

# Age-Friendly Health Systems: Best Practices in Implementation

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An Age-Friendly Health System optimizes care for elderly patients in accordance with clinical guidelines and best practices. The Age-Friendly Health Systems Initiative was started by The John A. Hartford Foundation and the Institute for Healthcare Improvement (IHI), along with the American Hospital Association (AHA) and the Catholic Health Association of the United States (CHA) ([asamonitor.pub/3j1kcXM](http://asamonitor.pub/3j1kcXM)). The initiative aims to follow key evidence-based practices, cause no harm, and align care with patient and family goals. Specifically, Age-Friendly Health Systems hinge on four key components, colloquially termed the “4Ms”: What Matters, Medication, Mentation, and Mobility.

Older patients make up a significant and growing portion of health care utilization and expenditures in the U.S. For example, older adults represent 37% of the surgical volume at our institution, Dartmouth Hitchcock Medical Center in Lebanon, New Hampshire, which has the designation of an IHI Age-Friendly Health System. Moreover, the U.S. Census Bureau projects that the number of patients over the age of 65 will more than double between 2010 and 2050 ([asamonitor.pub/3qT55fM](http://asamonitor.pub/3qT55fM)). This growth has major implications for health care institutions as older adults may require enhanced care given age-related physiology, pathophysiology, and specific geriatric syndromes, such as frailty and cognitive dysfunction (*JAMA Surg* 2018;153:454-62; *J Am Coll Surg* 2006;203:865-77; *J Am Geriatr Soc* 2005;53:424-9; *Anaesthesia* 2014;69:8-16).

Further, increasing age has been shown to be an independent risk factor for post-surgical complications associated with a statistically significant increase in both mortality and morbidity (*J Am Coll Surg* 2006;203:865-77). Older patients are known to have a higher risk of postoperative complications, including prolonged length of stay, readmissions, delirium, and increased falls (*JAMA Surg* 2018;153:454-62). Development of delirium itself is associated with poor hospital outcomes and long-term outcomes (*JAMA Surg* 2021;156:430-42). A recent prospective cohort study of older adults undergoing major elective surgery demonstrated that the cumulative health care costs attributable to postoperative delirium were \$44,291 per patient per year, with the majority of costs within the first 90 days. Further, they estimated that the total national direct



one-year costs attributable to postoperative delirium were approximately \$32.8 billion annually (*JAMA Surg* 2021;156:430-42).

## Guidelines for success

Importantly, research suggests that participation of geriatric-focused teams, which can be delivered by non-geriatricians, can reduce delirium by a third to one half, and current evidence supports the use of a comprehensive preoperative assessment of the geriatric surgical patient (*JAMA Surg* 2017;152:827-34; *JAMA Surg* 2018;153:454-62; *Anaesthesia* 2014;69:8-16). Major medical organizations have published practice guidelines describing the optimal perioperative care for older patients (*BMC* February 2020; [asamonitor.pub/3xruCiE](http://asamonitor.pub/3xruCiE)). Duke University developed a multidisciplinary perioperative program (POSH program) focused on geriatric risk mitigation and health optimization, which has demonstrated improved postoperative outcomes, including decreased length of stay and 30-day readmissions rates (*JAMA Surg* 2018;153:454-62). Further, based on the available evidence, the American College of Surgeons implemented a Geriatric Surgical Verification Program outlining 30 standards for optimal perioperative care of older adults ([asamonitor.pub/3xruCiE](http://asamonitor.pub/3xruCiE)).

According to the IHI, the 4Ms are key to the success of an Age-Friendly Health System: first, identify “What Matters” to each patient regarding health outcome goals and care preferences, including end-of-life and care-setting goals; second, optimize “Medication” to favor age-friendly medications that don’t impede Mobility, Mentation, or What Matters; third, preserve “Mentation” by preventing, diagnosing, and treating depression, dementia, and delirium; fourth, maintain “Mobility”

and function by encouraging daily movement ([asamonitor.pub/3j1kcXM](http://asamonitor.pub/3j1kcXM)).

