Gerontology Resources for **APRNs in Acute and Emergent Care Settings**

3rd Edition

care • continuity • connection

GAPNA

Gerontological Advanced Practice Nurses Association

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Preface

The goal of the *Gerontology Resources for APRNs in Acute and Emergent Care Settings* (3nd edition) *("Acute Care Resource Guide")* is to make geriatric and gerontological content easily accessible to those caring for older adults in higher-acuity care settings. It is designed with advanced practice registered nurse (APRN) students, preceptors, clinicians, and educators in mind, and to provide a single portal to comprehensive resources. This *Acute Care Resource Guide* is organized alphabetically by acute and emergent care topics and includes links to websites and videos available publicly. Some resources may require a login and/or a nominal fee for access. The *Acute Care Resource Guide* was developed by APRNs who specialize in the care and delivery of quality health care to older, acutely ill adults. Resources are primarily from open sources, professional organizations, and universities. Rather than an exhaustive list of topics, the *Acute Care Resource Guide* focuses on common acute and emergent issues among older adults.

For best online viewing and functionality, open the links using Google Chrome, Firefox, or Safari web browsers, or the latest version of Internet Explorer. To report a broken link or to suggest additional acute and emergent care topics to include in future editions, please contact the GAPNA National Office at gapna@gapna.org.

Acute Care Resource Guide Taskforce

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Gerontological Resources for Healthcare Management

Acute Kidney Injury (AKI)

Kellum, J.A., Romagnani, P., Ashuntantang, G. et al. Acute kidney injury. *Natural Reviews Disease Primers 7*, 52 (2021). https://doi.org/10.1038/s41572-021-00284-z

This article discusses acute kidney injury (AKI), its causes, global impact, and the challenges in managing it, emphasizing the importance of early detection and prevention to avoid long-term consequences like chronic kidney disease (CKD).

5-Minute Clinical Consult. (2020). *Acute kidney injury.* Wolters Kluwer. https://www.unboundmedicine.com/5minute/view/5-Minute-Clinical-Consult/117660/all/Acute_Kidney_Injury

This chapter covers the basics of AKI and directs attention to the appropriate diagnostic tests and management.

Turgut, F., Awad, A. S., & Abdel-Rahman, E. M. (2023). *Acute Kidney Injury: Medical Causes and Pathogenesis. Journal of Clinical Medicine, 12*(1), 375. https://doi.org/10.3390/jcm12010375

This article discusses acute kidney injury (AKI), its causes, classification, and pathophysiological mechanisms, emphasizing the importance of timely identification and understanding to manage and prevent long-term consequences like chronic kidney disease (CKD).

Web Links

Farkas, J. (2023). Acute kidney injury. *Internet Book of Critical Care (IBCC)*.

This up-to-date resource provides an overview of AKI, highlights key points, includes a podcast, and is based on peer review.

Malkina, A. (2024). *Acute kidney injury (AKI)*. Merck Manual Professional Version.

This resource highlights the fundamentals of AKI (e.g., definition, etiology, signs and symptoms, diagnosis, treatment). It includes a table on the staging criteria for AKI and includes a consumer/patient version of AKI.

Cardiovascular

Jiménez-Méndez, C., Díez-Villanueva, P., Bonanad, C., Ortiz-Cortés, C., Barge-Caballero, E., Goirigolzarri, J., Esteban-Fernández, A., Pérez-Rivera, Á., Cobo, M., López, J., Sanz-García, A., Guerrero, C., Pardo, H. G., Robles, C., Iglesias, D., Pinilla, J. M. G., Rodríguez, L. L., Formiga, F., Martín-Sánchez, F. J., Vidán, M. T., … en representación de los investigadores del registro FRAGIC (2022). Frailty and prognosis of older patients with chronic heart failure. *Revista espanola de cardiologia (English ed.)*, *75*(12), 1011-1019. https://link.springer.com/article/10.1007/s11897-024-00650-4

Frailty in heart failure has long been associated with negative outcomes. This article emphasizes that frailty is an independent risk factor for 1-year mortality for patients with heart failure.

Aguilar-Iglesias, L., Perez-Asensio, A., Vilches-Miguel, L., Jimenez-Mendez, C., Diez-Villanueva, P., & Perez-Rivera, J. A. (2024). Impact of Frailty on Heart Failure Prognosis: Is Sex Relevant? *Current heart failure reports*, *21*(2), 131-138. https://doi.org/10.1007/s11897-024-00650-4

This article explores the factors related to heart failure progression and how frailty is a significant contributor. Further, this article discusses the prognostic impact of frailty on the older patient with multimorbidity factors.

Rodés-Cabau, J., Ribeiro, H. B., Mohammadi, S., Serra, V., Al-Atassi, T., Iñiguez, A., Vilalta, V., Nombela-Franco, L., Sáez de Ibarra Sánchez, J. I., Auffret, V., Forcillo, J., Conradi, L., Urena, M., Moris, C., Muñoz-Garcia, A., Paradis, J. M., Dumont, E., Kalavrouziotis, D., Maria Pomerantzeff, P., Rosa, V. E. E., … VIVA (Transcatheter Aortic Valve Replacement Versus Surgical Aortic Valve Replacement for Treating Elderly Patients With Severe Aortic Stenosis and Small Aortic Annuli) Trial Investigators (2024). Transcatheter or Surgical Aortic Valve Replacement in Patients With Severe Aortic Stenosis and Small Aortic Annulus: A Randomized Clinical Trial. *Circulation*, *149*(9), 644-655. https://doi.org/10.1161/CIRCULATIONAHA.123.067326

This article explores the outcomes of surgical versus transcatheter aortic valve replacements and offers recommendations for management. While the study was small, it emphasizes the need for individualized treatment plans.

Tsukakoshi, D., Yamamoto, S., Nojima, I., Sato, M., Furuhashi, K., Takeda, S., Oguchi, N., Kasuga, S., Ichimura, H., Wada, Y., Seto, T., & Horiuchi, H. (2023). Association between postoperative delirium and heart rate variability in the intensive care unit and readmissions and mortality in elderly patients with cardiovascular surgery. *Heart and vessels*, *38*(3), 438-447. https://doi.org/10.1007/s00380-022-02173-1

Understanding important factors associated with ICU delirium in the older patient is essential for adequate mitigation efforts. This article explores some of those factors, the degree of ICU readmissions, and impact on mortality.

Savelieva, I., Fumagalli, S., Kenny, R. A., Anker, S., Benetos, A., Boriani, G., Bunch, J., Dagres, N., Dubner, S., Fauchier, L., Ferrucci, L., Israel, C., Kamel, H., Lane, D. A., Lip, G. Y. H., Marchionni, N., Obel, I., Okumura, K., Olshansky, B., Potpara, T., … Grodzicki, T. (2023). EHRA expert consensus document on the management of arrhythmias in frailty syndrome, endorsed by the Heart Rhythm Society (HRS), Asia Pacific Heart Rhythm Society (APHRS), Latin America Heart Rhythm Society (LAHRS), and Cardiac Arrhythmia Society of Southern Africa (CASSA). *Europace: European pacing, arrhythmias, and cardiac electrophysiology: Journal of the working groups on cardiac pacing, arrhythmias, and cardiac cellular electrophysiology of the European Society of Cardiology*, *25*(4), 1249-1276. https://doi.org/10.1093/europace/euac123

This expert consensus expands on the management of and provides recommendations for treatment of arrhythmias in the older patient with frailty.

Web Links

The link provides access to the STS Short-term / Operative Risk Calculator Adult Cardiac Surgery Database – All Procedures. This calculator is important for calculating the degree of risk associated with cardiothoracic surgeries. It helps the clinician discuss the treatment plan with patients undergoing operative procedures. Using frailty scales in the elderly patient undergoing transcatheter aortic valve replacement (TAVR) and surgical aortic valve replacement (SAVR) can assist in determining the degree of risk in postoperative morbidity and mortality. This article provides a quick frailty illustration/toolset. https://acsdriskcalc.research.sts.org/

Seattle Heart Failure - a calculator of projected survival at baseline and after interventions for patients with heart failure. https://depts.washington.edu/shfm/?width=800&height=600

GO-FAR (Good Outcome Following Attempted Resuscitation) Score - tool predicts survival to discharge with good outcome after an in-hospital cardiac arrest. https://www.mdcalc.com/calc/10033/go-far-good-outcome-following-attempted-resuscitation-score

Chronic Kidney Disease

Kalantar-Zadeh, K., et al. (2021). Chronic kidney disease. *The Lancet, 398*(10302): 786-802. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00519-5/fulltext

The article discusses chronic kidney disease (CKD), its progression, management strategies, and the importance of preserving kidney function through dietary, lifestyle, and pharmacological interventions to improve patient outcomes.

