater than or equal to 50 percent of meetings for mandatory committee members.

Mandatory members of the committee include:

- Geriatric Surgery Director
- Geriatric Surgery Coordinator
- Representatives from relevant surgical specialties
- Non-surgical health care provider(s) with geriatric expertise\*
- Nursing representative(s)
- Case management representative(s)

Recommended, but not mandatory, members of the committee include representatives of:

- Executive administration
- Anesthesia
- Emergency medicine
- Critical care
- Hematology-oncology
- Nutrition
- Physical therapy
- Occupational therapy
- Palliative care
- Patient navigator
- Patient-family representative
- Pharmacy
- Hospital-level quality management

*\*The role of the “non-surgical health care provider with geriatric expertise,” must be filled by a provider with geriatric expertise as demonstrated by specific training, certification, or equivalent.*

GSQC Responsibilities:

- **Case Review:** At least quarterly retrospective case reviews to identify system-level problems specific to geriatric surgical care and define plans of action (see **Standard 6.1** for further details).
- **Data Review:** At least quarterly review of data to identify, trend, and address issues specific to geriatric surgical care in need of attention (see **Standard 6.1** for further details).

- **Annual QI or PI Project:** At least one annual QI or PI project, informed by the data and case reviews (see **Standard 7.1** for further details).

### Documentation

- Institution’s written charter detailing the function and scope of the GSQC, including documentation of how the GSQC fits into the quality infrastructure of the institution.
- Official minutes of the GSQC meetings, including the date, agenda, those in attendance (identifying mandatory committee members), and evidence of data and case reviews.
- Institution’s GSQC member list, credentials, and roles, including any delegated responsibilities. If Geriatric Surgery Coordinator responsibilities have been delegated to other GSQC members, the details thereof must be documented. If a provider outside the GSQC undertakes the QI or PI project, his or her role must be documented.
- Evidence of geriatric credentialing or certification for the GSQC member with geriatric expertise, if he or she is not a licensed geriatrician or equivalent.

### Rationales for Standards 2.1–2.3

To best serve the interests of older adults, the institution must demonstrate a commitment to improving surgical outcomes for this vulnerable population. Commitment is demonstrated by dedicating the resources necessary to ensure a robust and successful program. The standards within this chapter detail key GSV leadership positions, including the Geriatric Surgery Director and the Geriatric Surgery Program Coordinator. The standards do not require that either of these positions be devoted solely to GSV functions. Additionally, these standards mandate the creation of a GSQC, which will be responsible for monitoring the quality of care of older surgical patients within the institution and identifying and addressing areas that need improvement. Given the interdisciplinary care necessary for older patients, creation of such a committee is critical for the success of the GSV Program.

All American College of Surgeons (ACS) quality programs call for strong leadership which is necessary for the success of any program. Every ACS quality program has similar standards for program structure and management. The experience gained from other quality programs has shown that organized, systematic approaches to care result in better outcomes. For example, in a national evaluation of trauma outcomes, adjusted mortality rates were lower for patients treated at hospitals with a formal trauma program compared with hospitals without.<sup>1</sup> Additionally, in the care of pediatric surgical patients, variability in outcomes, the need for specialized equipment, highly trained personnel, and a desire to provide safe, high-quality care have driven an effort to develop the Children's Surgery Verification (CSV) Program, which debuted in early 2017.<sup>2,3</sup> The CSV Program will be of utmost importance for improving surgical outcomes in older adults through a combination of institutional leadership, creation of an interdisciplinary team, and standardized care processes.

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## 3—Facilities and Equipment Resources



## 3.1 Geriatric-Friendly Patient Rooms

### Definition and Requirements

Patient rooms must accommodate the needs of the older adult.

- There must be space for family and caregiver visitation. If rooms cannot accommodate visiting family and caregivers, communal visiting areas must be established.
- Rooms must include directed elements for patient reorientation (for example, large clock or other display of date, day, and time; daily planned activity goals; any anticipated medical tests or procedures; names of care team; and so on).

### Documentation

- N/A

### Rationale for Standard 3.1

The concept of developing care infrastructure focused on what matters most to older adults is best embodied by the creation of the Acute Care for the Elderly (ACE) unit. The ACE unit was initially proposed at the University Hospitals of Cleveland, and the first ACE unit was opened in 1990.<sup>1</sup> The primary goals of ACE units are to provide patient-centered care in a home-like environment with an emphasis on interdisciplinary collaboration, ongoing review of medical care, and comprehensive discharge planning.<sup>2</sup> A study by Covinsky et al. demonstrated that patients receiving ACE unit care, compared with usual care, had better functional outcomes at discharge and accrued lower costs.<sup>3</sup> Similarly, Flood et al. demonstrated that the ACE unit care model decreased both costs and readmissions in medical inpatients, and demonstrated feasibility within an orthopedic surgery patient population.<sup>4</sup> An important component of ACE units are the design and function of patient rooms for older adults. This includes ensuring that older adults have patient rooms that facilitate family or caregiver visitation, provide items that improve orientation such as large clocks with easy-to-read displays and legible notation of the current date and schedule for the day, and features such as non-skid flooring and grab bars to prevent falls. Such aspects of the

patient room for older adults can contribute significantly to the prevention of geriatric syndromes. For example, in a randomized clinical study, Martinez et al. evaluated the effect of non-pharmacologic environmental features such as a clock in the room, presence of familiar objects in the room, and reorientation by family members and extended family visitation time on the development of delirium.<sup>5</sup> The results of the study showed that patients randomized to have these non-pharmacologic, environmental features as part of their care were significantly less likely to develop delirium. For these reasons, provision of geriatric-friendly patient rooms is a necessary component of providing patient-centered care, highlighting the unique needs of the older adult and emphasizing the importance of family and caregiver engagement.

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## 4— Personnel and Services Resources



## 4.1 Geriatric Surgery Nurse Champion

### Definition and Requirements

At least one Geriatric Surgery Nurse Champion (GSNC) must be identified on each surgical floor or unit taking care of older adult surgical patients in the program.

GSNC Responsibilities:

- **Leadership:** Promote evidence-based best practices for the nursing care of older surgical patients within the designated surgical floor(s) or unit(s).
- **Quality Improvement (QI):** Oversee the completion of at least one QI project annually within the designated surgical floor(s) or unit(s).
- **Continuing Education:** Complete at least two hours of Continuing Nursing Education (CNE) annually (or six hours over a three-year accreditation period) on topics pertinent to geriatric surgery.

### Documentation

- Organizational structure of GSNCs identified on each surgical floor or unit, with evidence of CNE certification totaling two credit hours per year or six credit hours over a three-year accreditation period for each GSNC.
- A summary of the QI project(s) implemented by the GSNCs with evidence of GSNC leadership in promoting evidence-based best practices.

### Rationale for Standard 4.1

Despite an ongoing effort by researchers and physician scientists to determine evidence-based best practices for improving medical outcomes, there is not always a direct translation from the research realm to clinical care. In fact, it has been shown that clinical practice lags behind original research by an average of 17 years.<sup>1</sup> Nurse champions are nurses who are interested in QI and take a leadership role in the integration and dissemination of evidence-based medicine.<sup>2</sup> Nurse champions are critical for expediting the uptake of best practices and are therefore essential to the successful implementation of the GSV Program standards.

Utilizing nurse champions is an effective strategy, as it has been shown that nurses prefer to learn new information from colleagues rather than from articles or textbooks.<sup>3</sup> Several other studies have shown that the use of nurse champions improves adherence and compliance with evidence-based best practices, ultimately improving medical outcomes.<sup>4,5</sup> Nurses Improving Care for Healthsystem Elders (NICHE) is a program that capitalizes on the importance of nurse champions to enhance the care of older adults. NICHE was established in 1992 at four pilot hospitals and has since grown to more than 700 hospitals.<sup>6</sup> NICHE has had a significant impact on the positive perception of the geriatric nursing practice environment and has also increased the quality of geriatric care.<sup>7</sup> As a result of the success of NICHE, the GSV Program believes that utilizing nurse champions for the care of older adults can and must be applied to the care of all older adults undergoing surgery.

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## 5— Patient Care: Expectations and Protocols

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## **Goals and Decision Making**

Standards 5.1-5.5

## 5.1 Treatment and Overall Health Goals

### Definition and Requirements

Deliberation over surgical decision making must allow older adults the opportunity to discuss the following with the surgeon:

- Overall health goals (not limited to the current condition or treatment options)
- Treatment goals (specific to the current condition)
- Anticipated impact of both surgical and non-surgical treatments on symptoms, function, burden of care, living situation, and survival

After discussion, the surgeon must document the treatment plan and how it has been informed by shared discussion of the patient's goals.

### Documentation

- **Medical Record:**
  - A verbatim quote by the patient about his or her overall health and treatment goals
  - Attestation that the surgeon has discussed the anticipated impact of both surgical and non-surgical treatments on symptoms, function, burden of care, living situation, and survival
  - Recommended treatment plan and acknowledgement of how the recommended plan has been informed by shared discussion of the patients' goals

### Rationale for Standard 5.1

Shared decision making with patients hinges upon high-quality communication and empowering patients to reflect upon and identify personal health goals.<sup>1</sup> The majority of older adults value independent decision making at the end of their lives.<sup>2</sup> Yet, specialists are often observed to communicate with a “managerial” style lacking in patient engagement.<sup>3</sup>

Older adults should have the opportunity to identify an overall health goal that is personal and specific, such as “I want to be able to walk at my grandson's wedding this summer.” Similar to the “Chief Complaint,” the overall health goal should be expressed in the patient's own words. Example questions to elicit patient values and overall health goals are: “What does living well mean to you?” “What brings you strength?” “What should I know about you to take the best care of you?” Alternative questions may include “What activities are so important to you that you cannot imagine living without?” and “What kind of treatment are you hoping to avoid?” Because these alternative questions may be unnerving, providers should use their judgment as to whether a patient has sufficient insight to tolerate and answer a given question.

Patient health goals relative to the surgical condition can be categorized broadly into (1) prolonging life, (2) preserving function or independence, (3) relieving symptoms, (4) curing a condition, or (5) establishing a diagnosis.<sup>4</sup> Most health care professionals understand the implicit trade-offs required in achieving treatment goals (in other words, most patients will want all of the above, while health care providers may recognize that the life-prolonging treatment might not maintain the patient's function or independence, or may be accompanied by bothersome symptoms). These trade-offs should be explicitly addressed with patients so they may better understand the potential outcomes of their health goal.

Surgical discussions often focus on surgical disease as an isolated problem to be fixed (the so-called “fix it” model).<sup>4</sup> Despite many surgeons' attempts to describe the complex risk-benefit balance of a given operation, the “fix-it” model may oversimplify the decision and obscure the repercussions that an acute surgical problem can have on a patient with preexisting comorbidities and functional limitations. An interdisciplinary panel convened by Cooper et al. has provided key recommendations to improve communication around surgical emergencies for seriously ill older adults.<sup>5</sup> The recommended steps include an emphasis on describing the acute surgical problem within the context of the patient's underlying illness and explaining both surgical as well as non-surgical, or palliative, treatment options. An example of a patient-physician communication framework that embodies these recommendations is called the Best Case/Worse Case Scenarios.<sup>6</sup>

In summary, this standard aims to distinguish between overall health goals and treatment goals specific to the current condition. Though overall health goals and health care treatment preferences are often aligned, this is not always the case; this standard aims to improve that alignment.<sup>7</sup> For example, a patient's overall health goal might be to maintain his or her quality of life, while the health goal for the current condition might be to remove a cancer. Furthermore, this standard aims to improve preoperative conversations and risk assessment by addressing nonoperative alternatives and patient-centered outcomes such as function and living situation, as well as traditional morbidity and mortality outcomes.

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## 5.2 Code Status and Advance Directives

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### Definition and Requirements

Code status and any existing advance directive must be reviewed preoperatively by the surgeon. Patients without a defined code status or an advance care plan must be offered the opportunity to establish an advance directive in addition to being provided with educational resources on advance care planning.

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### Documentation

- **Medical Record:**
  - Code status **OR** documentation of an unsuccessful attempt to establish a code status
  - Advance directive **OR** documentation of an unsuccessful attempt to establish an advance directive
- Process, protocol, or policy in place for establishing code status and advance directives.
- Educational materials on advance care planning that are provided to patients.

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### Rationale for Standard 5.2

See page 27 for combined rationale for Standards 5.2, 5.3, and 5.4.

## 5.3 Medical Proxy

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### Definition and Requirements

All patients must have a health care representative, surrogate, or proxy identified with name and contact information clearly documented. For those without, there must be documentation of an effort to identify one. Educational materials must be provided to facilitate discussion between the patient and his or her surrogate about the patient's overall health and treatment goals.

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### Documentation

- **Medical Record:**
  - Patient's health care representative, surrogate, or proxy with name and contact information **OR** documentation of an unsuccessful attempt to establish a health care representative, surrogate, or proxy
- Process, protocol, or policy in place for identifying a health care representative, surrogate, or proxy for patients without one.
- Educational materials that are provided to patients that facilitate discussion between the patient and his or her surrogate about the patient's overall health goals and goals for treatment.

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### Rationale for Standard 5.3

See page 27 for combined rationale for Standards 5.2, 5.3, and 5.4.

## 5.4 Life-Sustaining Treatment Discussion for Patients with Planned ICU Admission

### Definition and Requirements

For patients with anticipated admission to the intensive care unit (ICU), there must be a discussion regarding the indications for, limitations of, and patient's desire for life-sustaining treatments, including but not limited to:

- Cardiopulmonary resuscitation
- Mechanical ventilation
- Feeding tubes
- Hemodialysis
- Blood transfusion

The institution can develop a process that meets the needs of their staff and work-flow to ensure discussion of these interventions. For example, a patient anticipated to be admitted to the ICU may be briefed on these elements as part of a standard anesthesia visit or preoperative admission process.

### Documentation

- **Medical Record:**
  - Discussion of and patient's desire for life-sustaining treatments, including but not limited to:
    - Cardiopulmonary resuscitation
    - Mechanical ventilation
    - Feeding tubes
    - Hemodialysis
    - Blood transfusion
- Process, protocol, or policy in place to ensure discussion regarding indications, limitations of, and the patient's desire for life-sustaining treatments listed above.