The American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) and the American Geriatrics Society (AGS), with support from The Hartford Foundation, have collaborated on several important publications, including the Optimal Perioperative Management of the Geriatric Patient (2016) and the American Geriatrics Society abstracted clinical practice guideline for postoperative delirium in older adults (2015) (*J Am Coll Surg* 2016;222:930-47; *J Am Geriatr Soc* 2015;63:142-50). Most recently, the ACS spearheaded a multidisciplinary set of evidence-based guidelines that can be used for accreditation: the Geriatric Verification Standards ([asamonitor.pub/3xruCiE](http://asamonitor.pub/3xruCiE)). These evidenced-based guidelines are easy to follow and break down interventions into immediate pre-, intra- and postoperative management, including checklists for each of the three key periods.

Central to their preoperative recommendations is sufficient counseling in goals of care and advanced directives, maximizing preoperative nutrition (a shortened fluid fast), and optimizing both home and routine prophylactic medical therapies. Intraoperative guidelines focus on selection of anesthesia/analgesia, avoidance of complications such as pressure ulcers, nerve damage, pulmonary aspirations, and fluid management. Last, recommended postoperative management involves daily evaluation for key complications, including delirium/cognitive impairment, acute pain, pulmonary issues, falls, nutrition, urinary tract infections, and functional decline.



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AARP’s (formerly the American Association of Retired Persons) Global Council on Brain Health similarly created a report on preserving brain health during illness or surgery, focusing on the prevention and treatment of delirium specifically ([asamonitor.pub/2TFf4ci](http://asamonitor.pub/2TFf4ci)). The report gives clear recommendations for individuals, caregivers, health care providers, and health care/hospital systems. The latter being the implementation of the 4Ms Framework previously discussed. A significant focus of their recommendations is for “prehab”: the preparation for surgery by enhancing physical and mental resilience prior to the hospital via traditional avenues for self care, including exercise, diet, and sleep. Additionally, they stress the involvement of family members and friends throughout the perioperative period to aid with orientation and observation for changes in mental status.

## Best anesthesia practices

Regarding anesthesia best practices, a recent publication by Peden et al. in 2021 convened a group of international experts and used a modified Delphi process to identify six practical recommendations to reduce the incidence of perioperative neurocognitive disorders (*Br J Anaesth* 2021;126:423-32). They evaluated the strength of evidence, potential for impact, and implementation feasibility when identifying their recommendations. The six core tenets of their strategy are as follows.

First, developing a multidisciplinary team to develop education and training to enhance the prevention, identification,

## New Frailty Resources

The Frailty Toolkit and Assessment webpage is now available at [asahq.org/frailty](http://asahq.org/frailty). It includes an introduction to frailty, frailty assessment, and instruments with an infographic, four case studies, and collected key papers in perioperative frailty. The toolkit and assessment materials was curated by the Committee on Geriatric Anesthesia and updated June 2021. The **Central Line podcast** on the Frailty Toolkit will be available Sept. 2 featuring an interview with the authors of the toolkit and members of the Committee on Geriatric Anesthesia, Daniel I. McIsaac MD, MPH, FRCPC, and Mark Neuman, MD.

### Understanding Frailty in Older Surgical Patients

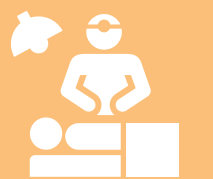


Frailty is a state of increased vulnerability to poor outcomes that results from age- and disease-related deficits