Kovesdy, C. P. (2022). Epidemiology of chronic kidney disease: an update 2022. *Kidney International Supplements, 12*(1): 7-11. https://doi.org/10.1016/j.kisu.2021.11.003.

This article highlights the global prevalence and impact of chronic kidney disease (CKD), emphasizing its high morbidity and mortality rates, particularly in vulnerable populations, and the urgent need for improved prevention and treatment strategies.

Cognitive Impairment

American Geriatrics Society Ethics Committee and Clinical Practice and Models of Care Committee (2014). American Geriatrics Society Feeding Tubes in Advanced Dementia Position Statement. *Journal of the American Geriatrics Society, 62*(8), 1590-1953. https://doi.org/10.1111/jgs.12924

This position statement provides the risks of feeding tubes in patients with dementia.

Zonsius, M.C., Cothran, F.A., & Miller, J.M. (2020). CE: Acute care for patients with dementia. *The American Journal of Nursing, 120*(4), 34-42. https://doi.org/10.1097/01.NAJ.000660024.45260.1a

This article describes how dementia significantly increases hospitalization risk and vulnerability to complications like delirium and infections in older adults, underscoring the need for nurses to apply evidence-based strategies tailored to the complex needs of these patients in acute care settings.

Harwood, R. H. (2012). Dementia for hospital physicians. *Clinical Medicine, 12*(1), 35-39. https://doi.org/10.7861/clinmedicine.12-1-35

This article provides an overview of difficulties that occur when treating patients with dementia in the hospital and practical advice on treatment and management.

COVID

Identification in Acute Care

Hunt, C., Olcott, F., Williams, G., & Chan, T. (2021) Failing the frail: The need to broaden COVID-19 case definition for geriatric patients. *Clinical Medicine* 21(6). e604 e607. https://doi.org/10.7861/clinmed.2021-0308

Older adults may present with non-specific symptoms such as delirium, falls, or functional decline, rather than typical respiratory symptoms. Awareness of these presentations is crucial for timely diagnosis and management.

Canevelli, M., Bruno, G., & Cesari, M. (2020). Providing simultaneous COVID-19 sensitive and dementia sensitive care as we transition from crisis care to ongoing care. *Journal of the American Medical Directors Association, 21*(7). 968-969. https://doi.org/10.1016/j.jamda.2020.05.025

All patients over 65 should undergo a frailty assessment

upon admission using tools like the Clinical Frailty Scale (CFS). This aids in risk stratification and care planning.

Long COVID

Seo, J. W., Kim, S. E., Kim, Y., Kim, E. J., Kim, T., Kim, T., Lee, S. H., Lee, E., Lee, J., Seo, Y. B., Jeong, Y. H., Jung, Y. H., Choi, Y. J., & Song, J. Y. (2024). Updated Clinical Practice Guidelines for the Diagnosis and Management of Long COVID. *Infection & chemotherapy, 56*(1), 122-157. https://doi.org/10.3947/ic.2024.0024

A comprehensive evaluation including medical history, physical examination, and appropriate testing is recommended to tailor management plans.

Deng, J., Qin, C., Lee, M., Lee, Y., You, M., & Liu, J. (2024). Effects of rehabilitation interventions for old adults with long COVID: A systematic review and meta-analysis of randomized controlled trials. *Journal of Global Health 14:* 05025. doi: 10.7189/jogh.14.05025

This article provides information related to geriatric rehabilitation focusing on improving functional status and quality of life is beneficial for older adults recovering from long COVID.

COVID-19 Pneumonia and ARDS

Cunha, M. C. A., Schardong, J., Righi, N. C., Lunardi, A. C., Sant'Anna, G. N., Isensee, L. P., Xavier, R. F., Pompeu, J. E., Weigert, R. M., Matte, D. L., Cardoso, R. A., Abras, A. C. V., Silva, A. M. V., Dorneles, C. C., Werle, R. W., Stake, A. C., Ferreira, J. C., Plentz, R. D. M., & Carvalho, C. R. F. (2023). Aging-related predictive factors for oxygenation improvement and mortality in COVID-19 and acute respiratory distress syndrome (ARDS) patients exposed to prone position: A multicenter cohort study. *Clinics in Practice, 56*, Article 100180. https://doi.org/10.1016/j.clinsp.2023.100180

In elderly patients with severe COVID-19-induced ARDS, prone positioning may improve oxygenation, with the response potentially correlating with severity scores.

Meftahi, G. H., Jangravi, Z., Sahraei, H., & Bahari, Z. (2020). The possible pathophysiology mechanism of cytokine storm in elderly adults with COVID-19 infection: The contribution of "inflame-aging." *Inflammation Research, 69*(9), 825-839. https://doi.org/10.1007/s00011-020-01372-8

The paper highlights the importance of understanding age-related immune changes to develop targeted interventions and suggests that anti-inflammatory treatments could potentially help mitigate severe COVID-19 outcomes in older adults.

Delirium

Wilson, J. E., Mart, M. F., Cunningham, C., Shehabi, Y., Girard, T. D., MacLullich, A. M., ... & Ely, E. W. (2020). Delirium. *Nature Reviews Disease Primers*, 6(1), 90. https://doi.org/10.1038/s41572-020-00223-4

Delirium is an acute neuropsychiatric syndrome driven by multifactorial causes—including neuroinflammation, metabolic disruption, and neurotransmitter imbalance—with current management relying on non-pharmacological, multidomain interventions due to limited treatment efficacy and ongoing challenges in detection and prevention across healthcare systems

Mattison, M. L. (2020). Delirium. *Annals of internal medicine, 173*(7), ITC49-ITC64. https://doi.org/10.7326/AITC202010060

This article discusses how delirium is a common, acute confusional state linked to acute brain dysfunction, especially in vulnerable patients, and while its pathophysiology remains unclear, effective management hinges on early recognition and multimodal strategies to address contributing factors and improve outcomes.

Kennedy, M., Helfand, B.K.I., Gou, R.Y., Gartaganis, S.L., Webb, M., Moccia, J.M., … Inouye, S.K. (2020). Delirium in older patients with COVID-19 presenting to the emergency department. *JAMA Network Open, 3*(11), e2029540. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2773106

This article outlines the importance of screening and iden-tifying COVID-19 in older adults presenting with delirium to the emergency department as this may be their only sign/symptom.

Fong, T. G., & Inouye, S. K. (2022). The inter-relationship between delirium and dementia: The importance of delirium prevention. *Nature Reviews Neurology, 18*(10), 579-596. https://doi.org/10.1038/s41582-022-00698-7

This article explains that delirium and dementia are distinct yet interconnected cognitive disorders in older adults, with delirium both increasing the risk for and accelerating dementia, highlighting the importance of prevention and early intervention to potentially mitigate long-term cognitive decline.

Web Links

American College of Emergency Physicians. (2021). *ADEPT: Confusion and Agitation in the Elderly ED Patient.*

This application resource can be used by providers to assist with screening, diagnosing, and treating patients with delirium and agitation.

The American Geriatrics Society CoCare. (2019). *The Hospital Elder Life Program (HELP).*

This website provides a description of an innovative model of hospital care designed to prevent delirium and functional decline.

The American Geriatrics Society CoCare. (2021). *Delirium Prevention Toolkit Amidst COVID-19 in the Older Emergency Department Patient.*

A resource for providers to use in delirium prevention during the COVID-19 pandemic.

Critical Illness, Brain Dysfunction, and Survivorship (CIBS) Center. (2021). Monitoring Delirium in the ICU.

Clinical practice guidelines for pain, agitation, and delirium recommend that all ICU patients be assessed for delirium once per shift using specific tools. Tools used for this assessment are located on this website.

American Delirium Society (2025). Delirium Awareness. It's Delirium Not Dementia.

This website has tools and scoring systems to assist with identifying delirium.

Engage-IL (2017). Geriatric CEU Modules.

This website offers free CEU modules regarding geriatric care.