### Rationale for Standards 5.2–5.4

Advance care planning is a key part of shared decision making and includes the following topic areas: code status and advance directive, medical proxy or surrogate decision maker, and life-sustaining preferences. Overall there is wide variability in a patient's desire to address these topics, but the majority of patients demonstrate an interest.<sup>1,2</sup> In a sample of Canadian patients, 84 percent did not find the topic distressing.<sup>3</sup> In addition, Tierney et al. found that discussing advance directives increased patient satisfaction with primary care visits.<sup>4</sup>

Practical tips for integrating advance care planning into

busy surgical practices include drawing on team-based care: front-desk staff can routinely ask patients to bring advance directives to clinic, inform the clinician whether or not there is an advance directive, and copy for the medical record; medical assistants can pre-screen the medical record for prior advance-care planning and highlight the opportunity for the clinician to initiate and update during the visit; staff members with advance-care planning training can initiate the conversation to assess patient readiness to discuss the topic.<sup>5,6</sup> Health care professionals facilitating advance-care planning discussions should be aware that race and low health literacy are risk factors for not having established advance directives.<sup>7,8</sup> Health care professionals should approach these discussions with awareness and sensitivity to race, socioeconomic, and cultural differences. Most importantly, tools and resources should be made available to patients. One such tool, the PREPARE website ([prepareforyourcare.com](http://prepareforyourcare.com)), was found in a recent randomized controlled trial to increase planning documentation from 25 to 35 percent in a cohort of veterans older than 60 years of age.<sup>9</sup> For patients who do not have previously determined advance directives, the preoperative discussion must address patient preferences for life-sustaining treatments consistent with the patient's goals and values. For patients who do have previously determined advance directives, it is important to remember that specifications addressing life-sustaining treatments should be reevaluated in the context of the upcoming surgery.

In 2014, the ACS Committee on Ethics released a statement on advance directives and do-not-resuscitate (DNR) orders in the operating room.<sup>10</sup> The statement advised that hospital policies to automatically suspend or enforce a DNR order “do not sufficiently support a patient's right to self-determination.” As such, the ACS recommends a policy of “required reconsideration” which allows a patient or the patient's surrogate decision maker to reevaluate advance directives, including the DNR order, within the context of surgical decision making. The “required reconsideration” policy is consistent with the position statements of the Association of periOperative Registered Nurses (AORN) and the American Society of Anesthesiologists (ASA).<sup>11,12</sup>

Though all older adults should have advance directives, this is often not the case for surgical patients, and it is imperative that the surgeon understand the patient's wishes as related to specific interventions. A 2018 single-institution study by Tang et al. found that only 26 percent of patients had advance directives prior to undergoing major surgery, and for those who died within one year of surgery, only 31 percent had evidence of advance care planning preoperatively.<sup>13</sup> In a national survey of surgeons, only

one half reported sometimes or always discussing advance directives before surgery.<sup>14</sup> Similarly, a retrospective study examining documentation of goals of care discussions in patients with new DNR orders found only 43 percent had goals/values, 14 percent had discussion of prognosis, 40 percent had treatment options and resuscitation options, and 29 percent had a surrogate decision maker documented.<sup>15</sup> Explicitly addressing patient preferences is critical, given that the majority of surgeons (62%) expect that the patient has entered an informal contract or “buy-in” for the postoperative course.<sup>16</sup> As such, an explicit conversation should address advance directives as well as possible and expected postoperative life-sustaining measures, especially for those patients with an anticipated ICU admission.

In summary, these standards aim to improve both the communication and documentation of advance care planning, including code status and advance directive, medical proxy or surrogate decision maker, and life-sustaining treatment preferences for those patients with an anticipated ICU admission. However, it should be noted that high-quality patient/physician communication and documentation thereof does not guarantee the provision of goal-concordant care, or care that aligns with patient goals and values. The Measuring What Matters project of the American Academy of Hospice and Palliative Medicine (AAHPM) and Hospice and Palliative Nurses Association (HPNA) chose “Care Consistency with Documented Care Preferences” as one of 10 quality indicators to serve as the foundation for quality measurement at the end of life in U.S. health care settings.<sup>17</sup> To consistently provide goal-concordant care, there must be a system in place to ensure that advance directives are documented, easily accessible in the medical record, and are followed in the event of an acute decompensation.

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## 5.5 Reaffirm Surgical Decision Making

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### Definition and Requirements

In the elective setting, the patient and family/caregiver(s) must be offered the opportunity to reaffirm the initial surgical decision making (see **Standard 5.1** for further details) to ensure that all questions and uncertainties regarding the proposed operation have been addressed. This may be accomplished by an in-person visit, a telephone call, or a telehealth visit with surgical staff or a designated representative.

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### Documentation

- Process, protocol, or policy in place outlining process for the opportunity to revisit surgical decision making.

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### Rationale for Standard 5.5

Communication is critical to improving continuity and experience of care. The rationale for this standard is to promote improvements in communication between the surgeon and the older adult. The purpose of the initial consultation is primarily to discuss the reason for referral and the details of surgery (for example, indication, risks/benefits). Based on input from the GSV stakeholders, more than one visit may help separate the details of surgery from other decision-making issues such as advance care planning, as well as the ultimate decision to undergo surgery. A study analyzing consultation transcripts for patients prior to elective vascular surgery demonstrated that complex or nuanced decision making improved for patients attending multiple visits.<sup>1</sup> In addition, if further preoperative tests or consults are warranted, the second visit would provide an opportunity to discuss new results and their impact on the decision to proceed with surgery.

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## **Preoperative Work-Up**

Standards 5.6-5.9

## 5.6 Geriatric Vulnerability Screens

### Definition and Requirements

Patients must be screened for the following high-risk characteristics to identify potential areas of vulnerability:

- Age  $\geq$  85 years
- Impaired cognition
- Delirium risk
- Impaired functional status
- Impaired mobility
- Malnutrition
- Difficulty swallowing
- Need for palliative care assessment

A positive screen in any category will designate the patient as “high risk.”

In **elective** settings, the screening must be conducted prior to the operation to allow for time to address identified positive screens.

In **non-elective** settings, the screening must be conducted prior to the operation,\* if possible, to flag areas of vulnerability that must be addressed within the 48-hour postoperative window, or as soon as is clinically appropriate.

*\*Often, the clinical situation will not allow for the completion of some or all preoperative vulnerability screens (for example, the patient cannot perform a mobility screen because they are immobilized due to a hip fracture). In these situations, information must be gathered from the patient, his or her family, or caregiver as appropriate.*

### Documentation

- **Medical Record:**
  - Results of geriatric vulnerability screens and the areas for which the patient specifically screens positive should be easily accessible in the patient’s medical record
- Screening tools implemented at the institution to flag patients as high risk in the categories noted above.

### Rationale for Standard 5.6

The goal of preoperative screening is to identify potentially modifiable vulnerabilities that may influence surgical outcomes and inform decision making. While the physiologic state called “frailty” is well recognized as perhaps the most important vulnerability and predictor of adverse surgical outcomes, interventions to reverse “frailty” per se are not available.<sup>1,2</sup> Therefore, screening for the major components of frailty can then guide directed interventions.

Of note, the ACS GSV Program does not require strict adherence to a specific set of screening tools. The screening tools mentioned within the rationale for **Standard 5.6** are provided simply as examples of validated instruments that have proven successful, which institutions may elect to use. The ACS GSV Program does, however, strongly recommend that the same screening tools used in preoperative assessment be used at discharge (see **Standard 5.16** for further details) for internal consistency and meaningful comparison.

**Age  $\geq$  85:** Previous research has demonstrated that the oldest of patients are more likely to be frail and have worse outcomes after surgery than younger cohorts.<sup>3,4</sup> In line with this, the Vulnerable Elders Survey, a tool for identifying vulnerable older people in the community, gives 3 points to patients aged 85 and older. Using a nationally representative community-based survey, the Vulnerable Elders Survey identified 32 percent of the sample of Medicare beneficiaries as vulnerable. Using a nationally representative sample of Medicare beneficiaries, patients with 3 or more points (compared with 0–2 points), deemed the vulnerable group, had four times the risk of death or functional decline compared with the non-vulnerable group.<sup>5</sup> Similarly, Hamel et al. used data from the Veterans Affairs National Surgical Quality Improvement Program to compare outcomes after surgery for patients  $\geq$  80 and  $<$  80 years. Both mortality rates (8% versus 3%,  $p < 0.001$ ) and morbidity rates (20% versus 12%,  $p < 0.001$ ) were significantly higher in patients  $\geq$  80 years compared with those  $<$  80 years. In addition, within this older group, patients who experienced one or more complications had significantly higher 30-day mortality rates than those without complications (26% versus 4%,  $p < 0.001$ ).<sup>6</sup> In summary, it is clear that patients aged 85 or older are at a higher risk for adverse outcomes after surgery, and as such, should be included in the high-risk cohort that receives further evaluation.

**Impaired Cognition:** Cognitive impairment is common in older adults and often goes unrecognized, with an estimated prevalence of 13.9 percent among individuals age 71 and older and 24.2 percent among individuals age 80 and older in the U.S.<sup>7</sup> In a large retrospective review from 2012, patients with dementia were found to have a higher

incidence of several postoperative complications: acute renal failure (OR 1.32, 95% CI 1.19–1.47), pneumonia (OR = 2.18, 95% CI 1.69–1.92), septicemia (OR = 1.8, 95% CI 1.69–1.92), stroke (OR = 1.51, 95% CI 1.43–1.6), and urinary tract infection (OR = 1.62, 95% CI 1.5–1.74).<sup>8</sup> Additionally, cognitive impairment is a known risk factor for development of postoperative delirium, and cognitive impairment and postoperative delirium have been found to synergistically increase the risk of long-term (one year) functional decline for older adults undergoing orthopaedic surgery.<sup>9</sup>

It is also important to document baseline level of cognitive functioning for comparison with mental status changes in both the immediate postoperative period and the longer-term recovery period. Both a preoperative screening cognitive assessment and further evaluation of an abnormal cognitive screen were validated as quality indicators for older adult surgical patients based on the work by McGory et al.<sup>10</sup> Similarly, the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP®)/ American Geriatrics Society (AGS) Best Practice Guidelines: Optimal Preoperative Assessment of the Geriatric Surgical Patient recommends preoperative cognitive evaluation for those patients without a known history of cognitive impairment or dementia.<sup>11,12</sup> Cognitive impairment can be quickly assessed by several validated screening tools, one of which is the Mini-Cog, which consists of a three-item recall and clock drawing exercise.<sup>13,14</sup> The Mini-Cog has low inter-observer variability and has been validated in the geriatric surgery population.<sup>14,15</sup> In summary, it is clear that cognitively impaired patients are at a higher risk for adverse outcomes after surgery and, as such, should be included in the high-risk cohort that receives further evaluation.

**Delirium Risk:** Delirium is a common postoperative

complication that affects up to 50 percent of older adults. Delirium is associated with higher costs, postoperative complications, poor recovery, institutionalization, and mortality.<sup>16–21</sup> Delirium affects 2.6 million older adults and costs the U.S. health care system \$164 billion each year.<sup>22</sup> The risk of developing delirium after surgery is best described as a relationship between patient risk factors (predisposing factors) and a physiologic stressor (precipitating factors), one of which is surgery.<sup>17</sup> Preoperative delirium risk assessments help identify patients at increased risk of developing postoperative delirium. These at-risk patients should receive multi-component, non-pharmacologic delirium prevention interventions, which have been shown to prevent up to 40 percent of delirium occurrences in hospitalized older adults.<sup>23,24</sup>

There are several screening tests reported in the literature for preoperative delirium risk stratification. The Marcantonio clinical prediction rule stratifies patients into low (2%), medium (13%), and high (50%) delirium risk based on six preoperative risk factors: age  $\geq$  70, alcohol abuse, cognitive impairment, low activity level, abnormal electrolytes, and invasive surgery (aortic aneurysm surgery or noncardiac thoracic surgery).<sup>25</sup> A delirium clinical guideline issued by the National Institute for Health and Care Excellence (NICE) recommends the routine assessment of the following four major risk factors for delirium: age greater than 65 years, chronic cognitive decline or dementia, current hip fracture, and the presence of severe illness.<sup>26</sup>

The ACS NSQIP/AGS Best Practice Guidelines: Optimal Preoperative Assessment of the Geriatric Surgical Patient describes the following risk factors for postoperative delirium (Table 1).<sup>11,12</sup>

Given the high incidence of delirium and its severe

**Table 1. Geriatric-specific risk factors for postoperative delirium.**

Cognitive and Behavioral Disorders	Disease or Illness-Related	Other
Cognitive impairment and dementia	Severe illness or comorbidity	Older age $\geq$ 70 years
Untreated or inadequately controlled pain	Renal insufficiency	Polypharmacy and use of psychotropic medications (benzodiazepines, anticholinergics, and antihistamines)
Depression	Anemia	Urinary retention or constipation
Alcohol use	Hypoxia	Presence of urinary catheter or other tethers
Sleep deprivation	Metabolic	
	Poor nutrition	
	Dehydration	
	Electrolyte abnormalities	
	Functional impairments	
	Poor functional status	
	Immobilization	
	Hearing or vision impairment	

consequences, it is important to screen preoperatively for delirium risk to better inform the preoperative discussion, and to identify the need for prevention strategies postoperatively.

**Impaired Functional Status:** Preoperative functional impairment is a significant risk factor for poor surgical outcomes in all patients but particularly in older adults.<sup>27</sup> Any period of immobility associated with anesthesia and postoperative pain increases the risk of functional decline. The trajectory of functional recovery after surgery is often protracted for older adults, even more so when patients additionally experience syndromes common to older adults, such as postoperative delirium. For those undergoing major abdominal surgery, recovery may take six months for all patients and up to 18 months for those who develop delirium.<sup>28,29</sup> Preoperative functional dependency has also been found to be an independent risk factor for mortality after a major operation (OR 1.75, CI 1.57–1.98,  $p < 0.0001$ ).<sup>30</sup> Given the association between impaired function and mortality as well as delayed functional recovery in this population, functional status should be assessed routinely in patients undergoing surgery.

The two most common scales for assessment of functional status in older adult patients are the Activities of Daily Living (ADL) and the Instrumental Activities of Daily Living (IADL). The Index of Independence in the ADL scale was initially developed by Katz et al. through observations of activities performed by a group of patients with hip fracture.<sup>31</sup> The Index of ADL summarizes performance in the following six areas: bathing, dressing, toileting, transferring, continence, and feeding. The structure of the Index of ADL is hierarchical—patients often become dependent for bathing or dressing first and dependent for continence or feeding last. The IADL scale was developed by Lawton et al. to describe a more complex set of behaviors reflecting the capacity of elders to adapt to their environment.<sup>32</sup> IADL includes use of the telephone, shopping, food preparation, doing housework and laundry, use of transportation, responsibility for own medications, and ability to handle finances. Impairment of IADLs will often require either formal or family-administered services to maintain an elderly person living in the community.

Documentation of preadmission ADLs and IADLs will provide information about the patient's baseline level of functioning and identify high-risk patients who require further evaluation. It will also provide important information to assist the surgeon in discussing postoperative functional outcomes, perioperative care needs, and potential discharge location.

**Impaired Mobility:** Preexisting mobility impairment in the

older adult has important implications for postoperative care since early postoperative ambulation is key to functional recovery.<sup>33</sup> Preoperative need for a mobility aid identifies patients with gait and balance disturbances that may increase risk for falling in the postoperative period, both in the hospital and after discharge. Use of a mobility aid has also been associated with adverse outcomes after surgery, including the 30-day occurrence of serious morbidity (pneumonia, progressive renal insufficiency, acute renal failure, venous thromboembolism, return to the operating room, deep incisional or organ space surgical site infection, systemic sepsis, unplanned intubation, urinary tract infection, and wound disruption) and mortality.<sup>27</sup> Robinson et al. evaluated the association of an abnormal “Timed Up and Go” (TUG) test on postoperative complications and one-year mortality.<sup>34</sup> Slower test results were associated with both increased postoperative complications and increased one-year mortality for both colorectal and cardiac operations.