**3 to 4 million**  
older Americans with frailty  
have major surgery every year

**1 in 2**  
older people  
with frailty  
have a major  
complication  
after surgery



**Frailty quadruples the odds**  
of experiencing  
postoperative  
delirium



Frailty more than  
**doubles the risk**  
of dying after surgery

Frailty may contribute  
to more than

**\$21 billion**

in excess health care  
spending on surgery



American Society of  
**Anesthesiologists**

For more information on frailty  
assessment, visit [asahq.org/frailty](http://asahq.org/frailty)

performance is best assessed via the Duke Activity Status Index (DASI) or Timed Up and Go Test (TUGT), with exercise pre-habilitation as therapy when indicated. Malnutrition is best assessed using the Canadian Nutrition Screening tool (CNST) or Mini Nutritional Assessment, with protein supplementation at 1.25 g/kg/day and iron supplementation as needed. The CNST is a two-question screener with 92% sensitivity and 75% specificity. Mental health can be assessed most efficiently with the two-question Personal Health Questionnaire (PHQ-2) (86% sensitive, 78% specific for major depression). Lastly, for cognitive dysfunction, the McIsaac study recommends screening using the Mini-Cog, which is consistent with both ACS/AGS best practices and other published studies (*Perioper Care Oper Room Manag* June 2020; *Anesthesiology* 2017;127:765-74).

At Dartmouth Hitchcock Medical Center specifically, initial efforts have focused on the integration of screening tools directly into the electronic medical record to achieve successful implementation. If a patient screens positive, the tool provides best practice guidelines, including opioid-sparing pharmacologic management and early mobility, to assist with caring for at-risk or delirious patients in the perioperative period. A positive screen will also refer patients to our Aging Resource Center for social determinants of health screening and to a geriatrician for further evaluation. We are working to offer telehealth options for both referrals to improve access to care, a significant issue in our rural location. Integrating screening into the EMR was endorsed by numerous key stakeholders in the care pathway as the best approach to ensure adoption by care providers. Stakeholder input also emphasized the importance of staff education on screening implementation, including who to screen and how to discuss screening with patients. Preliminary data at our institution suggest improved adherence to preoperative cognitive and frailty screening after implementation of stakeholder feedback.

### Additional resources

Beyond the above-mentioned articles and guidelines, ASA has numerous resources regarding the implementation of Age-Friendly Health Systems. The Perioperative Brain Health Initiative website ([asahq.org/brainhealthinitiative](http://asahq.org/brainhealthinitiative)) is a central repository for information for providers, patients, and publications. Last, ASA is also working on an upcoming practice parameter document, the work for which began in July and is ongoing. The above guiding principles and resources are key to implementing and improving Age-Friendly Health Systems, thereby optimizing the care we provide our elderly patients and improving the sustainability of our health system at large. ■

and management of patients with delirium. Second, the implementation of baseline cognitive screening with validated tests (e.g., the MiniCog) for all at-risk patients has been shown to impact care behavior by raising awareness. Third, employing delirium screening for monitoring at-risk patients preoperatively and postoperatively, specifically recommending the 4 As Test (4AT), which tests Arousal, Attention, Abbreviated mental test and any Acute change. Fourth, partnering with multidisciplinary teams and patient families to implement non-pharmacologic interven-

tions (e.g., mobilization, communication, orientation, and physical therapy). Fifth, optimize postoperative pain control by minimizing reliance on sedating modalities like opiates. Sixth, avoiding antipsychotics and benzodiazepines in the treatment of delirium when at all possible.

All of the guidelines strongly encourage screening for cognitive impairment and frailty, yet there are many potential screening tools available. Recent publications have addressed which tools may be appropriate for the preoperative period and are associated with key postsurgical

outcomes, such as length of stay or development of delirium. A recent article by McIsaac et al. from 2020 reviewed screening tools for the specific components of frailty to be used preoperatively in patients >65 years old (*Anesth Analg* 2020;130:1450-60). They reviewed the Fried Phenotype (FP), Clinical Frailty Scale (CFS), and Edmonton Frail Scale (EFS) as initial frailty screens, recommending the CFS as the optimal screener.

Should frailty be identified, further screening should be conducted to identify specific underlying deficits. Physical