American Association of Retired Persons (AARP) (n.d.). Delirium in the Emergency Department: Serious, costly, and potentially deadly.

Videos

Johns Hopkins University Hospital. (2018). ICU Diaries Help Prevent Post-Traumatic Stress Disorder.

This 3-minute video includes an explanation of the use of ICU diaries in effort to prevent post-traumatic stress disorder.

Critical Illness, Brain Dysfunction, and Survivorship (CIBS) *Center. (2021). Series of Patient Testimonials Post-ICU.*

This resource provides written accounts and video testimonials from patients who experienced delirium in the ICU.

Hypoactive Delirium

Bisson, D. E., Clancy Burgess, S. C., Gamache, M. E., Dunn, M. P., Valeras, A. B., & Lindpaintner, L. S. (2024). Innovation in delirium care: A standardized intervention to reverse inattention using touch and movement. *Journal of the American Geriatrics Society, 72*(11), 2924-2926. https://doi.org/10.1111/jgs.19254

This article presents preliminary observations suggesting that the AATM/MTC intervention may be a feasible, safe, and inexpensive method to reduce inattention and normalize arousal levels in patients with hypoactive delirium.

Hosker, C., & Ward, D. (2017). Hypoactive delirium. *BMJ, 357*(j2047). https://doi.org/10.1136/bmj.j2047

This resource provides an overview of hypoactive delirium and epidemiologic data, guidance on how to identify hypoactive delirium, potential differential diagnoses, how to diagnose, and how to treat hypoactive delirium.

Depression

Nobis, A., Zalewski, D., & Waszkiewicz, N. (2020). Peripheral markers of depression. *Journal of clinical medicine, 9(*12), 3793. https://doi.org/10.3390/jcm9123793

Major Depressive Disorder (MDD) is a complex and disabling condition linked to biological alterations including inflammation, oxidative stress, hormonal imbalance, and disrupted neurotrophic signaling with ongoing research into biomarker panels aiming to improve diagnosis and treatment despite challenges from the disorder's heterogeneity and comorbidities.

Marwaha, S., Palmer, E., Suppes, T., Cons, E., Young, A. H., & Upthegrove, R. (2023). Novel and emerging treatments for major depression. *The Lancet, 401*(10371), 141-153. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)02080-3/fulltext

This article discusses how depression remains a major global health challenge with limitations in current treatments, prompting the development of novel biological therapies that target brain and body mechanisms, some of which are nearing clinical application.

Web Link

Alexopoulos, G.S. (2019). Mechanisms and treatment of late-life depression.*Translational Psychiatry, 9*(188). https://www.nature.com/articles/s41398-019-0514-6

This article looks at etiologic and predisposing factors related to depression. Pharmacologic and nonpharmacologic treatment modalities are explored.

Endocrine

Diabetes

American Diabetes Association. (2021). Older adults: Standard of medical care in diabetes - 2021. *Diabetes Care, 44*(Suppl. 1), S168-S179. https://doi.org/10.2337/dc21-S012

The American Diabetes Association's Professional Practice Committee is an interprofessional group tasked with updating the Standards of Medical Care in Diabetes each year. These clinical practice recommendations provide guidance on diabetes care and treatment goals as well as tools that can be used to evaluate quality of care for older adults.

Cole, J.B., Florez, J.C. (2020). Genetics of diabetes mellitus and diabetes complications. *Nature Reviews Nephrology, 16,* 377–390. https://doi.org/10.1038/s41581-020-0278-5

This article discusses the rapid growth of diabetes worldwide, its severe complications, and the significant genetic component in both diabetes and its complications, highlighting the advancements in genetic research and the need for further studies.

ElSayed, N. A., Aleppo, G., Aroda, V. R., Bannuru, R. R., Brown, F. M., Bruemmer, D., ... & Gabbay, R. A. (2023). Introduction and methodology: Standards of care in diabetes—2023. *Diabetes care, 46*(Supplement_1), S1-S4.https://doi.org/10.2337/dc23-Sint

This article discusses the American Diabetes Association's "Standards of Care in Diabetes," which provides comprehensive guidelines for diabetes management, emphasizing the importance of continuous medical care, self-management education, and evidence-based interventions to improve outcomes..

Acute and Emergent Glycemic Emergencies

Forțofoiu, M., Vladu, I. M., Forțofoiu, M. C., Pădureanu, R., Clenciu, D., Rădulescu, D., & Pădureanu, V. (2022). New strategies of diagnostic and therapeutic approach to emergencies in the evolution of patients with diabetes mellitus. *Experimental and Therapeutic Medicine, 23*(2), 178. https://doi.org/10.3892/etm.2021.11101

Acute complications of diabetes, such as hypoglycemia, diabetic ketoacidosis, and hyperosmolar states, significantly increase emergency department visits and healthcare costs, requiring rapid diagnosis and intensive management to prevent severe outcomes.

Umpierrez, G. E., Davis, G. M., ElSayed, N. A., Fadini, G. P., Galindo, R. J., Hirsch, I. B., ... & Dhatariya, K. K. (2024). Hyperglycemic crises in adults with diabetes: A consensus report. *Diabetes care, 47*(8), 1257-1275. https://doi.org/10.2337/dci24-0032

This article discusses up-to-date knowledge about epidemiology, pathophysiology, clinical presentation, and recommendations for the diagnosis, treatment, and prevention of DKA and HHS in adults.

Thyroid Emergencies

Farooqi, S., Raj, S., Koyfman, A., & Long, B. (2023). High risk and low prevalence diseases: Thyroid storm. *The American journal of emergency medicine, 69*, 127-135. https://doi.org/10.1016/j.ajem.2023.03.035

This article discusses thyroid storm and how it is a life-threatening endocrine emergency marked by severe thyrotoxicosis and multiorgan dysfunction, requiring prompt recognition, supportive care, and targeted therapy in the emergency department to prevent rapid deterioration and death.

Bridwell, R. E., Willis, G. C., Gottlieb, M., Koyfman, A., & Long, B. (2021). Decompensated hypothyroidism: A review for the emergency clinician. *The American Journal of Emergency Medicine, 39,* 207-212. https://doi.org/10.1016/j.ajem.2020.09.062

This article explains how decompensated hypothyroidism is a rare but life-threatening endocrine emergency that presents with altered mental status and depressed vital signs, requiring prompt recognition and treatment to reduce high morbidity and mortality.

End-of-Life Care, Advance Care Planning

Wilkin, K., Fang, M. L., & Sixsmith, J. (2024). Implementing advance care planning in palliative and end of life care: A scoping review of community nursing perspectives. BMC geriatrics, 24(1), 294. https://doi.org/10.1186/s12877-024-04888-4

This review identifies that while community nurses are well-positioned to lead advance care planning (ACP) discussions with palliative patients, their effectiveness is influenced by barriers such as lack of confidence, legal uncertainty, and role ambiguity, and facilitated by strong patient relationships, experience, and palliative care training.

Weissman, J. S., Reich, A. J., Prigerson, H. G., Gazarian, P., Tjia, J., Kim, D., ... & Manful, A. (2021, July). Association of advance care planning visits with intensity of health care for Medicare beneficiaries with serious illness at the end of life. In JAMA Health Forum (Vol. 2, No. 7, pp. e211829-e211829). American Medical Association. doi:10.1001/jamahealthforum.2021.1829

This study found that timely advance care planning (ACP) visits—conducted more than one month before death—were associated with significantly less intensive end-of-life care among seriously ill Medicare patients, while late ACP visits were linked to more aggressive care, highlighting the importance of early ACP discussions in aligning care with patient preferences.

Carter, H.E., Lee, X.J., Gallois, C., Winch, S., Callaway, L., Willmott, L., … Graves, N. (2019). Factors associated with non-beneficial treatments in end of life hospital admissions: A multicentre retrospective cohort study in Australia. *BMJ Open*, *9*(11), e030955. https://doi.org/10.1136/bmjopen-2019-030955

The article provides a result of a retrospective multicenter cohort study to assess factors associated with non-beneficial treatment (NBT) in hospitals, beyond an intensive care setting in Australia. One of the findings revealed a positive association between NBT and older patients.