The TUG test assesses a patient's ease of mobility through a short physical activity test. The test requires the patient to stand up from a chair, walk three meters (10 feet), turn, and walk back to the chair and sit down. Patients may use any walking aid they typically use when ambulating. According to the Centers for Disease Control and Prevention (CDC), any patient who requires equal to or more than 12 seconds to complete a TUG is at increased risk for experiencing a fall.<sup>35</sup>

Preoperative assessment and documentation of mobility will provide information about the patient's baseline level of mobility as well as identify high-risk patients. It will also provide information useful for postoperative care, fall risk precautions, and discharge planning. When time allows, the impact of preoperative mobility disturbances may be mitigated by a period of prehabilitation with gait and balance training, although the literature supporting specific regimens is still lacking.

**Malnutrition:** Malnutrition is common and underrecognized in older adult patients. A multinational study published in 2010 found rates of malnutrition in older adult populations to be 5.8 percent among elderly individuals in the community, 13.8 percent in nursing homes, 38.7 percent in hospitals, and 50.5 percent in rehabilitation.<sup>36</sup> Geriatric nursing home residents who are malnourished, for example, have an up to six-fold increased risk of one-year mortality.<sup>37</sup> Malnutrition is associated with an increased risk of postoperative morbidity, especially infections and wound complications.<sup>38</sup> Preoperative nutrition screening and nutritional optimization have been found to improve nutritional outcomes in a cost-effective manner. Malnourished patients receiving screening and nutritional intervention decreased their length of stay from 14.5 days ( $\pm 13.3$ ) to 11.5 days ( $\pm 8.0$ ). Additionally, the proportion of patients who had a greater than 3 percent increase in weight during the hospitalization was significantly higher in the intervention group (18% versus 16%).<sup>39</sup>

Both a preoperative screening nutritional assessment and

development of a preoperative and postoperative treatment plan for those at risk for malnutrition were validated as quality indicators for elderly surgical patients based on the work by McGory et al.<sup>10</sup> Similarly, ACS NSQIP/AGS Best Practice Guidelines: Optimal Preoperative Assessment of the Geriatric Surgical Patient recommends screening for severe nutritional risk with one of the following: (1) body mass index (BMI) < 18.5 kg/m<sup>2</sup>; (2) serum albumin < 3.0 g/dL (with no evidence of hepatic or renal dysfunction); (3) unintentional weight loss > 10 to 15 percent within six months.<sup>11,12</sup> Finally, ACS Strong for Surgery, an ACS quality improvement program focused on preoperative readiness and optimization, recommends screening for malnutrition by assessing if (1) BMI is less than 19; (2) if the patient had unintentional weight loss of more than eight pounds in the last three months; (3) if the patient has had a poor appetite (eating less than half of meals or fewer than two meals per day); and (4) if the patient is unable to take food orally. If any of those are positive, Strong for Surgery recommends referral to a registered dietitian for evaluation.<sup>40</sup> Strong for Surgery also recommends screening the patient's albumin level and providing immune modulating supplementation if the patient is having complex surgery.<sup>40</sup>

The Mini Nutritional Assessment-Short Form (MNA-SF) is another potential screening instrument, which consists of six items and takes fewer than five minutes to administer. The maximum score on the screening MNA is 14; a score greater than 12 indicates satisfactory nutrition, while a score of 11 or below is an indication to proceed to the comprehensive assessment, which consists of the remainder of the MNA items that classify patients into the following three nutritional levels: satisfactory, risk of malnutrition, and protein-calorie malnutrition.

Data supporting the benefits of preoperative nutritional support on postoperative outcomes are limited. However, when time allows, an abnormal nutrition screen should be addressed to optimize nutritional status before and after surgery. The type of feeding or nutritional support (oral supplementation, enteral, or parenteral) must be determined on an individual basis depending on patient factors, etiology of malnutrition, and type of surgery.

Malnutrition is highly prevalent in the older adult population and is associated with adverse outcomes. The identification of malnutrition in the preoperative period will help identify high-risk patients who require further evaluation. It also allows for potential nutritional supplementation before surgery and may inform the nutritional plan after surgery.

**Difficulty Swallowing:** Abnormal swallowing is common in older adults and can impair nutrition as well as be a risk factor for aspiration pneumonia. Cichero et al. defined oropharyngeal dysphagia as “difficulty eating or drinking.”<sup>41</sup> The authors felt that the true incidence of oropharyngeal dysphagia is difficult to determine; however, it increases with

admission to the hospital and is found in up to 55 percent of older adults in care settings. Oropharyngeal dysphagia is also associated with negative outcomes, including malnutrition, dehydration, aspiration pneumonia, and even death. In a cohort of older Japanese adults in long-term care, patients with suspected aspiration or suspected silent aspiration had worse nutritional status and higher dementia severity, showing the inter-relationship of these geriatric issues.<sup>42</sup> A systematic review of the outcomes of aspiration pneumonia identified risk factors in frail older adults as advanced age, severe dementia, and dysphagia.<sup>43</sup> Manabe et al. also evaluated risk factors for aspiration pneumonia in a survey of patients at geriatric medical and nursing centers in Japan. On multivariate analysis, both deterioration of swallowing function in the past three months and dementia were identified as risk factors for aspiration pneumonia.<sup>44</sup>

Bedside screening of swallowing function has been studied by Bowles et al., who evaluated patients undergoing cardiac surgery preoperatively and postoperatively for dysphagia using a 90-milliliter water swallow challenge protocol, a mini cognitive/speech screen, and a modified oral mechanism screen.<sup>45</sup> Nine percent of patients failed the swallow screen preoperatively, and 22 percent failed postoperatively. Of note, all patients who failed the screen preoperatively also failed postoperatively. Weinhardt et al. also evaluated the accuracy of bedside screening for dysphagia and compared the results by registered nurses and speech pathologists.<sup>46</sup> The bedside trial used lemon ice, applesauce, and water, including the evaluation of swallow, cough, and vocal quality for each of the three consistencies. There was 94 percent agreement between nurses and speech therapists, and the screen correctly identified those patients able to eat from a safe menu until further evaluation versus those at significant aspiration risk who needed to continue an NPO diet status. Finally, Suiter et al. evaluated the clinical utility of the 3-ounce water swallow test.<sup>47</sup> Passing the 3-ounce water test is a good predictor of the ability to tolerate thin liquids. However, it should be noted that failure of this test does not indicate inability to tolerate thin liquids since 71 percent of patients who failed were ultimately deemed to be safe for thin liquids after further evaluation.

Given the demonstrated impact of abnormal swallowing on the risk of aspiration pneumonia in the postoperative period, we propose screening older adults for abnormal swallowing prior to elective surgery. If the screen is positive, the patients should be evaluated by a speech therapist prior to surgery and a plan for resuming oral intake postoperatively should be documented. In addition, the potential aspiration risk should be communicated to anesthesia prior to surgery and to the care team following surgery. In the nonelective setting, older adult patients should be evaluated for swallowing dysfunction prior to resuming oral intake. If the screen is positive, the patient should be evaluated by speech therapist and a plan for resumption of oral intake should be documented.

**Palliative Care Assessment:** Palliative care is underutilized

within surgery. Rodriguez et al. evaluated the utilization of palliative care consultations by service at a single hospital over a four-year time period.<sup>48</sup> Only 15 percent of consultations were from the surgical service. In addition, surgical patients were older, more likely to be in the ICU at the time of consultation, and more likely to die in the hospital than patients referred from the medical service. These data suggest that there is significant room for improvement with involvement of palliative care earlier in surgical patients, before they become critically ill. In addition, Ernst et al. evaluated the frequency of palliative care consultation before and after implementation of a system-wide frailty screening program.<sup>49</sup> Not only did palliative care consultations increase after implementation of this frailty screening program, but surgeons increased consultations to palliative care before surgery. Interestingly, surgical mortality also decreased for patients who received palliative care consultation, perhaps due to a decrease in nonbeneficial surgery.

A proposed screening instrument for palliative care need is the simplistic but highly sensitive and specific “Surprise Question,” which has been validated in the surgical population.<sup>50</sup> The practitioner simply asks themselves the following: Would I be surprised if the patient in question were to die in the next 12 months, even if surgery is performed? If the answer is “no,” then the patient should be referred for palliative care assessment.

The goal of the preoperative palliative care assessment is to identify older adult patients who could benefit from palliative care involvement before surgery. A potential outcome from this increased identification of high-risk patients could be increased attention to discussion about goals of care and decision making as well as symptom management.

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## 5.7 Management Plan for Patients with Positive Geriatric Vulnerability Screens

### Definition and Requirements

For all patients identified as high risk based on the geriatric vulnerability screens (see **Standard 5.6** for further details), there must be a documented management plan directed at positive findings from the screens. The plan(s) may be guided by established protocols or an evaluation by other health care providers commensurate with individual patient needs.

In **elective** settings, management plans for positive screens must be implemented preoperatively.

In **non-elective** settings, management plans for positive screens must be addressed within the 48-hour postoperative window, or as soon as is clinically appropriate.

### Documentation

- **Medical Record:**
  - Focused management plans directed at positive geriatric vulnerability screens

### Rationale for Standard 5.7

Examples of potential management plans that could be implemented for patients with a positive geriatric vulnerability screen include:

- Age  $\geq$  85 years: formal evaluation by a health care provider with geriatrics expertise
- Impaired cognition: formal evaluation by neurology (if never evaluated previously); implementation of delirium prevention bundle after surgery
- Delirium risk: implementation of delirium prevention bundle after surgery
- Impaired functional status: referral to social work to discuss potential placement options after surgery; early engagement of physical/occupational therapy after surgery
- Impaired mobility: preoperative referral by physical therapy or early engagement of physical/occupational therapy after surgery

- Malnutrition: preoperative referral to nutrition to evaluate for nutritional supplements prior to surgery
- Difficulty swallowing: referral to speech pathology (preoperative or immediately postoperative prior to diet advancement); implementation of aspiration precaution protocols after surgery
- Need for preoperative palliative care assessment: referral to palliative care

However, it should be noted that these are just examples and not meant to be an exhaustive list of management plans. The goal of this standard is to use the results of the geriatric vulnerability screens to develop personalized management plans for older adults undergoing surgery with the goal of minimizing potential complications after surgery (for example, postoperative delirium, functional decline, aspiration, and so on). The management plan may also depend on the number of positive geriatric vulnerability screens. A patient who only screens positive for the palliative care assessment may only require preoperative referral to palliative care, while a 90-year-old patient with impaired cognition, mobility, and nutrition could potentially benefit from formal evaluation by a health care provider with geriatric expertise to further address all of the positive geriatric vulnerability screens.

## 5.8 Interdisciplinary Input or Conference for Elective, High-Risk Patients

### Definition and Requirements

In the elective setting, all patients identified as high risk based on the geriatric vulnerability screens (see **Standard 5.6** for further details) must be evaluated with interdisciplinary input after the implementation of focused management plans (see **Standard 5.7** for further details) and before surgery to reassess the indications, risks, and benefits of the proposed operation. This may be conducted in the form of an interdisciplinary conference or by obtaining input from at least the following health professionals:

- Surgery
- Anesthesia
- Nursing
- Case management, care transitions, or social work
- Health care provider with geriatric expertise\*

Interdisciplinary conferences may be fulfilled in-person or virtually. Preexisting conferences can meet this standard by introducing geriatric expertise into the conference.

Ultimately, interdisciplinary input must accomplish the following:

- Documentation of a consensus treatment recommendation based on interdisciplinary input
- Communication of recommendations to patients and their families/caregivers and other clinicians responsible for the care of the patients discussed

Health professionals from the following areas are recommended but not mandatory:

- Relevant medical specialties (for example, oncology, pulmonology, cardiology, and so on)
- Geriatric Surgery Nurse Champions
- Nutrition
- Palliative care
- Pharmacy
- Physical medicine and rehabilitation, physical/occupational therapy

*\*The role of “health care provider with geriatric expertise,” may be filled by either a licensed geriatrician or a provider with geriatric expertise/certification (for example, hospitalist/internist/advance practice provider with geriatric training).*

### Documentation

- **Medical Record:**
  - Interdisciplinary recommendations
  - Any updates or changes made to patient’s surgical plan of action
- Supporting documentation that defines the institution’s preoperative interdisciplinary evaluation process, which includes the following:
  - Process, protocol, or policy in place to ensure mandatory health professionals are contributing preoperative input to all high-risk patients
  - Process, protocol, or policy in place to communicate recommendations to patients and their families/caregivers and other clinicians responsible for the care of patients described

### Rationale for Standard 5.8

The care of the high-risk older adult surgical patient is complex and requires input from many health care professionals, much the way the care of the complex cancer patient does. Building on the model of the interdisciplinary tumor board, which brings all the specialists in cancer care together to define the “best” plan for each patient, an interdisciplinary case conference brings forth important distinct perspectives meaningful for high-risk older adult surgical patients. This conference will bring together all the disciplines involved in the surgical care of the older adult to discuss the best patient-centered management plan tailored for each individual older adult. Similar interdisciplinary conferences have been described for other specific surgical populations including bariatric surgery, patients with lung or rectal cancer, and patients with breast disease.<sup>1-4</sup>

At a minimum, input must be obtained from the disciplines of surgery, anesthesia, nursing, care transitions, and geriatrics. However, it should be noted that inclusion of other specialties should be considered as appropriate (for example, palliative care, rehabilitation, relevant medical specialties).

Outcomes from the interdisciplinary input or conference for high-risk older adults undergoing elective surgery might include the following:

1. Recommendation not to proceed with surgery and to instead pursue non-surgical alternatives
2. Recommendation to proceed with surgery pending additional workup and review of those results
3. Recommendation to change the type or extent of surgery depending on the individual's risk profile
4. Recommendation to proceed with surgery with guidelines for a patient-centered and tailored perioperative management plan with the goal of optimizing specific outcomes

There are multiple ways to satisfy this standard, including (1) development of a standalone conference that focuses on high-risk older adults undergoing elective surgery; (2) addition of interdisciplinary input to existing conferences (for example, tumor board); and (3) obtaining individual input from the necessary providers such that a consensus recommendation regarding surgery can be made. Regardless of how the input is obtained (for example, in-person conference, conference call), it is important that the recommendations be communicated to all involved providers as well as the patient and his or her family/caregiver(s).

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## 5.9 Surgeon-PCP Communication for Elective, High-Risk Patients

### Definition and Requirements

For all elective patients identified as high risk based on the geriatric vulnerability screens (see **Standard 5.6** for further details), the surgeon or surgeon's representative must communicate the goals of care and decision-making discussion to the patient's preferred primary care provider (PCP) or the provider designated by the patient as his or her "main doctor."