McMahan, R. D., Tellez, I., & Sudore, R. L. (2021). Deconstructing the complexities of advance care planning outcomes: What do we know and where do we go? A scoping review. *Journal of the American Geriatrics Society, 69*(1), 234-244. https://doi.org/10.1111/jgs.16801

This article of randomized controlled trials found that while advance care planning (ACP) interventions vary widely, most show positive effects—especially in improving communication, satisfaction, and reducing distress—though outcomes like goal concordance, patient quality of life, and healthcare utilization remain inconsistent, highlighting the need for tailored, context-specific approaches and standardized evaluation.

Books

Byock, I. (2013). *The best care possible: A physician's quest to transform care through the end of life*. Avery/ Penguin Group. ISBN 978-1-58333-459-1

The author, a palliative physician, shares complex conversations he has had with patients and families about end-of-life. He illustrates his honesty, compassion, and humanity through complex real-life stories.

Gawande, A. (2014). *Being mortal: Medicine and what matters in the end.* Metropolitan books. ISBN 978-0-8050-9515-9 (hardcover), ISBN 978-1-62779-055-0 (electronic book)

The author, a surgeon, writer, and public speaker, reveals the suffering of patients and struggles of his profession through stories of his patients and families. He reveals the ultimate goal of medicine is to face the inescapable, aging and death, in order to promote good lives to the end.

Web Links

University of Toronto, Dalla Lana School of Public Health. (2008). *Community Tools: Aid to Capacity Evaluation (ACE).* The website provides a link to a downloadable Aid to Capacity Evaluation (ACE) package.

The Conversation Project & Institute for Healthcare Improvement. (n.d.). *How to Engage Patients and Families About End-of Life Care.* Resources for Healthcare Professionals.

The resource provides links to online basic skills for conversations about end-of-life, toolkit, advance care planning policies, cultural and ethical considerations, resources for engaging patients, and family and research on end-of-life conversation. It is required to create an account with no charge to take free Institute for Healthcare Improvement online courses ("open school").

Emergency Care

Lucke, J. A., Mooijaart, S. P., Heeren, P., Singler, K., McNamara, R., Gilbert, T., ... & Conroy, S. (2022). Providing care for older adults in the Emergency Department: Expert clinical recommendations from the European Task Force on Geriatric Emergency Medicine. *European Geriatric Medicine, 13,* 309–317 (2022). https://doi.org/10.1007/s41999-021-00578-1

This article bridging the gap between growing knowledge and limited practice in Geriatric Emergency Medicine across Europe, a multidisciplinary expert group developed and disseminated eight evidence-based clinical recommendation posters—covering topics like frailty assessment, delirium, medication review, and end-of-life care—to enhance emergency care for older adults.

Shaw, G. (2023). Special Report: EM's Next Priority: Geriatric ED Care. *Emergency Medicine News,* 45(1):p 12-13, DOI: 10.1097/01.EEM.0000911876.05122.d0

Despite the publication of the Geriatric Emergency Department Guidelines eight years ago, most U.S. emergency departments still fall short in implementing recommended best practices particularly in managing delirium, falls, and polypharmacy due to limited resources and institutional support, leaving older adults at continued risk.

Testa, L., Richardson, L., Cheek, C., Hensel, T., Austin, E., Safi, M., ... & Clay-Williams, R. (2024). Strategies to improve care for older adults who present to the emergency department: A systematic review. *BMC health services research, 24*(1), 178. https://doi.org/10.1186/s12913-024-10576-1

This systematic review found that while various strategies—such as comprehensive assessments, targeted care, and medication safety—can improve emergency department (ED) care for older adults, their effectiveness is often misaligned with current ED performance metrics, highlighting the need for better integration of patient and staff perspectives and more consistent reporting to support sustainable, system-wide improvements.

Web Links

American College of Emergency Physicians, American Geriatric Society, Emergency Nurses Association, & Society for Academic Emergency Medicine. (2013). *Geriatric Emergency Department Guidelines.*

This document provides a standardized set of guidelines that can effectively improve the care of the geriatric population in the emergency department by determining the appropriate level of care needed for the older adult.

American College of Emergency Physicians (ACEP) Geriatric (2025). Emergency Department Accreditation.

This website assists with emergency departments that are interested in geriatric accreditation.

Geriatric Emergency care Applied Research (GEAR) (2025). https://gearnetwork.org/

The mission of the Geriatric Emergency care Applied Research (GEAR) network is to generate evidence to improve the emergency care of geriatric patients and those with dementia and other cognitive impairments through research.

Frailty

Allison, R., Assadzandi S., and Adelman, M. (2021) Frailty: Evaluation and management. *American Family Physician, 103*(4):219-226 https://www.aafp.org/pubs/afp/issues/2021/0215/p219.html

This article discusses how frailty is a common but often underrecognized geriatric syndrome marked by increased vulnerability to adverse outcomes, requiring individualized management based on severity, with interventions ranging from physical activity to palliative care depending on the patient's condition and goals.

Kim, D. H., & Rockwood, K. (2024). Frailty in older adults. *New England Journal of Medicine, 391*(6), 538-548. DOI: 10.1056/NEJMra2301292

This article discuss how frailty is a growing global concern among aging populations and characterized by diminished physiological reserve and increased vulnerability, with prevalence rising sharply with age and influenced by social and healthcare contexts, necessitating individualized management strategies and broader systemic approaches to reduce its impact and address current evidence gaps.

Web Links

Royal College of Physicians. (2020). *Acute Care Toolkit 3: Acute Medical Care for Frail Older People.*

This toolkit and addendum provide recommendations for healthcare providers working in acute medical units to assist in identifying urgent issues to improve patient outcomes for frail older adults.

Brown, R. (2023). Elder care: A resource for interprofessional providers. Frailty.

This pdf gives tools on how to assist with frailty in older adults. Includes links to frailty instruments, interventions, and differential diagnosis.

Geriatric Syndromes

Sanford, A. M., Morley, J. E., Berg-Weger, M., Lundy, J., Little, M. O., Leonard, K., & Malmstrom, T. K. (2020). High prevalence of geriatric syndromes in older adults. *PloS one*, *15*(6), e0233857. https://doi.org/10.1371/journal.pone.0233857

This article discusses the Rapid Geriatric Assessment (RGA), a brief screening tool developed at Saint Louis University, revealed high prevalence rates of frailty, sarcopenia, weight loss risk, and dementia among older adults across various care settings, supporting its annual use in Medicare wellness visits to improve early detection and management of these geriatric syndromes.

Kucukdagli, P., Bahat, G., Bay, I., Kilic, C., Oren, M. M., Turkmen, B. O., & Karan, M. A. (2020). The relationship between common geriatric syndromes and potentially inappropriate medication use among older adults. *Aging clinical and experimental research, 32,* 681-687. https://doi.org/10.1007/s40520-019-01239-x

This study found that potentially inappropriate medication (PIM) use in older adults is significantly associated with polypharmacy, malnutrition, depression, falls, and dementia, highlighting the need for targeted strategies to reduce PIM-related risks in geriatric care.

Web Links

Comprehensive Geriatric Assessment (CGA) Toolkit Plus Available at cgakit.com. This toolkit offers a multidimensional, holistic assessment framework for older adults, addressing health, wellbeing, and functional status. Includes printable and online tools, patient and caregiver handouts, videos, and topical kits for general practitioners and patients. Available at cgakit.com.

Health Literacy

Liu, C., Wang, D., Liu, C., Jiang, J., Wang, X., Chen, H., ... & Zhang, X. (2020). What is the meaning of health literacy? A systematic review and qualitative synthesis. *Family medicine and community health, 8*(2), e000351. https://doi.org/10.1136/fmch-2020-000351

This article discuss how health literacy is the ability to access, understand, and use health-related knowledge and information to make informed decisions and maintain well-being within the context of individual and healthcare system needs

Nutbeam, D., & Lloyd, J. E. (2021). Understanding and responding to health literacy as a social determinant of health. *Annual review of public health, 42*(2021), 159-173. https://doi.org/10.1146/annurev-publhealth-090419-102529

This article explains how health literacy follows a social gradient and, while not a cure-all for health inequities, can help mitigate their effects through targeted, skill-building interventions and improved health communication.

Web Links

Center for Disease Control and Prevention (CDC). (2020). *Health Literacy. Older Adults.*

The website provides information about effective communication while considering health literacy of older adults. It in-cludes a link to a podcast by Dr. Linda Anderson, former director of CDC's Healthy Aging Program, who discusses the importance of addressing health literacy issues for older adults.