### Documentation

- **Medical Record:**
  - Documentation that the surgeon or surgeon's representative preoperatively communicated the goals of care and decision-making discussion to the patient's preferred PCP or the provider designated by the patient as his or her "main doctor"
- Process, protocol, or policy in place detailing the communication structure between surgeon and PCP regarding goals of care and decision-making discussions for elective, high-risk patients.

### Rationale for Standard 5.9

Communication is paramount for improving both continuity and the patient's experience of care. Though most literature discussing communication across disciplines is focused on transitions out of the hospital, effective transitions into the hospital are essential as well. Though not all patients have a PCP, those who do may appreciate PCP inclusion in the surgical decision-making process. In a nationally representative sample, 78 percent of adults in the U.S. reported having a usual source of care, which was strongly associated with positive patient perceptions of health care (in other words, reporting that a provider always listened, explained clearly, showed respect, and spent enough time).<sup>1</sup>

Preoperative communication between a surgeon or a surgeon's representative and the patient's PCP may contribute valuable information to surgical decision making, especially when the PCP knows the patient well. Such an open line of communication may also facilitate improved transitions at discharge. Additionally, updating the PCP about goals of care and decision-making conversations will improve care coordination and provide an opportunity for the PCP to provide any relevant input into the anticipated postoperative management or discharge plan.

Though few studies address preoperative coordination of care, important lessons may be extrapolated from post-discharge transitions. In a review of communication at the time of hospital discharge, direct communication between hospital physicians and PCPs occurred infrequently (3 to 20%) with discharge summaries often lacking key pieces of information. In fact, the vast majority of discharge summaries (90 to 92%) lacked data about patient or family counselling.<sup>2</sup> Additionally, early PCP follow-up after high-risk surgery is associated with a lower risk of hospital readmission (35% versus 20.4%,  $p < 0.001$ ).<sup>3</sup> The goal of this standard is to improve surgeon communication with the PCP for elective high-risk patients in order to help facilitate the transition both into and out of the hospital.

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## **Postoperative Management**

Standards 5.10-5.16

## 5.10 Return of Personal Sensory Equipment

### Definition and Requirements

There must be a process, protocol, or policy in place to identify and collect personal sensory equipment (for example, glasses, hearing aids, dentures, or any other devices essential to routine function) from patients with a plan to return these items immediately postoperatively.

### Documentation

- Process, protocol, or policy in place demonstrating that surgical inpatients are guaranteed the safe storage and prompt return of personal equipment during and after surgery, respectively.

### Rationale for Standard 5.10

The presence of significant vision or hearing impairment plays a role in the functional decline of older adults and may play a role in functional recovery after surgery. A prospective evaluation of geriatric patients by Keller et al. demonstrated a significant decrease in both ADL and IADL scores in patients with vision or hearing impairment.<sup>1</sup> Sensory impairments have also been implicated as risk factors for postoperative delirium, and as such, they were included as targeted areas of intervention in a multicomponent delirium prevention protocol described in a frequently referenced study to prevent delirium by Inouye et al.<sup>2</sup> Furthermore, in a recent systematic review, visual impairment was found to be a statistically significant predictor for delirium in hospitalized older adults.<sup>3</sup>

In addition, removable dentures are routinely taken out before surgery. Patients who are dependent on dentures for eating will have difficulty communicating and sustaining their nutritional needs without them. Therefore, prompt return after surgery is necessary.

Given the potential impact on functional decline, postoperative delirium, and the ability to eat, it is essential to establish a dependable process that ensures the prompt return of sensory aids and other personal equipment to the older adult postoperatively.

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## 5.11 Inpatient Medication Management

### Definition and Requirements

There must be processes, protocols, or policies in place to assess for and alert providers to the use of potentially inappropriate medications in the older surgical patient. The American Geriatrics Society (AGS) Beers Criteria® outlines a comprehensive list of medications to avoid, a subset of which pertains to those commonly used in the perioperative setting (for example, antiemetics, antihistamines, and so on). Avoidance and minimization of Beers medications is to be achieved through two distinct mechanisms:

1. Standardized order sets/bundles/pathways to protocolize medication management for geriatric patients
  - Templated order sets with Beers medications removed and alternatives provided
2. Process for flagging and reviewing inappropriate medications when they are ordered; strategies for this may include the following:
  - Daily pharmacy reviews of patients' medication orders
  - Embedded decision support tools within the electronic health record that provide alerts when a potentially inappropriate medication is prescribed
  - Provider education identifying surgically relevant Beers medications along with alternatives available within institutional formulary

### Documentation

- Process, protocol, or policy in place that ensures avoidance of potentially inappropriate medications as defined by the AGS Beers Criteria, particularly those commonly used in the perioperative period (for example, antiemetics, analgesics, antihistamines, and so on).
- Education materials given to providers regarding potentially inappropriate Beers medications.

### Rationale for Standard 5.11

Adverse drug events are responsible for a significant portion of morbidity and mortality in U.S. hospitals, as well as unnecessary health care costs.<sup>1</sup> Older adults are especially susceptible to adverse drug events owing to the prevalence of polypharmacy, decreased clearance of medications due to changes in renal and hepatic function, and presence of multiple medical comorbidities, which increase the likelihood of drug-drug and drug-disease interactions.<sup>2</sup> The Beers Criteria, initially developed in 1991, were designed to identify inappropriate medication use in nursing home residents and were applicable to only the frailest and sickest elderly populations. The Beers Criteria were reevaluated in 1997 with the goal of expanding the applicability to the other end of the spectrum, the independent community-dwelling older adult.<sup>3</sup>

The AGS Beers Criteria were most recently updated in 2019 and are applicable to all older adults except those in hospice or palliative care.<sup>4</sup> The expert panel updated the 2015 Beers Criteria by modified Delphi method to reach a consensus for the 2019 update. Notable additions to this version include grading the strength and quality of recommendations given regarding potentially inappropriate medications as well as the inclusion of exceptions to the AGS Beers Criteria to provide more clinically tailored recommendations. The latter of these additions highlights the importance of individualizing medication decision making while considering the guidelines issued by the AGS Beers Criteria.

The avoidance of potentially inappropriate medications in older adult surgical patients has been validated as a quality indicator and included in best practice guidelines.<sup>6-8</sup> The specific recommendation is that the prescribing practitioner should avoid medications that induce delirium postoperatively in older adults (strong recommendation, low quality of evidence). Specific classes of medications that should be avoided are benzodiazepines, anticholinergics, diphenhydramine, hydroxyzine, histamine2-receptor antagonists (for example, cimetidine), sedative-hypnotics, and meperidine.

There is evidence that decision-support tools can decrease the prescribing of potentially inappropriate medications. For example, Alagiakrishnan et al. used clinical decision support embedded within an electronic medical record to alert physicians to potentially inappropriate medications (based on the Beers Criteria), as well as to a decreased glomerular filtration rate, which might require dosage adjustments.<sup>9</sup> Approximately 36 percent of eligible encounters triggered an alert and the most common medications were hypnotics and anticholinergics.

There is also evidence to support the involvement of a pharmacist and/or decision support tools for the problem of polypharmacy. Patterson et al. performed a Cochrane Review in 2014 to evaluate interventions to improve the appropriate use of polypharmacy for older adults.<sup>10</sup> One intervention was computerized decision support, while the remaining interventions were complex, multi-faceted pharmaceutical approaches delivered by prescribers or pharmacists. The interventions were effective in decreasing inappropriate prescribing (as measured by the Beers criteria, for example) but the evidence was unclear for other outcomes such as readmission or medication-related problems.

Given the use of the Beers Criteria in best practice guidelines as well as research showing a relationship between inappropriate prescribing and adverse outcomes, each hospital must have a mechanism or process in place to avoid prescription of potentially inappropriate medications to older adults undergoing surgery.

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## 5.12 Opioid-Sparing, Multimodality Pain Management

### Definition and Requirements

There must be opioid-sparing, multimodality pain management for all postoperative patients that includes consideration of the following components:

- Utilize opioid-sparing techniques (for example, pre-, intra-, or postoperative non-opioid analgesics or use of regional analgesia).
- Appropriately titrate medications for the increased sensitivity and altered physiology of the older adult.
- Avoid other potentially inappropriate analgesics as defined by the AGS Beers Criteria (for example, barbiturates, benzodiazepines, nonbenzodiazepine hypnotics, pentazocine, meperidine, skeletal muscle relaxants, and non-Cox non-steroidal anti-inflammatory drugs).
- Include a prophylactic pharmacologic bowel regimen.
- Consider use of non-medication-based strategies for pain control.

### Documentation

- Process, protocol, or policy in place outlining opioid-sparing, multimodality pain management strategies employed in the postoperative setting.

### Rationale for Standard 5.12

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards mandate that a hospital assess and manage patients' pain. Strategies should include both pharmacologic and non-pharmacologic interventions. To reflect a patient-centered approach, they should be consistent with the patient's age, condition, and ability to understand and participate in postoperative pain management.

Older adults have more complex pain management after surgery since they are more sensitive to opioid pain medications, and use of these medications can cause complications, such as cognitive impairment, constipation, delirium, and falls. In addition, inadequate pain control is common after surgery and is a risk factor for postoperative delirium. Perioperative analgesia in the older adult was included in the ACS NSQIP/AGS Best Practices Guideline: Optimal Perioperative Management of the Geriatric Patient.<sup>1</sup> A clinical practice guideline on the management of postoperative pain (not specific for, but inclusive of, the geriatric population) was also published by the American Pain Society (APS), the American Society of Regional Anesthesia and Pain Medicine (ASRA), and the American Society of Anesthesiologists (ASA)

Committee on Regional Anesthesia, Executive Committee, and Administrative Council in 2016.<sup>2</sup> Some of the relevant recommendations include the following:

- Clinicians provide patient- and family-centered, individually tailored education to the patient, including information on treatment options for postoperative pain management. They document the plan and goals for postoperative pain management (strong recommendation, low-quality evidence).
- Clinicians offer multimodal analgesia or the use of a variety of analgesic medications and techniques combined with non-pharmacological interventions for the treatment of postoperative pain (strong recommendation, high-quality evidence).
- Clinicians consider the use of cognitive-behavioral modalities in adults as part of a multimodal approach (weak recommendation, moderate-quality evidence).

There are also more specific recommendations that may be included in a pain management protocol, including (1) preference of oral route over intravenous; (2) avoidance of intramuscular route; (3) use of patient-controlled analgesia if intravenous route required; and (4) addition of acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs) as part of a multimodal analgesia plan. As a caveat for the use of NSAIDs in the older adult population, the AGS Beers Criteria provides targeted recommendations, particularly for those with diminished renal function.

In addition, other key components of an opioid-sparing, multimodal pain management plan include the avoidance of potentially inappropriate medications as described by the AGS Beers Criteria (see **Standard 5.11** for further details), use of a prophylactic bowel regimen given the propensity for constipation in older adults, and an emphasis on non-pharmacologic treatment modalities for pain (for example, mindful breathing, superficial heat or cold packs, and so on).

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## 5.13 Standardized Postoperative Care

### Definition and Requirements

Postoperative care for all geriatric surgical patients must—in addition to what is routinely performed (for example, operative recovery relative to specific procedure, deep vein thrombosis prophylaxis, incentive spirometry)—address the following:

- **Delirium:**
  - Prevention of delirium using non-pharmacologic interventions
  - Recognition of delirium through daily screening with validated tool (for example, confusion assessment method [CAM])
  - Treatment of delirium by identifying and treating or discontinuing precipitating factors through non-pharmacologic and pharmacologic interventions (for example, correcting electrolyte derangements, treating infections, minimizing tethering devices [such as intravenous fluids, Foley catheters, restraints, and so on])
- **Mobility and Function:**
  - Ambulation or non-ambulatory mobilization by postoperative day one
  - Fall prevention, including daily evaluation of need for tethering devices
  - Daily assessment of pressure ulcer risk and skin integrity
- **Nutrition and Hydration:**
  - Adequate postoperative nutrition and hydration, preferably by enteral route
  - Bowel regimen, especially for those requiring opioid pain medications
  - Aspiration precautions (for example, elevated head-of-bed, upright post-prandial positioning, and so on)

The above issues may be addressed through pathways, bundles, order sets, protocols, or a combination thereof.

### Documentation

- Process, protocol, or policy in place to address delirium, mobility and function, and nutrition and hydration.

### Rationale for Standard 5.13

Pathways, bundles, and order sets allow optimal care processes to become “hardwired” into the system. The most successful systems make the best action the default action or the easiest to do. When implemented, these pathways, bundles, and order sets will assure the delivery of optimal care to the older adult surgical patient.

**Prevent, recognize, and treat delirium.** Delirium is a common complication after surgery and is associated with worse outcomes, including prolonged hospitalization, institutional discharge, readmission, and death. It is estimated that 30 to 40 percent of delirium episodes are preventable.<sup>1</sup> Given the negative outcomes associated with postoperative delirium, there needs to be an emphasis on delirium prevention.

Delirium prevention was included in the ACS NSQIP/AGS Best Practices Guideline: Optimal Perioperative Management of the Geriatric Patient.<sup>2</sup> Examples of delirium prevention strategies include education targeted to health care professionals about delirium as well as multicomponent, interdisciplinary non-pharmacologic interventions, which will be discussed in more detail below.

The AGS Clinical Practice Guideline for Postoperative Delirium in Older Adults was published in 2015.<sup>3,4</sup> An interdisciplinary, multispecialty expert panel with 23 members was assembled. A literature review was performed, and abstracts were screened by the panel co-chairs; evidence tables and quality ratings were created for the included articles. The clinical practice guideline provides recommendation statements that are strong (the benefits clearly outweigh the risks or that the risks clearly outweighed the benefits), weak (current level of evidence or potential risks of the treatment did not support a strong recommendation), or insufficient evidence.

With regards to delirium prevention, the following strong (using the American College of Physicians [ACP] Guideline Grading System) recommendations were made:<sup>5,6</sup>

- Multicomponent non-pharmacologic interventions delivered by an interdisciplinary team should be administered to at-risk older adults to prevent delirium. Core elements of these interventions include specific behavioral and non-pharmacologic strategies for the prevention of delirium:
  - Sensory enhancement (ensuring glasses, hearing aids, or listening amplifiers)
  - Mobility enhancement (ambulating at least twice per day, if possible)
  - Cognitive orientation and therapeutic activities (tailored to the individual)
  - Pain control with scheduled acetaminophen, if appropriate
  - Cognitive stimulation (if possible, tailored to the individual's interests and mental status)
  - Simple communication standards and approaches to prevent the escalation of behaviors
  - Nutritional and fluid repletion enhancement
  - Sleep enhancement (daytime sleep hygiene, relaxation, nonpharmacological sleep protocol, and nighttime routine)
  - Medication review and appropriate medication management
  - Daily rounding by an interdisciplinary team to reinforce the interventions
- Ongoing educational programs regarding delirium should be provided for health care professionals.
- Pain management (preferably with non-opioid medications) should be optimized to prevent postoperative delirium.
- Medications with high risk for precipitating delirium should be avoided (benzodiazepines, diphenhydramine, promethazine, and so on).
- Cholinesterase inhibitors should not be newly prescribed to prevent or treat postoperative delirium.

Other components recommended by the ACS NSQIP/AGS Best Practices Guideline: Optimal Perioperative Management of the Geriatric Patient include bedside presence of a family member whenever possible, adequate oxygenation, prevention of constipation, and minimization of patient tethers (for example, Foley catheter, periodic removal of cardiac monitoring cords or sequential compression devices). It is important to note that there is strong evidence in support of multicomponent interventions for the prevention of delirium. A recent systematic review by Siddiqi et al. identified seven studies, three of which were in the surgical setting that demonstrated a decreased incidence of delirium with the implementation of multicomponent delirium prevention protocols.<sup>1</sup> These interventions (as described above) when implemented and provided by an interdisciplinary team have reduced the incidence of delirium by 30 to 40 percent.<sup>1</sup>

With regards to support for **screening**, the health care team may consider instituting daily postoperative screening of older adults to initiate treatment as early as possible; the individual performing the screening should be trained in the assessment of delirium and should use a validated delirium screening instrument. The statement was likely phrased to only consider because there are no randomized trial data examining routine delirium screening for hospitalized patients and there are potential problems with misdiagnosis of delirium.

With regards to support for **evaluation of precipitating factors**, a strong recommendation is made that “a medical evaluation should be performed to identify and manage underlying contributors to delirium.” Precipitating factors for potential workup are outlined here:

- Hypoxia → vital signs including pulse oximetry
- Availability of sensory aids → no specific evaluation consideration although poor vision/hearing is a potential precipitating factor that could occur if the patient does not have access to his or her sensory aids after surgery
- Presence of infection → physical examination, urinalysis, chest radiograph, blood/sputum/urine cultures, consider imaging of surgical site
- Electrolyte abnormalities → laboratory evaluation
- Uncontrolled pain → physical examination
- Urinary retention or fecal impaction → no specific evaluation consideration but these diagnoses can be considered through review of nursing flow sheets
- Current medications → medication reconciliation
- Occult alcohol or drug withdrawal → physical examination, social history, preadmission medication reconciliation

With regards to support for **treatment**, a weak recommendation was made for the following two statements:

1. “Multicomponent non-pharmacologic interventions implemented by an interdisciplinary team may be considered when an older adult is diagnosed with postoperative delirium to improve clinical outcomes.”
2. “The use of antipsychotics (for example, haloperidol, risperidone, olanzapine, quetiapine, or ziprasidone) at the lowest effective dose for the shortest possible duration may be considered to treat delirious patients who are severely agitated or distressed or who are threatening substantial harm to self and/or others.”

There are also specific strong recommendations regarding not using cholinesterase inhibitors to treat postoperative delirium, not using benzodiazepines as first-line treatment of agitation associated with delirium, and avoiding antipsychotics and benzodiazepines for treatment of hypoactive delirium. The multicomponent non-pharmacologic strategies are similar to those for delirium

prevention but also include strategies for de-escalation of agitation, education of nurses and physicians, and proactive geriatric consultation.

In summary, hospitals should incorporate elements of delirium screening, prevention, and management into a standardized delirium pathway, bundle, or order set for older adults undergoing surgery.

**Promote mobility/function; prevent falls and pressure injury.** In a prospective observational study by Lawrence et al., a substantial portion of older adults undergoing major abdominal procedures had protracted functional recovery.<sup>7</sup> Up to 50 percent of patients were still recovering their function and mobility six months after the operation.<sup>7</sup> Early ambulation or mobilization after surgery is critical to the prevention of postoperative functional decline in older adults. The concept of early ambulation (by postoperative day two) or mobilization (by postoperative day two) was validated as a quality indicator for elderly surgical patients based on the work by McGory et al.<sup>8</sup> Since those quality indicators were published in 2009, increased awareness of mobility's importance in preventing postoperative functional decline has changed the standard of care to postoperative day one. In addition, early mobilization was suggested as an intervention for preventing functional decline in the ACS NSQIP/AGS Best Practices Guideline: Optimal Perioperative Management of the Geriatric Patient.<sup>2</sup>

Nurse-driven protocols focusing on early mobilization have been found to decrease length of stay and improve functional outcomes in hospitalized older adults.<sup>9,10</sup> Early mobilization is just one component of “fast track” or “enhanced recovery” protocols, which have demonstrated improved postoperative outcomes, including mortality, morbidity, and length of stay.<sup>11</sup> A recent Cochrane Review evaluated randomized controlled trials using enhanced recovery protocols for upper gastrointestinal, liver, and pancreatic surgery.<sup>12</sup> The authors concluded that enhanced recovery protocols may reduce length of stay (and cost) and that future trials should minimize the risk of bias as well as include longer-term outcomes at three months to one year after surgery (for example, mortality, quality of life) as well as time to return to work or normal level of functioning.

There is also some evidence to show that comprehensive geriatric care leads to improved mobilization outcomes within the cohort of patients undergoing hip fracture surgery. Taraldsen et al. performed a randomized, controlled trial of early physical behavior and function after hip fracture surgery in patients receiving comprehensive geriatric care or usual orthopaedic care.<sup>13</sup> The authors found that patients treated with comprehensive geriatric care had a longer period of time spent upright, more upright events, and better lower limb function early after surgery than those receiving usual

orthopaedic care. Intervention patients also had more time and longer periods spent upright up to one year after hip fracture surgery.<sup>14</sup>

Falls are common in hospitalized older adults, particularly those with gait abnormalities, dementia, and sensory impairment.<sup>15</sup> Falls in the hospital can have severe consequences, with as many as 5 percent resulting in severe injury.<sup>16</sup> Multifactorial interventions, particularly those emphasizing mobility exercises, environmental adaptations, and medication review have been found to be effective in preventing falls in acute care hospitals.<sup>17</sup>

Promotion of mobility should also inherently decrease the risk of pressure ulcers. In addition, the ACS NSQIP/AGS Best Practices Guideline: Optimal Perioperative Management of the Geriatric Patient recommends that health care teams should implement multicomponent interventions to prevent and treat pressure ulcers in the postoperative patient at risk for developing pressure ulcers.<sup>2</sup> Examples of pressure ulcer prevention and treatment include the following:

- Reduction/minimization of pressure, friction, humidity, shear force (for example, turn patients frequently, avoid sliding patients, use special foam or lower air pressure mattresses, consultation with physical therapy/physiatry)
- Restoration of nutrition (for example, evaluate adequacy of current food intake, vitamin/mineral/meal supplements, medications to enhance appetite, enteral or parenteral nutrition if needed, and evaluation and treatment of other chronic illnesses)
- Wound care (for example, debride nonviable/devascularized tissue, allow healing by secondary intention with dressing changes or negative pressure therapy, consider indwelling catheter or colostomy in incontinent patients)

A systematic approach is important to prevent functional decline, falls, and pressure ulcers in the acute hospital setting.<sup>18</sup> Collaboration between nursing, physical therapy, occupational therapy, and physical medicine and rehabilitations physicians will be critical to developing a pathway, bundle, or order set to promote mobility/mobility and prevent falls and pressure ulcers.

**Promote nutrition and hydration.** Promoting optimal nutrition for the older adult surgical patient requires a well-coordinated interdisciplinary team with nursing, speech therapy, occupational therapy, and nutrition. Older adults, particularly those with dementia, may have difficulty maintaining adequate nutrition for multiple reasons, including inability to feed oneself, difficulty swallowing, and respiratory illnesses.<sup>19</sup> Other potential problems may include missing teeth, issues with the fit of any dentures/appliances, difficulty chewing, and poor appetite.<sup>20</sup> In addition, advancing age promotes the development of anorexia

due to age-related changes in satiety control mechanisms, gastrointestinal motility, smell and taste, and lifestyle factors like poor cooking skills or loneliness.<sup>8</sup> Nursing care strategies to improve nutrition may range from alleviating dry mouth, to efforts to improve and maintain nutritional intake (providing an environment conducive to meals, oral supplements or additional nutritional support as needed), to engaging in collaboration with fellow health care providers (consulting with dietician/nutrition, pharmacy, social work, occupational therapy, speech therapy).<sup>21</sup> Bundles or order sets to promote nutritional repletion should include the following elements: access to dentures, food that is an easy consistency to chew, supplemental snacks, easy access to water to promote hydration, meals out of bed or in an upright position, and a standardized way to track oral intake/caloric input. Collaboration between nursing, speech pathology, and nutrition staff will be critical to developing a pathway, bundle, or order set to promote nutrition and hydration.

Difficulty swallowing, in addition to affecting a patient's nutritional status, poses an increased risk for aspiration pneumonia. While the true incidence of oropharyngeal dysphagia is difficult to determine, its prevalence increases with hospital admissions and is found in up to 55 percent of older adults in these settings.<sup>22</sup> A systematic review of the outcomes of aspiration pneumonia identified risk factors in frail older adults as advanced age, severe dementia, and dysphagia.<sup>23</sup> Given the demonstrated impact of abnormal swallowing on the risk of aspiration pneumonia in the postoperative period, it is recommended that older adult patients be evaluated for swallowing dysfunction prior to resuming oral intake. There should be heightened vigilance for aspiration, and the patient should be placed on aspiration precaution protocols postoperatively (for example, elevated head-of-bed, upright post-prandial positioning, and so on). If available, a speech therapist should evaluate the patient and develop a plan for resumption of oral intake.

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## 5.14 Interdisciplinary Care for High-Risk Patients

### Definition and Requirements

For all patients identified as high risk based on the geriatric vulnerability screens (see **Standard 5.6** for further details), initial postoperative care must be provided by interdisciplinary health care professionals. Members of this interdisciplinary team can include, but are not limited to:

- Surgery
- Nursing
- Care transitions/social work/case management
- Physical therapy/occupational therapy
- Health care provider with geriatric expertise\*

Health professionals from the following areas must participate as the clinical situations demand. For example, palliative care must participate if the patient required palliative care consultation preoperatively or during the surgical admission.

- Pharmacy
- Nutrition
- Relevant medical specialties (for example, oncology, cardiology, nephrology, and so on)
- Palliative care
- Inpatient pain service

Recommendations by participating members of the interdisciplinary team must be documented daily, commensurate with the needs of the patient. They must address the preoperative geriatric vulnerabilities raised and addressed by the interdisciplinary input or conference (see Standard 5.8 for further details).

*\*The role of “health care provider with geriatric expertise” may be filled by either a licensed geriatrician or a provider with geriatric expertise/certification (for example, hospitalist/internist/advance practice provider with geriatric training).*

### Documentation

- **Medical Record:**
  - Recommendations from members of the geriatric interdisciplinary care team
- Process, protocol, or policy in place stating high-risk older adults are cared for by an interdisciplinary team with geriatric expertise that communicates and documents recommendations daily, commensurate with the acuity of the patient.

### Rationale for Standard 5.14

The concept of interdisciplinary care of older adults undergoing surgery is not new and has been utilized previously within the fields of orthopaedic surgery and trauma. Within orthopaedic surgery, multiple studies have evaluated the benefits of an orthogeriatric service. Kristensen et al. demonstrated that care for elderly hip fracture patients on an orthogeriatric unit (geriatrician integrated within interdisciplinary team) compared with regular care (geriatrics or medicine consult available on request) resulted in higher quality of care (using process measures) and lower 30-day mortality.<sup>1</sup> Folbert et al. also demonstrated improved outcomes with the interdisciplinary treatment approach of the Geriatric Fracture Center, including significantly decreased readmissions and complications after surgery.<sup>2</sup> Several studies have also demonstrated the benefit of interdisciplinary nutrition care for hip fracture patients and found improved nutritional intake while in the hospital as well as fewer malnourished patients at three-month follow-up.<sup>3,4</sup> Finally, a systematic review and meta-analysis by Grigoryan et al. demonstrated that orthogeriatric collaboration in patients with hip fracture led to a significant reduction in postoperative mortality.<sup>5</sup> Within trauma, Olufajo et al. evaluated the impact of integrating geriatric consults into the routine care of trauma patients older than 70 years.<sup>6</sup> The authors found that routine geriatrics consults resulted in more referrals for cognitive evaluation, improved documentation of delirium, more do-not-resuscitate orders, and decreases in both mortality and intensive care unit readmission. Geriatric risk factors prevalent in all older adults like malnutrition and cognitive impairment are best managed by interdisciplinary care teams. As such, all high-risk older adults undergoing inpatient surgery should be cared for by interdisciplinary care teams that focus on geriatric-specific issues.

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## 5.15 Revisiting Goals of Care for ICU Patients

### Definition and Requirements

Goals of care must be revisited when an older adult experiences an unexpected escalation of care to the ICU and must be readdressed at least every three days for all ICU patients.

### Documentation

- **Medical Record:**
  - Revisited goals of care—and any changes thereof—for patients with an unexpected ICU admission and at least every three days during a patient’s ICU stay
    - Revised goals of care may include but are not limited to:
      - Changes in code status
      - Desire for life-sustaining treatments
      - Palliative care involvement
      - Changes to medical proxy

### References

1. Kodali S, Stametz RA, Bengier AC, Clarke DN, Layon AJ, Darer JD. Family experience with intensive care unit care: Association of self-reported family conferences and family satisfaction. *J Crit Care.* 2014;29(4):641-644.
2. Seaman JB, Arnold RM, Scheunemann LP, White DB. An integrated framework for effective and efficient communication with families in the adult intensive care unit. *Ann Am Thorac Soc.* 2017;14(6):1015-1020.

### Rationale for Standard 5.15

Unplanned intensive care admissions for equal to or greater than three days or an escalation of care could signify clinical deterioration. Such changes should prompt health care providers, patients, and their families/caregivers to meet and review how well the provided clinical care aligns with patient goals. Families and caregivers for whom a family conference occurred in the ICU scored significantly higher in decision-making satisfaction when compared with those reporting no family conferences.<sup>1</sup> In addition, family meetings can be a good mechanism to share information about prognosis as well as the patient’s preferences and values and is especially suitable for facilitating high-quality deliberation about difficult decisions. The framework outlined by Seaman et al. outlines five goals for clinician-family communication: (1) establishing a trusting relationship; (2) providing emotional support to families; (3) helping families to understand diagnosis, prognosis, and treatment options; (4) allowing clinicians to understand the patient as a person; and (5) creating conditions for careful deliberation about difficult decisions.<sup>2</sup> These goals for clinician-family communication align well with the current standard, which seeks to revisit goals of care for patients who require unexpected admission to the ICU and deliberate revisitation of those goals at least every three days for all ICU patients.

## 5.16 Assessment of Geriatric Vulnerabilities at Discharge

### Definition and Requirements

All patients must undergo geriatric vulnerability screens at discharge to assess for changes in vulnerability during their hospital stay. An appropriate plan of action to address identified deficits must be documented in the medical record as part of the discharge documentation.