Videos

2010 Legacies Now. (2010). *Health Literacy: Learning is the Best Medicine.*

This 9-minute video describes literacy and its importance in health determinants.

Center for Collaboration, Motivation, and Innovation. (2016). *Health Literacy Umbrella.*

This 4-minute video reviews key concepts for improving health literacy.

Hearing Impairment

Koerber, R. M., Kokorelias, K. M., & Sinha, S. K. (2024). The clinical use of personal hearing amplifiers in facilitating accessible patient–provider communication: A scoping review. *Journal of the American Geriatrics Society, 72*(7), 2195–2205. doi: 10.1111/jgs.18784.

This article provides a scoping review of the effects of personal hearing amplifiers in patients with hearing impairment.

Olson, A. D., & McKeich, M. A. (2017). Assessment and intervention for patients with hearing loss in hospice. *Journal of Hospice & Palliative Nursing, 19*(1), 97–103. https://doi.org/10.1097/njh.0000000000000314

This article contains step-by-step instructions to ensure hearing aids are functioning and evidence-based strategies to improve communication with patients with hearing impairment.

Web Links

Cleveland Clinic. (2025). Improving the communication experience between caregivers and patients with hearing loss.

This resource contains strategies to improve communication with patients with hearing impairment.

Assessment

Hospitalized older adults with hearing impairment experience longer length of stay, increased risk of readmission, more complications, and functional decline leading to overall increased healthcare costs. A suggested screening question to assess for hearing loss on admission is, “Can you tell me about any difficulties you have with hearing or understanding conversations?”

Hematology

Oncologic Emergencies

Gould Rothberg, B. E., Quest, T. E., Yeung, S. C. J., Pelosof, L. C., Gerber, D. E., Seltzer, J. A., ... & Kyriacou, D. N. (2022). Oncologic emergencies and urgencies: A comprehensive review. CA: *A cancer journal for clinicians, 72*(6), 570-593. https://doi.org/10.3322/caac.21727

This article reviews the spectrum of oncologic emergencies and urgencies in acute care settings, discussing presentation, etiology, clinical pathways, and criteria for discharge or inpatient transition, while also covering complications from targeted therapies and strategies for hospice admission from the ED.

Yilmaz, S., Aryal, K., King, J. et al. Understanding oncologic emergencies and related emergency department visits and hospitalizations: a systematic review. *BMC Emergency Medicine 25*, 40 (2025). https://doi.org/10.1186/s12873-025-01183-2

This systematic review highlights the frequent ED visits and hospitalizations among cancer patients due to severe illness from cancer progression or treatment side effects, emphasizing the need for tailored diagnostic and intervention pathways to improve acute care outcomes, especially in the geriatric population.

Thandra, K., Salah, Z., & Chawla, S. (2020). Oncologic emergencies - The old, the new, and the deadly. *Journal of Intensive Care Medicine*, *35*(1), 3-13. https://doi.org/ 10.1177%2F0885066618803863

These authors review some of the oncologic emergencies that may require critical care measures in the intensive care setting and include a discussion on potential adverse effects of the newer and more innovative therapies (febrile neutropenia, leukostasis, tumor lysis syndrome, malignant pericardial effusion and tamponade, pulmonary hemorrhage, CAR-T cell toxicities, and immune checkpoint inhibitor adverse events).

Thrombosis

Hamza, M.S., & Mousa, S.A. (2020). Cancer-associated thrombosis: Risk factors, molecular mechanisms, future man-agement. *Clinical and Applied Thrombosis/Hemostasis, 26*, 1-13. https://doi.org/10.1177/1076029620954282

The authors discuss the risk factors for cancer-associated thrombosis and the mechanisms for increased risk of clotting and actual clotting. Treatment options are described.

Ortel, T.L., Neumann, I., Ageno, W., Beyth, R., Clark, N.P.,… Zhang, Y. (2020). American Society of Hematology 2020 guidelines for management of venous thromboembolism: Treatment of deep vein thrombosis and pulmonary embolism. *Blood Advances*, *4*(19), 4693-4738. https://doi.org/10.1182/bloodadvances.2020001830

This article provides The American Society of Hematology’s 2020 guidelines for management of venous thromboembolism.

Hospital Care, Transition of Care

Blenkinsopp, A., Cheong, V-Li, Fylan, B., Karban, K., Silcock, J., Smith, H., & Tomlinson, J. (2020). Successful care transitions for older people: A systematic review and meta-analysis of the effects of interventions that support medication continuity. *Age and Ageing, 49*(4), 558-569. https://doi.org/ 10.1093/ageing/afaa002

Medication-related problems occur frequently at the time of discharge from hospital to community. Bridging the gap and ensuring medication continuity has an impact on reducing hospital readmission.

Sun, M., Qian, Y., Liu, L., Wang, J., Zhuansun, M., Xu, T., & Rosa, R. D. (2023). Transition of care from hospital to home for older people with chronic diseases: a qualitative study of older patients' and health care providers' perspectives. *Frontiers in public health, 11*, 1128885. https://doi.org/10.3389/fpubh.2023.1128885

The study explores the perspectives of older adults with chronic illnesses and healthcare providers in China on the transition from hospital to home, identifying key barriers and facilitators—such as communication, care coordination, resource access, and policy alignment—that impact the quality and safety of transitional care.

Web Links

Medicare. (2020). *The Official U.S. Government Site for Medicare.*

A federal government website managed and paid for by the U.S. Centers for Medicare & Medicaid Services. Medicare primarily provides health insurance for Americans age 65 and older.

National Transition of Care Coalition. (2021). *National Transition of Care Coalition* (NTOCC).

Founded in 2006, NTOCC's vision is to improve transitions of care by increasing quality of care and patient safety while controlling cost. Its mission is to raise awareness about transitions of care among healthcare professionals, government leaders, patients, and caregivers to increase the quality of care, reduce medication errors, and enhance clinical outcomes. The website provides free resources for family caregivers, healthcare professionals, policymakers, and media.

Medicare. (2020). *A Quick Look at Medicare.*

The resource provides basic information regarding Medicare coverage. Many acute care nurses and even medical providers are unsure about what and which services Medicare covers. Lack of knowledge often causes ineffective medical care planning, especially at discharge.

Legal Issues

Podgorica, N., Flatscher-Thöni, M., Deufert, D., Siebert, U., & Ganner, M. (2021). A systematic review of ethical and legal issues in elder care. *Nursing ethics, 28*(6), 895-910. https://doi.org/10.1177/0969733020921488

This literature review identifies key ethical and legal issues in geriatric care—particularly around autonomy, decision-making, and patients' rights—and emphasizes the need for further education of caregivers, older adults, and families to support ethical and legally sound care practices, especially in end-of-life planning.

Podgorica, N., Pjetri, E., Müller, A. W., & Deufert, D. (2021). Identifying ethical and legal issues in elder care. *Nursing ethics, 28*(7-8), 1194-1209. https://doi.org/10.1177/0969733020981761

This qualitative study found that nurses in Albanian elder care institutions face numerous ethical and legal challenges—particularly in everyday and end-of-life care—exacerbated by limited education and systemic constraints, highlighting the urgent need for improved training and support to navigate conflicts between patient rights and traditional family roles.

Web Links

American Bar Association. (2020). *Self-Help Online Advanced Care Planning Tools.*

This website is designed to assist patients make healthcare advance directives.

Malnutrition

Dent, E., Wright, O.R.L., Woo, P.J., & Hoogendijk, E.O. (2023). Malnutrition in older adults. *The Lancet, 401*, 951-966. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)02612-5/fulltext?ref=svtv.org

This article discusses the identification and treatment of malnutrition in older adults.

Serón-Arbeloa, C., Labarta-Monzón, L., Puzo-Foncillas, J., Mallor-Bonet, T., Lafita-López, A., Bueno-Vidales, N., & Montoro-Huguet, M. (2022). Malnutrition Screening and Assessment. *Nutrients, 14*(12), 2392. https://doi.org/10.3390/nu14122392

This article describes ways to identify malnutrition early and perform nutritional screenings and assessments to improve patient outcomes.

Web Links

American Academy of Hospice and Palliative Medicine. (2021). *Don't Recommend Percutaneous Feeding Tubes in Patients with Advanced Dementia; Instead Offer Oral Assisted Feeding.* Choosing Wisely.

This website provides a point of view in feeding patients who have dementia.