- **Geriatric Vulnerabilities Assessed at Discharge:**
  - Impaired cognition
  - Delirium risk
  - Impaired functional status
  - Impaired mobility
  - Malnutrition

### Documentation

- **Medical Record:**
  - Results of geriatric vulnerability screens at discharge
  - All identified deficits must be accompanied by plans to address them

### Rationale for Standard 5.16

As mentioned in the rationale for **Standard 5.6**, the ACS GSV Program does not require strict adherence to a specific set of screening tools. The ACS GSV Program does, however, strongly recommend that the same screening tools used in preoperative assessment are used at discharge for internal consistency and meaningful comparison.

The same preoperative characteristics that increase the risk for postoperative complications in the older adult may, and often will, persist or worsen through the hospitalization and post-discharge. A study of hip fracture patients demonstrated that at the time of discharge, 17 percent of patients had active clinical issues and 41 percent had one or more new impairments (bowel or bladder incontinence, inability to get out of bed, and/or decubitus ulcers).<sup>1</sup> To assume that clinical issues have resolved by discharge or that a patient has returned to baseline cognitive and functional status would be a mistake. Reassessment at the time of discharge for geriatric vulnerabilities is essential for continued high-quality care and provides further prognostic information for the post-discharge course.

In a study of patients with heart failure, those with cognitive impairment identified on Mini-Cog had a significantly increased risk of post-discharge death or readmission.<sup>2</sup> Among hospitalized older adults, impaired cognition is significantly associated with functional decline by one month post-hospitalization.<sup>2</sup> Compared with those with normal cognition, adults who experienced subclinical delirium had significantly greater deterioration in their ability to perform ADLs by one month after hospitalization, while those with clinically apparent delirium experienced an even greater decline.<sup>2</sup> Many features associated with increased post-discharge health care utilization are consistent across settings and cultures. In a multi-national prospective cohort, older adults with functional impairment were at high risk for repeat hospitalizations.<sup>3</sup> Malnutrition is also associated with adverse outcomes after discharge. Sharma et al. found that malnutrition was associated with a significantly higher risk of readmissions or death within seven days (OR 4.57, 95% CI 1.69–12.37) and within eight to 180 days (OR 1.98, 95% CI 1.19–3.28).<sup>4</sup> The results of the aforementioned literature highlight the importance of reassessing geriatric vulnerabilities at the time of discharge from the hospital to facilitate the transition to home and ultimately decrease the risk of readmission.

The AGS, ACP, Society of Hospital Medicine (SHM), American College of Emergency Physicians (ACEP), and the Society for Academic Emergency Medicine (SAEM) have addressed the issue of quality gaps in transitions of care between inpatient and outpatient settings through the Transitions of Care Consensus Conference (TOCCC), which proposed standards for the minimal data elements of a transition record and includes documentation of the patient's cognitive status.<sup>5</sup> The Society for Post-Acute and Long-Term Care Medicine and the American Medical Directors Association (AMDA) Clinical Practice Guidelines for Transitions of Care in the Long-Term Care Continuum states that “changes from pre-admission baseline (for example, change in ability to communicate, cognitive issues, functional decline)” should be included as recommended elements of a discharge or course-of-treatment summary for every transitioning patient.<sup>5</sup>

A cognitive, function/mobility, and nutritional assessment at discharge will provide a snapshot of the older adult's health status and identify any changes from baseline that have occurred during the hospitalization. The high-risk geriatric vulnerability screens used preoperatively should be used for pre-discharge assessment (see **Standard 5.6** for further details). These screens will provide the information necessary to design an appropriately focused post-discharge plan and thereby promote a safe transition home or to a post-acute care facility.

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## References

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## **Transitions of Care**

### Standards 5.17-5.18

## 5.17 Discharge Documentation and Hand-Off Communication

### Definition and Requirements

In addition to what is routinely reported in discharge documentation, two components of health status pertinent to the geriatric surgical patient must be documented in the discharge paperwork:

1. Any deficits discovered on pre-discharge screens along with the plan of action to address each vulnerability (see **Standard 5.16** for further details).
2. Information regarding common geriatric syndromes, including risk factors for functional decline, falls, delirium, and how to respond to each if it occurs after discharge.

The contents of the discharge summary must be discussed with the patient and/or his or her caregiver, and a copy must be provided to:

- Patient or caregiver(s)
- PCP or the patient's main doctor
- Health professional assuming care if the patient is discharged to a non-home facility

### Documentation

- **Medical Record:**
  - Documentation of any deficits found on pre-discharge screens along with the plan of action to address each vulnerability
  - Information regarding common geriatric syndromes, including risk factors for functional decline, falls, delirium, and how to respond to each if it occurs after discharge
  - Follow-up appointment with PCP and surgeon or information about how to schedule an appointment and in what time frame
- Process, protocol, or policy in place describing the review of the contents of the discharge summary with the patient.
- Process, protocol, or policy in place for ensuring the information contained within the discharge documentation is distributed to the required individuals.

### Rationale for Standard 5.17

Post-discharge transitions pose challenges for older adults, especially those with complex comorbidities and other high-risk characteristics. Nearly 20 percent of older adults are readmitted within 30 days of discharge from the hospital, at an estimated cost of more than \$17.4 billion annually.<sup>1</sup> Best practices around care transitions help reduce readmissions and improve patient outcomes.<sup>2</sup>

The discharge summary provides concrete documentation of key patient care information. In line with the TOCCC standard for coordinating clinicians and the AMDA guideline, the standards herein require communication between the surgeon or surgeon's representative, the PCP, the health care professional assuming responsibility of the patient (if the patient is not going home) and, importantly, the inclusion of the patient and caregivers in the communication loop. The TOCCC Care Plans/Transition Record proposed a minimal set of data elements that should be included in the transition record.

Specific to the realm of surgical care, providing operative details is essential for high-quality transitions of surgical patients. Furthermore, information about the postoperative course and any complications may be invaluable for a patient presenting in the post-discharge period to hospitals other than the index hospital. In a study of care fragmentation, 25 percent of surgical readmissions among older patients occurred at a hospital that was not the index hospital, and patients readmitted to a different hospital had nearly 50 percent higher odds of death.<sup>3</sup>

Patient education around common geriatric syndromes has been shown to reduce the rate of adverse outcomes such as falls.<sup>4</sup> Older adults, compared with their younger cohorts, have a diminished physiologic reserve and experience a higher intensity of hospital-associated deconditioning.<sup>5</sup> In addition to preoperative evaluation (see **Standard 5.6** for further details), a focused reassessment of geriatric vulnerabilities at discharge allows for the recognition of any insults to a patient's cognitive, functional, or nutritional status that may have occurred as a result of the surgical admission. Patients and caregivers feel prepared and empowered when they are aware of warning symptoms and know actions to take when they arise. Patient and caregiver education programs geared toward geriatric-specific issues have been shown to change caregiver and patient behavior, reduce

stress and anxiety, and improve quality of life.<sup>6,7</sup> Therefore, in addition to reassessing for geriatric vulnerabilities and educating patients and their caregivers of their implications, focused plans for how any newly identified deficits will be addressed should be developed and clearly documented.

In summary, smooth discharge transitions are of utmost importance in this vulnerable patient population. Discharge summaries serve as a resource for the patient once they return home and are invaluable to physicians involved in their care in the postoperative period.

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7. Parker D, Mills S, Abbey J. Effectiveness of interventions that assist caregivers to support people with dementia living in the community: A systematic review. *Int J Evid Based Healthc.* 2008;6(2):137-172.

## 5.18 Communication with Post-Acute Care Facilities

### Definition and Requirements

There must be a process, protocol, or policy in place addressing the communication structure between the institution and post-acute care facilities, including:

- A process, protocol, or policy for two-way communication between post-acute care facilities and the institution
- A process, protocol, or policy to track the quality of care at the post-acute care facilities through publicly reported measures (for example, rates of mortality, pressure ulcer development or progression, use of restraints, falls, and antipsychotic drug use)

### Documentation

- Process, protocol, or policy in place for establishing formal communication between the discharging institution and the receiving post-acute care facility and for measuring outcomes.
- Provide list of discharge locations/post-acute care facilities associated with the institution and their publicly reported measures.

### Rationale for Standard 5.18

Many older adults are unable to go home after surgery and hospitalization. In a study using the ACS NSQIP database, increased age alone ( $\geq 85$ ) was a significant risk factor for discharge to post-acute care (OR 9.17; 95% CI, 8.84–9.50).<sup>1</sup> Additional factors associated with increased risk of discharge to post-acute care include septic shock, ventilator dependence, ASA Physical Status Classification of 4 or 5, and total dependence in ADLs.<sup>1</sup> Geriatric-specific risk factors like functional decline and cognitive impairment have also been found to be significantly associated with non-home discharge.<sup>2</sup>

It is clear that there must be open lines of communication between the acute care hospital and the receiving facility.<sup>3</sup> For example, medications are frequently changed during transitions of care. One study identified that on average three medications were altered during transfer from nursing home to hospital, and 1.5 medications were altered on transfer from hospital to nursing home. Each of these changes carried with it a risk for adverse drug events (ADEs) of 4.4 percent and, while most of the medication changes occurred in the hospital, the majority of ADEs occurred in the nursing home.<sup>4</sup> Although the term “discharge” is routinely used, responsibility for care does not end abruptly at discharge. Instead, the discharging health care professional should maintain accountability for the health of the older adult until the receiving health care professional assumes the management role.

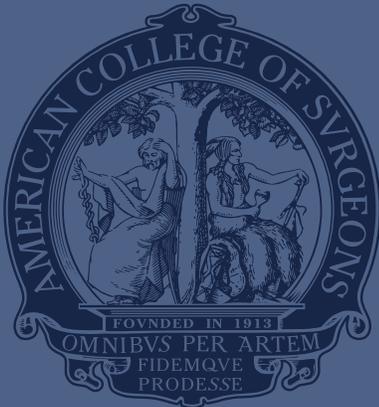
Unplanned readmission from post-acute care may suggest poor transitions from the acute-care setting. The rates of readmission vary depending on the older adult’s comorbidity burden and their living situation (whether they are community-dwelling or live in a nursing home). Readmission rates may also vary based on the quality of care delivered at the post-acute care facility. One study found a two-fold variation in readmission rates between different nursing homes.<sup>4</sup> Given this, it is important to have a process in place to track the quality of care provided at post-acute care facilities. For example, the Centers for Medicare and Medicaid Services (CMS) launched the Nursing Home Compare website, [medicare.gov/nursinghomecompare](http://medicare.gov/nursinghomecompare), in 1998. Nursing Home Compare is available free of charge to the public, and it tracks quality indicators (including percent of residents with pressure ulcers, percent of residents with urinary tract infection, percent of residents with functional decline during their stay, and so on) for every Medicare- and Medicaid-certified nursing home in the country.

In summary, this standard aims to improve transitions with post-acute care by promoting formal policies and procedures by which transitions occur, including a formal transfer relationship and communication mechanism and outcomes measurement. To promote accountability, the acute-care hospital must approach the quality of post-acute care systematically to understand the quality of care delivered to its own patients after they transition to another setting.

### References

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2. Berian JR, Zhou L, Hornor MA, et al. Optimizing surgical quality datasets to care for older adults: Lessons from the American College of Surgeons NSQIP geriatric surgery pilot. *J Am Coll Surg*. 2017;225(6):702-712.e1.
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## 6—Data Surveillance and Systems



## 6.1 Data Collection and Review

### Definition and Requirements

The institution must collect and review data for all patients included within the scope of the GSV Program. Data must be reviewed at least quarterly by the GSQC to identify, trend, and address issues specific to geriatric surgical care. Metrics to review include, but are not limited to:

- **Data required by regulatory bodies such as CMS and JCAHO:**
  - Inpatient falls
  - Health care-acquired infections (for example, catheter-associated urinary tract infection (CAUTI), central line-associated blood stream infection (CLABSI), ventilator-associated pneumonia (VAP), *Clostridium difficile* infection)
  - Restraint use
  - Unplanned readmissions, including those from post-acute care facilities
  - Mortality
- **Data collected for the GSV Program:**
  - Rates of postoperative delirium
  - Rates of postoperative deconditioning, as defined by the institution
  - Clinically relevant data\*

\* *The institution should collect any other data that is clinically relevant and may lead to improvement in the care of the older adult surgical patient, as informed by the retrospective case reviews (for example, if, on case review, institution discovers a high readmission rate for patients discharged with the new use of a mobility aid, they may choose to measure and track these data.)*

### Documentation

- Minutes of the GSQC documenting the data reviewed along with any trends or issues to be addressed for care improvement.

### Rationale for Standard 6.1

The ability to collect, analyze, and understand data is a critical component of providing high-quality care and improving patient outcomes. For any institution that is interested in addressing areas of weakness, the first step must be to accurately characterize performance through robust and reliable data measurement.<sup>1,2</sup> There are different strategies for obtaining such data. Administrative data based on billing claims is one source of information on medical utilization and health care outcomes.<sup>3</sup> Other institutions participate in programs, such as the ACS NSQIP, which uses trained clinical abstractors to gather data from the medical record.<sup>4</sup> It is absolutely essential for institutions to develop a means for fair data collection, whether through clinical data abstractors or claims data. Reviewing institution-specific data in order to accurately identify a need for change is what allows hospitals to effectively engage in continuous quality improvement. Furthermore, as health care financing models continue to transition from quantity to quality of care, data measurement remains a major player in value-based reimbursements. For these reasons, the GSV Program requires that institutions have a process in place that allows them to accurately collect clinical data relevant to the surgical care of older adults.

### References

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4. Cohen ME, Liu Y, Ko CY, Hall BL. Improved surgical outcomes for ACS NSQIP hospitals over time. *Ann Surg*. 2016;263(2):267-273.

## 6.2 Data Feedback to Frontline Providers and Quality Infrastructure

### Definition and Requirements

There must be a process, protocol, or policy in place for feedback of the data collected and reviewed in **Standard 6.1** back to:

- **Frontline Providers:** Surgical and critical care ICU physicians, resident physicians, advanced practice providers (APPs), and nurses
- **Hospital Quality Infrastructure:** Institutional leadership and the hospital-level quality committee

The scope of this program, from a practitioner standpoint, currently only encompasses surgeons, critical care physicians, and APPs. However, many disciplines (for example, anesthesia, emergency medicine, internal medicine, and so on) are often involved in the care of the older adult during a surgical episode of care. Though not mandatory, we strongly recommend all health care providers participating in the care of geriatric surgical patients receive feedback on the data collected and reviewed by the GSQC.

### Documentation

- Process, protocol, or policy in place for feedback of data collection and review to frontline providers and institutional leadership.

### Rationale for Standard 6.2

Data feedback was considered an important component of quality improvement by stakeholders in the development of the GSV Program. Several studies have shown the importance of data feedback to frontline providers for improving health care outcomes. For example, a randomized study on cancer patients undergoing chemotherapy found that data feedback to providers on patient symptoms resulted in better adherence to chemotherapy regimens.<sup>1</sup> In a study by Duncan et al., data feedback to nurses on selected patient outcomes related to postoperative pain showed that providing nurses with such feedback resulted in improved patient pain outcomes.<sup>2</sup> A systematic review of data feedback in palliative care showed that data feedback to providers allowed for improved emotional and psychologic well-being of patients.<sup>3</sup> Such quality of life outcomes are especially important to the older adult population. These studies provide examples of data feedback and underscore the importance of data collection and feedback to frontline providers as components of geriatric surgical care.

### References

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## 7 — Quality Improvement



## 7.1 Geriatric Surgery Quality Improvement/ Process Improvement Project

### Definition and Requirements

The institution must complete at least one quality improvement (QI)/performance improvement (PI) project annually\* pertinent to geriatric surgical care informed by the data collected and reviewed by the GSQC (see **Standard 6.1** for further details).

Health care providers outside the GSQC can lead or create the QI/PI project if the project addresses issues pertinent to geriatric surgical care. The project must be reviewed by the GSQC and must be informed by data. The health care provider or representative must report to the Geriatric Surgery Coordinator at least quarterly with data reports and updates on the project. This relationship must be documented within the committee member list (see upload requirements for **Standard 2.3** for further details), and the project data reviewed must be documented in the meeting minutes.

*\*Institutions are not mandated to implement novel projects each year. Projects can be recurring but must be informed by data.*

### Documentation

- Summary of the annual QI/PI project(s) detailing the context, aims, purpose, results, and implications for the project(s), including the data informing need for this project.

### Rationale for Standard 7.1

Older adults are vulnerable to certain outcomes that threaten both length and quality of life. Postoperative delirium, for example, is more commonly experienced in the geriatric population and has been associated with a seven-fold increase in the odds of dying five years after surgery.<sup>1</sup> Older, frail patients are also more likely to develop a pressure ulcer, which has similarly been associated with an increase in mortality.<sup>2</sup> Not only are these outcomes detrimental from a morbidity and mortality standpoint, but they also contribute

greatly to health care spending.<sup>3,4</sup> For these reasons, the GSV Program has required the implementation of a QI/PI project focused on an area of geriatric surgical care. Several studies have shown that institutional QI projects can improve outcomes. For example, Solberg et al. implemented a QI project targeting nurse education of delirium and delirium assessment tools.<sup>5</sup> The results of the study showed increased implementation and adoption of tools for delirium assessment by nurses, with earlier recognition of delirium in patients. In another study, Elliott et al. implemented a QI project to reduce the prevalence of pressure ulcers focused on clinician-to-clinician skin assessment training at the patient's bedside.<sup>6</sup> This QI project resulted in a decrease in the prevalence of pressure ulcers in the study population. By requiring that all participating GSV Program hospitals complete at least one QI/PI project, the GSV Program hopes to encourage hospitals to collect and use data in a manner that identifies deficits in the care provided to the elderly and promotes change at the institutional level.

### References

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## 7.2 [Optional] Geriatric Surgery ACS NSQIP Collaborative

### Definition and Requirements

The institution may choose to join the Geriatric Surgery ACS NSQIP Collaborative, which has the following aims:

- Utilize a network of hospitals to improve the quality of geriatric surgical care
- Collect geriatric-specific metrics for benchmarking of both geriatric-specific and traditional surgical outcomes

### Documentation

- N/A

### Rationale for Standard 7.2

The Geriatric Surgery ACS NSQIP Collaborative is a network of hospitals across the U.S. participating in the collection of data variables pertinent to the care of the older surgical patient. This collaborative began as a pilot data registry in 2014 aimed at measuring what matters most to older adults.<sup>1</sup> Each year, participants in the Geriatric Surgery ACS NSQIP Collaborative are provided with a report detailing the institution's performance on quality outcomes such as postoperative cognition and functional decline as compared with other participating institutions. This data are also available as a research file to members of the Geriatric Surgery ACS NSQIP Collaborative who are interested in analyzing the data and contributing to the collective knowledge base on geriatric surgical outcomes. The data from this registry have already contributed to several important research papers on loss of independence and postoperative delirium, for example, and will likely continue to inform geriatric surgical care in the future.<sup>2,3,4</sup> Participation in this collaborative is optional for GSV Program participants but highly encouraged.

### References

1. Robinson TN, Rosenthal RA. The ACS NSQIP geriatric surgery pilot project: Improving care for older surgical patients. *Bull Am Coll Surg.* 2014;99(10):21-23.
2. Berian JR, Mohanty S, Ko CY, Rosenthal RA, Robinson TN. Association of loss of independence with readmission and death after discharge in older patients after surgical procedures. *JAMA Surg.* 2016;151(9).
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## 8—Professional and Community Outreach



## 8.1 Geriatric Surgery Community Outreach Project

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### Definition and Requirements

The institution must have a community outreach project focused on issues pertinent to geriatric surgical care, and it must be conducted at least annually. This project may take the form of awareness, prevention, or education.

Health care providers outside the GSQC can lead or create the community outreach project if the project addresses issues pertinent to geriatric surgical care. The health care provider or representative must report to the Geriatric Surgery Coordinator at least quarterly with data reports and updates on the project.

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### Documentation

- Summary of the annual community outreach project(s) detailing the context, aims, purpose, results, and implications of the project(s), including the data informing need for this project.

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### Rationale for Standard 8.1

An important component of the GSV Program is the design and execution of a community outreach program specific to older adults. Community outreach programs have been found to successfully improve outcomes in this vulnerable population in the past, particularly in areas such as falls prevention and mental health.<sup>1,2,3</sup> Requiring the institution to have a community outreach project will therefore contribute to improvement in health outcomes for older patients undergoing surgery.

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### References

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## 8.2 Geriatric Education of Surgeons and Advanced Practice Providers

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### Definition and Requirements

Surgeons, ICU critical care physicians, and APPs caring for older adult surgical patients must be educated at hire and at every verification cycle on these basic geriatric concepts:

- Eliciting patients' goals to ensure care is concordant with patients' wishes
- Screening for high-risk geriatric vulnerabilities in cognition, mobility/function, and nutrition/hydration
- Management strategies of high-risk geriatric vulnerabilities in cognition, mobility/function, and nutrition/hydration

The scope of the GSV Program, from a practitioner standpoint, currently only encompasses surgeons, critical care physicians, and APPs. However, many disciplines (for example, anesthesia, emergency medicine, internal medicine, and so on) are often involved in the care of the older adult during a surgical episode of care. Though not mandatory, we strongly recommend all health care providers participating in the care of geriatric surgical patients receive directed education regarding the key concepts listed above.

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### Documentation

- Curriculum used to educate surgeons, critical care physicians, and APPs on geriatric issues such as eliciting patients' goals, screening for, and management of high-risk geriatric vulnerabilities.

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### Rationale for Standard 8.2

See page 79 for combined rationale for Standards 8.2 and 8.3.

## 8.3 Geriatric Education of Nurses

### Definition and Requirements

The GSNC on each floor or unit is responsible for training the nurses they oversee in caring for older adult surgical patients. Nurses must be educated at hire and at every verification cycle on these basic geriatric concepts:

- Eliciting patients' goals to ensure care is concordant with patients' wishes
- Screening for high-risk geriatric vulnerabilities in cognition, mobility/function, and nutrition/hydration
- Management strategies of high-risk geriatric vulnerabilities in cognition, mobility/function, and nutrition/hydration

### Documentation

- Curriculum used to educate nurses on geriatric issues such as eliciting patients' goals, screening for, and management of high-risk geriatric vulnerabilities.

### Rationale for Standards 8.2 and 8.3

Education and awareness of geriatric-specific issues was identified as a high-priority topic in a meeting of key stakeholders for geriatric surgical care. Given the complexity and unique needs of older adults, improving the quality of surgical care for this population will require expanding the knowledge base for health care professionals broadly.

There have been several important, major initiatives to improve education for geriatric care since the 2008 Institute of Medicine report "Retooling for an Aging America."<sup>1</sup> The Partnership for Health in Aging (PHA) is a multidisciplinary coalition of more than 30 organizations representing health care professions that care for older adults, with support from the AGS. The PHA has worked to address the needs of the health care workforce in developing and expanding interdisciplinary team training in geriatrics.<sup>2</sup> The PHA has outlined a set of interdisciplinary competencies in the care of the older adult for the entry-level health professional degree. There are six core domains: health promotion and safety, evaluation and assessment, care planning and coordination across the care spectrum (including end-of-life care), interdisciplinary and team care, caregiver support, and health care systems and benefits.<sup>3</sup>

The Geriatrics for Specialists Initiative (GSI), which began in 1995 with support from The John A. Hartford Foundation (JAHF) and the AGS, emphasized the development of educational initiatives to improve the knowledge base of surgical providers and trainees regarding management of aging patients. Seven surgical specialty boards worked together to generate a set of proposed geriatric competencies for surgeons.<sup>4</sup> For residents, the Geriatrics Education for Specialty Residents program developed specialty specific educational toolkits, which are available for use through the AGS.<sup>5</sup>

In summary, these standards reflect the need to educate health care professionals involved in the care of older patients undergoing surgery. The educational requirement may be fulfilled through national or regional continuing education programs offered by external organizations (available in person or electronically) or through locally developed programs vetted by local geriatric care experts.

### References

1. Institute of Medicine. *Retooling for an Aging America: Building the Health Care Workforce*. Washington, DC: The National Academies Press; 2008.
2. Montagnini M, Kaiser RM, Clark PG, et al. Position statement on interdisciplinary team training in geriatrics: An essential component of quality health care for older adults. *J Am Geriatr Soc*. 2014;62(5):961-965.
3. Semla T, Barr J, Beizer J, Berger S. Multidisciplinary competencies in the care of older adults at the completion of the entry-level health professional degree. Available at [https://www.americangeriatrics.org/sites/default/files/inline-files/Multidisciplinary\\_Competerencies\\_Partnership\\_HealthinAging\\_1.pdf](https://www.americangeriatrics.org/sites/default/files/inline-files/Multidisciplinary_Competerencies_Partnership_HealthinAging_1.pdf). Updated March 2010. Accessed May 2019.
4. Bell RH, Jr., Drach GW, Rosenthal RA. Proposed competencies in geriatric patient care for use in assessment for initial and continued board certification of surgical specialists. *J Am Coll Surg*. 2011;213(5):683-690.
5. Potter JF, Burton JR, Drach GW, Eisner J, Lundebjerg NE, Solomon DH. Geriatrics for residents in the surgical and medical specialties: Implementation of curricula and training experiences. *J Am Geriatr Soc*. 2005;53(3):511-515.





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## 9 — Research



## 9.1 [Optional] Advancement of Knowledge in Geriatric Surgical Care

### Definition and Requirements

The institution must work toward advancement of geriatric surgical knowledge and care. This is an optional, though highly encouraged, standard. Forms of research and scholarly endeavors may have a presence locally, regionally, nationally, or internationally and can include, but are not limited to:

- Abstracts submitted to conferences
- Poster presentations
- Podium presentations
- Peer-reviewed manuscripts
  - Case reports
  - Commentaries
  - Cohort and case-controlled studies
  - Clinical trials
- Ongoing scholarly research that has not yet been presented or published

### Documentation

- Scholarly research in progress or documentation of published research related to the improvement of quality in geriatric surgery.

### Rationale for Standard 9.1

Health research is important and valuable in a society that strives for continuous quality improvement. Research has the potential to inform on disease incidence and prevalence, determine patient and surgical risk factors, and identify targets for care improvement.<sup>1</sup> By performing, presenting, and publishing research in geriatric surgical care, providers and institutions can spread this knowledge and enhance the field of geriatric surgical care. Participation in geriatric surgical research is optional but highly encouraged.

### Reference

1. Institute of Medicine. *Beyond the HIPAA Privacy Rule: Enhancing Privacy, Improving Health Through Research*. Washington, DC: The National Academies Press; 2009.

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## Acronyms

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### A

AAHPM:  
American Academy of Hospice and Palliative Medicine

ACEP:  
American College of Emergency Physicians

ACP:  
American College of Physicians

ACS:  
American College of Surgeons

ADE:  
Adverse Drug Events

ADL:  
Activities of Daily Living

AGS:  
American Geriatrics Society

AMDA:  
American Medical Directors Association

AORN:  
Association of periOperative Registered Nurses

APP:  
Advanced Practice Providers

APS:  
American Pain Society

ASA:  
American Society of Anesthesiologists

ASRA:  
American Society of Regional Anesthesia and Pain Medicine

---

### C

CAM:  
Confusion Assessment Method

CAUTI:  
Catheter-Associated Urinary Tract Infection

CDC:  
Centers for Disease Control and Prevention

CEO:  
Chief Executive Officer

CLABSI:  
Central Line-Associated Blood Stream Infection

CME:  
Continuing Medical Education

CMS:  
Centers for Medicare and Medicaid Services

CNE:  
Continuing Nursing Education

CSV:  
Children's Surgery Verification

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### D

DNR:  
Do Not Resuscitate

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### G

GSI:  
Geriatrics for Specialists Initiative

GSNC:  
Geriatric Surgery Nurse Champion

GSQC:  
Geriatric Surgery Quality Committee

GSV:  
Geriatric Surgery Verification

---

## H

HPNA:  
Hospice and Palliative Nurses Association

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## I

IADL:  
Instrumental Activities of Daily Living

ICU:  
Intensive Care Unit

---

## J

JAHF:  
The John A. Hartford Foundation

JCAHO:  
Joint Commission on Accreditation of Healthcare  
Organizations

---

## M

MNA-SF:  
Mini Nutritional Assessment-Short Form

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## N

NICE:  
National Institute for Health and Care Excellence

NSAIDs:  
Nonsteroidal Anti-Inflammatory Drugs

NSQIP:  
National Surgical Quality Improvement Program

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## P

PCP:  
Primary Care Provider

PHA:  
Partnership for Health in Aging

PI:  
Process Improvement

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## Q

QI:  
Quality Improvement

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## S

SAEM:  
Society for Academic Emergency Medicine

SHM:  
Society of Hospital Medicine

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## T

TOCCC:  
Transitions of Care Consensus Conference

TUG:  
Timed Up and Go

---

## V

VAP:  
Ventilator-Associated Pneumonia

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## Appendices

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### 4.1

#### Continuing Education for Geriatric Nurse Champions

- NICHE—Nurses Improving Care for Healthsystem Elders
  - [nicheprogram.org](http://nicheprogram.org)

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### 5.2-5.3

#### Advance Care Planning Resources for Patients

- Prepare For Your Care
  - [prepareforyourcare.org/story](http://prepareforyourcare.org/story)