American Board of Internal Medicine. (2013). *Choosing Wisely: Feeding Tubes for People with Alzheimer's.*

The website provides an explanation of when feeding tubes are used in patients with Alzheimer's disease.

Nestle Nutrition Institute. (2006). *Mini Nutrition Assessment, MNA®.*

MNA is a validated nutrition screening and assessment tool that can identify older patients age 65 and older who are malnourished or at risk for malnourishment.

Mobility

Acutely Ill

Zang, K., Chen, B., Wang, M., Chen, D., Hui, L., Guo, S., ... & Shang, F. (2020). The effect of early mobilization in critically ill patients: A meta-analysis. *Nursing in critical care, 25*(6), 360-367. https://doi.org/10.1111/nicc.12455

This article explains how early mobilization in ICU patients significantly reduces ICU-acquired weakness, shortens ICU and hospital stays, improves functional outcomes, and lowers complication rates, though it does not significantly affect mortality or ventilator duration.

Paton, M., Chan, S., Tipping, C. J., Stratton, A., Serpa Neto, A., Lane, R., ... & Hodgson, C. L. (2023). The effect of mobilization at 6 months after critical illness—meta-analysis. *NEJM evidence, 2*(2), EVIDoa2200234. https://evidence.nejm.org/doi/full/10.1056/EVIDoa2200234

This systematic review and meta-analysis found that early active mobilization in critically ill adults may modestly improve long-term physical function but does not significantly increase days alive and out of hospital by 180 days, and may carry a potential risk of increased mortality and adverse events.

Web Links

Duke University Occupational and Environmental Safety Office. (2021). *Duke MOVES (Duke Moves Often, Very Early, and Safely).*

Duke MOVES provides links to bedside mobility assessment toolkit (BMAT); champion and coach toolkit; and fall, equipment, and bariatric resources. The BMAT allows nurses (and other healthcare workers) to determine appropriate patient handling and mobility equipment/device to safely move or mobilize the patient in acute care.

Assessment Tools

Fessele, K. L., & Syrkin, G. (2024, August). Mobility Assessment Instruments. In Seminars in Oncology Nursing (Vol. 40, No. 4, p. 151660). WB Saunders. https://doi.org/10.1016/j.soncn.2024.151660

This review examines commonly used mobility assessment tools across clinical and research settings, emphasizing the importance of selecting instruments based on population, setting, and evidence of validity, while highlighting the growing role of nurses and sensor technologies in promoting and monitoring patient mobility.

Johns Hopkins Medicine. (2021). *Johns Hopkins Activity and Mobility Promotion (AMP)™.*

This website provides details on an interprofessional program support hospitals and healthcare providers that want to change the culture of patient immobility, providing frontline caregivers and hospital leaders with the tools and support needed to design and implement structured quality improvement processes to successfully increase patient activity and mobility.

Obesity

Battista, F., Bettini, S., Verde, L., Busetto, L., Barrea, L., & Muscogiuri, G. (2024). Diet and physical exercise in elderly people with obesity: The state of the art. *European journal of internal medicine*, *130*, 9–18. https://doi.org/10.1016/j.ejim.2024.08.007

This article examines the impact of exercise on the older patient with obesity. It provides the science behind diet and exercise in older patients.

Kennedy, A. B., Taylor, S. S., Lavie, C. J., & Blair, S. N. (2022). Ending the Stigma: Improving Care for Patients Who Are Overweight or Obese. *Family practice management*, *29*(2), 21–25. https://www.aafp.org/pubs/fpm/issues/2022/0300/p21.html

This article explores the impact of weight bias on patients and offers suggestions for mitigation efforts.

Pain Management

Small, C., & Laycock, H. J. J. O. B. S. (2020). Acute postoperative pain management. *Journal of British Surgery, 107*(2), e70-e80. https://doi.org/10.1002/bjs.11477

This article explains that effective postoperative pain management requires a comprehensive, individualized approach that integrates biological, psychological, and social factors, emphasizing both pharmacological and non-pharmacological strategies to enhance recovery and improve patient outcomes.

Alorfi, N. M. (2023). Pharmacological Methods of Pain Management: Narrative Review of Medication Used. *International Journal of General Medicine, 16*, 3247–3256. https://doi.org/10.2147/IJGM.S419239

This article discusses how pharmacological pain management relies on a multimodal, evidence-based approach using diverse drug classes to enhance pain relief and minimize side effects, with ongoing advancements in drug targets and delivery systems shaping its future.

Palliative Care

Aslakson, R., Dy, S.M., Wilson, R.F., Waldfogel, J.M., Zhang, A., Isenberg, S.R., ... Robinson, K.A. (2017). *Assess- ment tools for palliative care.* Technical Brief No. 30, AHRQ Publication No. 14-17-EHC007-EF. Agency for Healthcare Research and Quality. https://www.ncbi.nlm.nih.gov/books/ NBK447774/?report=reader

Assessment tools for palliative care are helpful for providers. This publication provides an overview of more than 150 assessment tools addressing several domains of palliative care.

Reville, B., & Foxwell, A.M. (2017). Competency milestones: Guidelines for advanced practice palliative nurses. *Journal of Hospice & Palliative Nursing, 19*(4), 339-342. https://doi.org/10.1097/NJH.0000000000000352

Advanced practice nurses with specialty-level skills in hospice and palliative care are urgently needed to optimize care delivery for Americans with advanced serious illness. This article presents advanced practice palliative care nurse competency milestones from novice to specialist.

Advanced Care Planning

Hickman, S., Lum, H, Walling, A., Savoy, A. & Sudore, R. (2023). The care planning umbrella: The evolution of advanced care planning. *Journal of American Geriatrics Society, 71*(7), 2350-2356. https://doi.org/10.1111/jgs.18287

The article explores the transformation of Advance Care Planning (ACP) from a narrow focus on legal documentation to a broader, more dynamic process. It underscores the importance of viewing ACP as a dynamic, inclusive process that extends beyond legal documentation to encompass ongoing communication and alignment with patients' evolving goals and values.

Web Links

https://www.closure.org/: Helpful Tools for Advance Care Planning. Closure.org provides a collection of tools to assist patients and families in dealing with end-of-life issues. Offers important documents like living wills, tip sheets, and questionnaires to facilitate advance care planning.

End of Life Care

Jensen, H., Halvorsen, K., Jerpseth H., Fridh, I., Lind, R. Practice recommendations for end-of-life care in the intensive care unit. *American Association of Critical-Care Nurses. 2020;40*(3):14-22. https://doi.org/10.4037/ccn2020834

This article touches on the following domains: end-of-life decision-making, place to die, patient comfort, family presence in the intensive care unit, visiting children, family needs, preparing the family, staff presence, when the patient dies, after-death care of the family, and caring for staff.

Web Links

The Royal College of Physicians (2021). Acute care resource: End-of-life care in the acute care setting. https://www.rcp.ac.uk/improving-care/resources/acute-care-resource-end-of-life-care-in-the-acute-care-setting/

This resource offers guidance on recognizing when patients are approaching the end of life and provides strategies for delivering appropriate care in acute settings.

American Association of Colleges of Nursing. (2021). *End-of-Life Nursing Education Consortium (ELNEC).*

The ELNEC project is a national education initiative whose mission is to improve palliative care within the United States and internationally. This site, through the American Association of Colleges of Nursing, provides training and educational materials for those wishing to become more informed on end-of-life and palliative care topics.

Hospice Foundation of America. (2020). *Starting the Conversation.*

This website provides tools for patients, providers, and loved ones to start the conversation surrounding end-of-life preferences.

National Coalition for Hospice and Palliative Care. (2018). *Clinical Practice Guidelines for Quality Palliative Care, 4th Edition.*

These guidelines aim to improve access to quality palliative care for patients with serious illness, regardless of setting, diagnosis, prognosis, or age. It includes a free downloadable version of the 2018 national guidelines produced by the coalition.

National Comprehensive Cancer Network (NCCN). (2016). *NCCN Clinical Practice Guidelines in Oncology. Adult Cancer Pain [v.2.2016].*

This network requires registration. For its registered users, it contains numerous cancer treatment guidelines, educational events, and patient resources.