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### 5.6

#### Preoperative Geriatric Vulnerability Screens

- Overarching Screens
  - ACS NSQIP®/AGS Optimal Preoperative Assessment
    - [facs.org/~media/files/quality%20programs/nsqip/acsnqipagsgeriatric2012guidelines.ashx](http://facs.org/~media/files/quality%20programs/nsqip/acsnqipagsgeriatric2012guidelines.ashx)
  - Edmonton Frail Scale
    - [nscphealth.co.uk/edmontonscale-pdf](http://nscphealth.co.uk/edmontonscale-pdf)
  - Sinai Abbreviated Geriatric Evaluation
    - [researchgate.net/profile/Mark\\_Katlic/publication/321142988\\_Sinai\\_Abbreviated\\_Geriatric\\_Evaluation\\_Development\\_and\\_Validation\\_of\\_a\\_Practical\\_Test/links/5a130ed94585158aa3e1de65/Sinai-Abbreviated-Geriatric-Evaluation-Development-and-Validation-of-a-Practical-Test.pdf](http://researchgate.net/profile/Mark_Katlic/publication/321142988_Sinai_Abbreviated_Geriatric_Evaluation_Development_and_Validation_of_a_Practical_Test/links/5a130ed94585158aa3e1de65/Sinai-Abbreviated-Geriatric-Evaluation-Development-and-Validation-of-a-Practical-Test.pdf)
  - Association of Integrated Care Coordination With Postsurgical Outcomes in High-Risk Older Adults
    - [jamanetwork.com/journals/jamasurgery/article-abstract/2666836?redirect=true](http://jamanetwork.com/journals/jamasurgery/article-abstract/2666836?redirect=true)
- Impaired Cognition
  - Mini Cog
    - [alz.org/documents\\_custom/minicog.pdf](http://alz.org/documents_custom/minicog.pdf)
  - MMSE (Mini Mental Status Exam)
    - [onlinejacc.org/content/accj/69/12/1609/DC1/embed/media-1.pdf?download=true](http://onlinejacc.org/content/accj/69/12/1609/DC1/embed/media-1.pdf?download=true)
  - Montreal Cognitive Assessment (MOCA)
    - [consultgeri.org/try-this/general-assessment/issue-3.2.pdf](http://consultgeri.org/try-this/general-assessment/issue-3.2.pdf)

- Delirium Risk
  - A Clinical Prediction Rule for Delirium After Elective Noncardiac Surgery
    - [jamanetwork.com/journals/jama/article-abstract/362097?redirect=true](http://jamanetwork.com/journals/jama/article-abstract/362097?redirect=true)
  - National Institute for Health Care and Excellence (NICE) Guidelines for Delirium Prevention, Diagnosis, and Management
    - [nice.org.uk/guidance/cg103](http://nice.org.uk/guidance/cg103)
  - American Geriatrics Society Delirium Guidelines
    - [geriatricscareonline.org/ProductAbstract/american-geriatrics-society-clinical-practice-guideline-for-postoperative-delirium-in-older-adults/CL018](http://geriatricscareonline.org/ProductAbstract/american-geriatrics-society-clinical-practice-guideline-for-postoperative-delirium-in-older-adults/CL018)
- Impaired Functional Status
  - Katz ADLs (activities of daily living)
    - [geriatricscareonline.org/ProductAbstract/american-geriatrics-society-clinical-practice-guideline-for-postoperative-delirium-in-older-adults/CL018](http://geriatricscareonline.org/ProductAbstract/american-geriatrics-society-clinical-practice-guideline-for-postoperative-delirium-in-older-adults/CL018)
  - Lawton's IADLs (instrumental activities of daily living)
    - [consultgeri.org/try-this/general-assessment/issue-23.pdf](http://consultgeri.org/try-this/general-assessment/issue-23.pdf)
  - Functional Activities Questionnaire
    - [consultgeri.org/try-this/dementia/d13faq2016r2.pdf](http://consultgeri.org/try-this/dementia/d13faq2016r2.pdf)
- Impaired Mobility
  - Timed Up and Go Test
    - [cdc.gov/steady/pdf/TUG\\_Test-print.pdf](http://cdc.gov/steady/pdf/TUG_Test-print.pdf)
  - Five Times Sit to Stand Test
    - [thompsonhealth.com/Portals/0/\\_RehabilitationServices/PT%20Mgmt%20of%20Knee/5XSST\\_handout.pdf](http://thompsonhealth.com/Portals/0/_RehabilitationServices/PT%20Mgmt%20of%20Knee/5XSST_handout.pdf)
  - Functional Gait Assessment
    - [geriatrictoolkit.missouri.edu/FGA/Wrisley-2007-FGA\\_PTJ\\_84-10-Appendix.pdf](http://geriatrictoolkit.missouri.edu/FGA/Wrisley-2007-FGA_PTJ_84-10-Appendix.pdf)
- Malnutrition
  - ACS Strong for Surgery
    - [facs.org/quality-programs/strong-for-surgery/clinicians/nutrition](http://facs.org/quality-programs/strong-for-surgery/clinicians/nutrition)
  - Mini Nutritional Assessment-Short Form (MNA-SF)
    - [consultgeri.org/try-this/general-assessment/issue-9.pdf](http://consultgeri.org/try-this/general-assessment/issue-9.pdf)
  - Malnutrition Universal Screening Tool
    - [bapen.org.uk/pdfs/must/must\\_full.pdf](http://bapen.org.uk/pdfs/must/must_full.pdf)

- Need for Preoperative Palliative Care Assessment
  - Utility of the “Surprise” Question in Predicting Survival among Older Patients with Acute Surgical Conditions
    - [liebertpub.com/doi/abs/10.1089/jpm.2016.0313](http://liebertpub.com/doi/abs/10.1089/jpm.2016.0313)
  - Supportive & Palliative Care Indicators Tool (SPICT)
    - [spict.org.uk](http://spict.org.uk)

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## 5.7

### Sample Preoperative Geriatric Assessment

- ACS NSQIP®/AGS Optimal Preoperative Assessment of the Geriatric Patient
  - [facs.org/~media/files/quality%20programs/nsqip/acnsqipagsgeriatric2012guidelines.ashx](http://facs.org/~media/files/quality%20programs/nsqip/acnsqipagsgeriatric2012guidelines.ashx)
- Preoperative Geriatric Assessment
  - [consultgeri.org/try-this/specialty-practice/issue-sp6.pdf](http://consultgeri.org/try-this/specialty-practice/issue-sp6.pdf)

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## 5.11

### Inpatient Medication Management

- 2019 AGS Beers Criteria
  - [nicheprogram.org/sites/niche/files/2019-02/Panel-2019-Journal\\_of\\_the\\_American\\_Geriatrics\\_Society.pdf](http://nicheprogram.org/sites/niche/files/2019-02/Panel-2019-Journal_of_the_American_Geriatrics_Society.pdf)
- 2019 AGS Beers Criteria Pocket Card
  - [geriatricsonline.org/ProductAbstract/2019-ags-beers-criteria-pocketcard/PC007/](http://geriatricsonline.org/ProductAbstract/2019-ags-beers-criteria-pocketcard/PC007/)
- How to Use the American Geriatrics Society 2015 Beers Criteria—A Guide for Patients, Clinicians, Health Systems, and Payors
  - [ncbi.nlm.nih.gov/pmc/articles/PMC5325682/pdf/nihms847415.pdf](http://ncbi.nlm.nih.gov/pmc/articles/PMC5325682/pdf/nihms847415.pdf)

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## 5.12

### Opioid-Sparing, Multimodality Pain Management

- Overall Perioperative Management
  - ACS NSQIP®/AGS Optimal Perioperative Management of the Geriatric Patient
    - [facs.org/~media/files/quality%20programs/geriatric/acs%20nsqip%20geriatric%202016%20guidelines.ashx](http://facs.org/~media/files/quality%20programs/geriatric/acs%20nsqip%20geriatric%202016%20guidelines.ashx)

- Provide Multimodality Pain Control
  - Clinical Practice Guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists’ Committee on Regional Anesthesia, Executive Committee, and Administrative Council
    - [sciencedirect.com/science/article/pii/S1526590015009955](http://sciencedirect.com/science/article/pii/S1526590015009955)
  - AORN Multimodality pain guidelines
    - [fha.org/files/HIIN/AORN-CE-Multimodalpainmgt.pdf](http://fha.org/files/HIIN/AORN-CE-Multimodalpainmgt.pdf)
  - American Pain Society guidelines
    - [americanpainsociety.org/uploads/education/section\\_4.pdf](http://americanpainsociety.org/uploads/education/section_4.pdf)

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## 5.13

### Standardized Postoperative Care

- Promote Mobility (Including Function Preservation and Ambulation) and Prevent Falls
  - Mobility Protocol from AHRQ (Agency for Healthcare Research and Quality)
    - [ahrq.gov/professionals/quality-patient-safety/hais/tools/mvp/modules/technical/nursedr-early-mobility-protocols-facguide.html](http://ahrq.gov/professionals/quality-patient-safety/hais/tools/mvp/modules/technical/nursedr-early-mobility-protocols-facguide.html)
  - Function Maintenance Protocol
    - [consultgeri.org/try-this/general-assessment/issue-31.pdf](http://consultgeri.org/try-this/general-assessment/issue-31.pdf)
- Prevent, Recognize, and Treat Delirium
  - Delirium Prevention Strategies from American Delirium Society
    - [nursingworld.org/practice-policy/work-environment/health-safety/delirium/](http://nursingworld.org/practice-policy/work-environment/health-safety/delirium/)
  - Delirium Screen - Confusion Assessment Method (CAM)
    - [consultgeri.org/try-this/general-assessment/issue-13.pdf](http://consultgeri.org/try-this/general-assessment/issue-13.pdf)
  - Delirium Screen in ICU - Confusion Assessment Method - Intensive Care Unit (CAM-ICU)
    - [consultgeri.org/try-this/general-assessment/issue-25.pdf](http://consultgeri.org/try-this/general-assessment/issue-25.pdf)
  - NUDESC (Nursing Delirium Screening Tool)
    - [caresearch.com.au/Caresearch/Portals/0/Documents/PROFESSIONAL-GROUPS/General-Practitioners/4-NuDescscaleCalvary\\_1.pdf](http://caresearch.com.au/Caresearch/Portals/0/Documents/PROFESSIONAL-GROUPS/General-Practitioners/4-NuDescscaleCalvary_1.pdf)

- Delirium Treatment through Non-pharmacologic methods
  - [consultgeri.org/try-this/dementia/issue-d4.pdf](http://consultgeri.org/try-this/dementia/issue-d4.pdf)
- Delirium Management Strategies
  - [aci.health.nsw.gov.au/chops/chops-key-principles/management-of-older-people-with-confusion/management-strategies](http://aci.health.nsw.gov.au/chops/chops-key-principles/management-of-older-people-with-confusion/management-strategies)
- American Geriatrics Society Delirium Guidelines
  - [geriatricscareonline.org/ProductAbstract/american-geriatrics-society-clinical-practice-guideline-for-postoperative-delirium-in-older-adults/CL018](http://geriatricscareonline.org/ProductAbstract/american-geriatrics-society-clinical-practice-guideline-for-postoperative-delirium-in-older-adults/CL018)
- Postoperative Delirium in Older Adults: Best Practice Statement from the American Geriatrics Society
  - [journalacs.org/article/S1072-7515\(14\)01793-1/abstract](http://journalacs.org/article/S1072-7515(14)01793-1/abstract)
- Promote Nutrition and Hydration
  - Peri-operative nutritional management
    - [cambridge.org/core/journals/proceedings-of-the-nutrition-society/article/perioperative-nutritional-management/2089406CEDB5913F88BB90EC3B3BC60A](http://cambridge.org/core/journals/proceedings-of-the-nutrition-society/article/perioperative-nutritional-management/2089406CEDB5913F88BB90EC3B3BC60A)
  - ESPEN Perioperative Nutrition Guidelines
    - [espen.org/files/ESPEN-guideline\\_Clinical-nutrition-in-surgery.pdf](http://espen.org/files/ESPEN-guideline_Clinical-nutrition-in-surgery.pdf)
  - Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient
    - [onlinelibrary.wiley.com/doi/full/10.1177/0148607115621863](http://onlinelibrary.wiley.com/doi/full/10.1177/0148607115621863)
  - ACS NSQIP®/AGS Optimal Perioperative Management of the Geriatric Patient
    - [facs.org/~media/files/quality%20programs/geriatric/acs%20nsqip%20geriatric%202016%20guidelines.ashx](http://facs.org/~media/files/quality%20programs/geriatric/acs%20nsqip%20geriatric%202016%20guidelines.ashx)

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## 5.14

### Interdisciplinary, Postoperative Care for High-Risk Patients

- ACE Tracker
  - [onlinelibrary.wiley.com/doi/10.1111/j.1532-5415.2009.02624.x/full](http://onlinelibrary.wiley.com/doi/10.1111/j.1532-5415.2009.02624.x/full)

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## 5.17

### Discharge Documentation and Hand-Off Communication

- Transitions of Care Consensus Policy Statement: American College of Physicians, Society of General Internal Medicine, Society of Hospital Medicine, American Geriatrics Society, American College of Emergency Physicians, and Society for Academic Emergency Medicine
  - [onlinelibrary.wiley.com/doi/10.1002/jhm.510/full](http://onlinelibrary.wiley.com/doi/10.1002/jhm.510/full)

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## 5.18

### Communication with Post-Acute Care Facilities

- Nursing Home Compare
  - [medicare.gov/nursinghomecompare/search.html](http://medicare.gov/nursinghomecompare/search.html)
- Project ECHO
  - [echo.unm.edu](http://echo.unm.edu)

---

## 8.1

### Example of a Community Outreach Activity

- Enacting Fall Prevention in Community Outreach Care
  - [journals.sagepub.com/doi/abs/10.1177/1049732314539194](http://journals.sagepub.com/doi/abs/10.1177/1049732314539194)

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## 8.2

### Geriatric Education of Surgeons and Advanced Practice Providers (APP)

- Physician Education
  - Geriatrics Care Online.org
    - [geriatricscareonline.org](http://geriatricscareonline.org)
  - Video on Multimodal Analgesia
    - [youtube.com/watch?v=i-5sTLW4-Ms](http://youtube.com/watch?v=i-5sTLW4-Ms)
- Resident Education
  - Geriatrics for Specialty Residents Toolkit
    - [geriatricscareonline.org/ProductTypeStore/geriatrics-for-specialty-residents-toolkits/6/](http://geriatricscareonline.org/ProductTypeStore/geriatrics-for-specialty-residents-toolkits/6/)

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## 8.3

### Geriatric Education of Nurses

- NICHE—Nurses Improving Care for Healthsystem Elders
  - [nicheprogram.org](http://nicheprogram.org)
- ConsultGeri.org
  - [consultgeri.org](http://consultgeri.org)
- Advanced Practice Nursing Geriatric Resources
  - [gapna.org/resources/toolkits/toolkit-gerontology-resources-aprn-preceptors-and-students](http://gapna.org/resources/toolkits/toolkit-gerontology-resources-aprn-preceptors-and-students)
- Association of periOperative Registered Nurses (AORN) Resources
  - [aorn.org/guidelines](http://aorn.org/guidelines)







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