Perioperative Care

Sieber, F., McIsaac, D. I., Deiner, S., Azefor, T., Berger, M., Hughes, C., Leung, J. M., Maldon, J., McSwain, J. R., Neuman, M. D., Russell, M. M., Tang, V., Whitlock, E., Whittington, R., Marbella, A. M., Agarkar, M., Ramirez, S., Dyer, A., Blanck, J. F., Uhl, S., Grant, M. D., Domino, K. B. (2025). 2025 American Society of Anesthesiologists Practice Advisory for Perioperative Care of Older Adults Scheduled for Inpatient Surgery. *Anesthesiology, 142*(1), 22–51. https://doi.org/10.1097/ALN.0000000000005172

The 2025 ASA Practice Advisory emphasizes a holistic approach to perioperative care for older adults, integrating comprehensive assessments, individualized anesthetic planning, and careful medication management to mitigate risks and improve outcomes. These recommendations aim to enhance the quality of care and reduce complications in this vulnerable patient population.

Thillainadesan, J., Hilmer, S. N., Fleury, A. M., & Naganathan, V. (2022). New horizons in the perioperative care of older adults. *Age and ageing, 51*(2), afab245. https://doi.org/10.1093/ageing/afab245

This article explains how older adults undergoing surgery face elevated risks due to frailty and age-related changes, and while comprehensive geriatric assessment (CGA) has proven effective in improving perioperative outcomes, especially beyond orthopaedic surgery, further efforts are needed to close the implementation gap, assess cost-effectiveness, and integrate patient-reported outcomes into routine care.

Web Links

American College of Surgeons. (2024, July 17). ACS releases checklist to help older adults prepare for surgery. https://www.facs.org/media-center/press-releases/2024/acs-releases-checklist-to-help-older-adults-prepare-for-surgery/

American College of Surgeons (ACS). (n.d.). *Optimal Preoperative Assessment of the Geriatric Surgical Patient: Best Practice Guidelines.* National Surgical Quality Improvement Program (NSQIP) & the American Geriatrics Society (AGS).

Recognizing the unique needs of the aging surgical popu lace, the ACS NSQIP and the AGS partnered to construct best practice guidelines focused on perioperative care of the older surgical patient. These guidelines summarize evidence-based recommendations for improving preoperative assessment because this is essential in providing quality care to these patients.

American Geriatrics Society (AGS). (2014). *American Geriatrics Society Clinical Practice Guideline for Postoperative Delirium in Older Adults.*

The AGS provides these free guidelines for providers to aid in the reduction in postoperative delirium in older adults.

Polypharmacy

Cojuc-Konigsberg, G., & Schoo, C. (2022). Inappropriate medication in the geriatric population. StatPearls [Internet]. https://www.ncbi.nlm.nih.gov/books/NBK585118/

This article provides information about polypharmacy and ways to identify inappropriate medications.

Mehta, R. S., Kochar, B. D., Kennelty, K., Ernst, M. E., & Chan, A. T. (2021). Emerging approaches to polypharmacy among older adults. *Nature aging*, *1*(4), 347-356. https://doi.org/10.1038/s43587-021-00045-3

Polypharmacy in older adults is a complex and pressing issue linked to multiple geriatric syndromes, and while deprescribing strategies show promise, future research must adopt a standardized definition and leverage advanced technologies like multiomics to enhance risk stratification and personalized care.

Baruth, J. M., Gentry, M. T., Rummans, T. A., Miller, D. M., & Burton, M. C. (2020). Polypharmacy in older adults: The role of the multidisciplinary team. *Hospital Practice*, *48*(sup1), 56-62. https://doi.org/10.1080/21548331.2019.1706995

As older adults increasingly require inpatient care, this review outlines the risks of polypharmacy and inappropriate medications—particularly anticholinergics, sedative hypnotics, and antipsychotics—and highlights evidence-based strategies such as drug regimen reviews, pharmacistled interventions, and digital tools to improve medication safety and clinical outcomes.

Web Links

The American Geriatrics Society (2023). Updated AGS Beers criteria for potentially inappropriate medication use in older adults.

This clinical tool identifies potentially inappropriate medications for older adults.

MedStopper is a tool to help clinicians determine what medications to taper, stop, and determine level of priority for deprescribing. Suggestions for how to taper the medication and side effects are also provided.

Aging Brain Program of the Indiana University Center for Aging Research. (2012). Anticholinergic Cognitive Burden Scale [Brochure].

This brochure identifies anticholinergic medications and rates the level of associated cognitive burden.

The US Deprescribing Research Network. (2024). Resources for Clinicians.

This resource provides information on polypharmacy, guidelines and algorithms for deprescribing, and the STOPP/START Criteria.

This resource provides information for the public (help the public learn how to discuss their medications), healthcare providers (algorithms and deprescribing guidelines) and researchers to help develop new guidelines and examine uptake and effect on health outcomes. https://deprescribing.org/

Pressure Injury and Ulcer

Munoz, N., Posthauer, M. E., Cereda, E., Schols, J. M., & Haesler, E. (2020). The role of nutrition for pressure injury prevention and healing: the 2019 international clinical practice guideline recommendations. *Advances in skin & wound care*, *33*(3), 123-136. DOI:10.1097/01.ASW.0000653144.90739ad

The 2019 international guideline on pressure injury prevention and treatment emphasizes early nutritional screening, adequate energy and protein intake, use of oral nutritional supplements, and regular monitoring as essential components of effective pressure injury management in older adults.

Hajhosseini, B., Longaker, M. T., & Gurtner, G. C. (2020). Pressure injury. *Annals of surgery*, *271*(4), 671-679. DOI: 10.1097/SLA.0000000000003567

Despite increasing healthcare costs and prevalence, pressure injuries remain a major clinical challenge due to an aging population, limited understanding of their biology, and weak research progress, prompting this review to explore their pathophysiology, clinical types, and evidence-based strategies for prevention and management.

Alam, W., Hasson, J., & Reed, M. (2021). Clinical approach to chronic wound management in older adults. *Journal of the American Geriatrics Society*, *69*(8), 2327-2334. https://doi.org/10.1111/jgs.17177

Chronic wounds in older adults—primarily pressure and vascular ulcers—are common, multifactorial, and best managed through early diagnosis, the TIME framework, nutritional support, and disease-specific therapies, with palliative care considered when appropriate.

Chung, M.-L., Widdel, M., Kirchhoff, J., Sellin, J., Jelali, M., Geiser, F., Mücke, M., & Conrad, R. (2022). Risk Factors for Pressure Injuries in Adult Patients: A Narrative Synthesis. *International Journal of Environmental Research and Public Health*, *19*(2), 761. https://doi.org/10.3390/ijerph19020761

This narrative synthesis of 67 studies involving over 679,000 patients identifies key risk factors for pressure injury development—including non-blanchable erythema, low BMI, older age, anemia, diabetes, and ICU stay—emphasizing the importance of healthcare professionals' awareness and communication to enhance prevention and treatment strategies.

Web Links

National Pressure Injury Prevention Advisory Panel (NPIAP). (2021). *NPIAP Resources: Free Resources.*

The NPIAP is dedicated to improving patient outcomes in pressure injury prevention and treatment through public policy, education, and research. It also serves as a resource for healthcare professionals, government, the public, and healthcare agencies.

Wound Care Education Institute. (2021). *Wound Central.*

The website has a plethora of web links to free resources for many different types of ulcers.

Pulmonary

Advance/End-Stage Chronic Obstructive Pulmonary Disease (COPD)

Murray, M. A., Mulryan, K., Ní Chléirigh, M., Redmond, K. C., & Kelly, E. (2023). Caring for patients with advanced COPD: Beyond the inhalers… *Breathe (Sheffield, England)*, *19*(1), 220229. https://doi.org/10.1183/20734735.0229-2022

The article explores a comprehensive approach to managing advanced COPD beyond inhalers, emphasizing non-pharmacological interventions such as oxygen therapy, noninvasive ventilation, pulmonary rehabilitation, and lung volume reduction procedures.

Martinez, F.J., Mannino, D., Leidy, N.K., Malley, K.G., Bacci, E.D., Barr, R.G., … Yawn, B.P. (2017). A new approach for identifying patients with undiagnosed chronic obstructive pulmonary disease. *American Journal of Respiratory and Critical Care Medicine, 195*(6), 748-756. https://doi.org/10.1164/ rccm.201603-0622OC

This article describes a tool for identifying undiagnosed COPD requiring treatment. The CAPTURE tool with peak ex- piratory flow can identify patients with COPD needing therapy initiation. CAPTURE: Chronic obstructive pulmonary disease Assessment in Primary care To identify Undiagnosed Respiratory disease and Exacerbation risk; COPD: chronic obstructive pulmonary disease.

Bertini, P., Guarracino, F., Falcone, M. Nardelli, P., Landoni, G., Nocci, M., & Paternoster, G. (2022). ECMO in COVID-19 Patients: A Systematic Review and Meta-analysis. *Journal of Cardiothoracic and Vascular Anesthesia, 36*(8), 2700-2706. https://doi.org/10.1053/j.jvca.2021.11.006

This document provides clinical recommendations for the use of ECMO in COVID-19 patients.

Rabah, H. and Rabah, A. (2022). Extracorporeal membrane oxygenation (ECMO): What we need to know. *Cureus 14* (7): e26735. DOI10.7759/cureus.26735. https://assets.cureus.com/uploads/review_article/pdf/104185/20220810-9137-1ycjo95.pdf

This document describes the technical aspects, indications, contraindications, complications, and management of ECMO.

Web Links

Antibiotic Antibiogram

This interactive website provides information on antibiotics and the organisms they impact.

Centers for Disease Control and Prevention (CDC). (2020).
About COPD.

This website from the CDC provides an overview of symptoms, diagnosis, and treatment for COPD.

American Lung Association. (2021). *Treating COPD.*

This website provides guidance from the American Lung Association on treating COPD.

The Medical Company. (2020). *Pulmonary Function Tests.*

This website describes how a pulmonary function test aids in the diagnosis and treatment of COPD.

Global Initiative for Chronic Obstructive Lung Disease (GOLD). (2018). *COPD Standard.*

This website highlights guidelines, provides reports, and pocket guides for the management of COPD.

GlaxoSmithKline Services Unlimited. (2018). *The COPD Assessment Test*.

Understanding COPD is essential for healthcare providers. This website provides an assessment to determine areas that need strengthening.

BODE Index for COPD - Estimate prognosis for COPD https://reference.medscape.com/calculator/29/bode-index-for-copd

Acute Respiratory Distress Syndrome (ARDS)

Banavasi, H., Nguyen, P., Heba, O., & Ayman, S.O. (2021). Management of ARDS - What works and what does not. *The American Journal of the Medical Sciences, 362*(1). https://doi.org/10.1016/j.amjms.2020.12.019

This article reviews different treatments for ARDS, including the use of mechanical ventilation and modes of ventilation. It further examines pharmacologic and non-pharmacologic modalities for treatment, including neuromuscular blockades and corticosteroids. prone positioning, ECMO, and fluid restrictions.

Tasaka, S., Ohshimo, S., Takeuchi, M., Yasuda, H., Ichikado, K., Egi, M., Hashimoto, S., Shime, N., Saito, O., Matsumoto, S., Nango, E., Okada, Y., Hayashi, K., Sakuaya, M., Nakajima, M., Okamori, S., Miura, S., Fukuda, T., & …The Japanese Society of Respiratory Care Medicine. (2022). ARDS clinical practice guideline 2021. *Journal of Intensive Care, 10*(32), 1-52. https://doi.org/10.1186/s40560-022-00615-6

This document provides clinical practice guidelines compiled by the Japanese Respiratory Society and is an international standard by the GRADE system. Each guideline is given a GRADE recommendation based on research. This is a good tool for guidance on the effectiveness and recommendation for practice.

Rezaogli, E., McNicholas, B.A., Madotto, F., Pham, T., Bellani, G., & Laffey, J.G. (2022). Presence of comorbidities alters management and worsens outcome of patients with acute respiratory distress syndrome: Insights from the lung safe study. *Annals of Intensive Care, 12*(1). https://doi.org/10.1186/s13613-022-01015-7

This document explores how the presence of specific comorbidities impact the management of ARDS.

Sepsis

Ackerman, M. H., Ahrens, T., Kelly, J., & Pontillo, A. (2021). Sepsis. *Critical Care Nursing Clinics, 33*(4), 407-418. https://www.ccnursing.theclinics.com/article/S0899-5885(21)00052-6/fulltext

This article discusses the historical understanding of sepsis, highlighting the evolution of definitions, treatment bundles, and the complex pathogenesis of sepsis.

Gauer, R., Forbes, D., & Boyer, N. (2020). Sepsis: diagnosis and management. *American family physician, 101*(7), 409-418. https://www.aafp.org/pubs/afp/issues/2020/0401/p409.html

This article discusses the 2016 guidelines regarding sepsis as life-threatening organ dysfunction from a dysregulated host response to infection, emphasizing early diagnosis with tools like the Sequential Organ Failure Assessment and prioritizing fluid resuscitation and antimicrobial therapy within the first hour, while future research aims to improve long-term outcomes.

Vincent, J. L. (2022). Current sepsis therapeutics. *EBioMedicine,* 86. https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964(22)00500-X/fulltext

This article discusses the sepsis management by controlling the infection with antibiotics and possibly surgery, stabilizing haemodynamics with fluids and vasopressors like noradrenaline, and modulating the host response with agents like glucocorticoids and vasopressin, while moving towards personalized treatment approaches.

Evans, L., Rhodes, A., Alhazzani, W., Antonelli, M., Coopersmith, C. M., French, C., Machado, F. R., Mcintyre, L., Ostermann, M., Prescott, H. C., Schorr, C., Simpson, S., Wiersinga, W. J., Alshamsi, F., Angus, D. C., Arabi, Y., Azevedo, L., Beale, R., Beilman, G., Belley-Cote, E., … Levy, M. (2021). Surviving Sepsis Campaign: International

Guidelines for Management of Sepsis and Septic Shock 2021. *Critical care medicine, 49*(11), e1063–e1143. https://doi.org/10.1097/CCM.0000000000005337

This consensus guideline discusses the updated recommendations for the management of sepsis and septic shock, including antimicrobial therapy, fluid resuscitation, and MAP targets.

Chaudhuri, D., Nei, A. M., Rochwerg, B., Balk, R. A., Asehnoune, K., Cadena, R., Carcillo, J. A., Correa, R., Drover, K., Esper, A. M., Gershengorn, H. B., Hammond, N. E., Jayaprakash, N., Menon, K., Nazer, L., Pitre, T., Qasim, Z. A., Russell, J. A., Santos, A. P., Sarwal, A., … Pastores, S. M. (2024). 2024 Focused Update: Guidelines on Use of Corticosteroids in Sepsis, Acute Respiratory Distress Syndrome, and Community-Acquired Pneumonia. *Critical care medicine, 52*(5), e219–e233. https://doi.org/10.1097/CCM.0000000000006172

These consensus guidelines provide recommendations on the use of corticosteroids in critically ill patients with ARDS, CAP, and septic shock.

Web Links

Sepsis Alliance. (2021). *What is Sepsis?*

Sepsis can lead to tissue damage, organ failure, and death. This website provides information and resources for medical professionals, families, and patients.

Urosepsis

Wu, Y., Wang G., Huang Z., et al. (2023). Diagnostic and therapeutic value of biomarkers in urosepsis. *Therapeutic Advances in Urology.* doi:10.1177/17562872231151852

This article discusses urosepsis, its rising incidence due to increased urinary tract surgeries, and the importance of early diagnosis and treatment using various biomarkers to reduce mortality.

Walker, M. M., Roberts, J. A., Rogers, B. A., Harris, P. N. A., & Sime, F. B. (2022). Current and Emerging Treatment Options for Multidrug Resistant Escherichia coli Urosepsis: A Review. *Antibiotics, 11*(12), 1821. https://doi.org/10.3390/antibiotics11121821

This article reviews the development of multidrug resistance (MDR) in uropathogenic Escherichia coli (UPEC) and explores current and emerging treatment strategies, highlighting the challenges posed by carbapenem-resistant strains and the need for ongoing research to find effective therapies.

Sleep

Green, M. E., Bernet, V., & Cheung, J. (2021). Thyroid Dysfunction and Sleep Disorders. *Frontiers in endocrinology*, *12*, 725829. https://doi.org/10.3389/fendo.2021.725829

This article describes the association of thyroid disorders and sleep.

Shamim-Uzzaman, Q. A., Bae, C. J., Ehsan, Z., Setty, A. R., Devine, M., Dhankikar, S., Donskoy, I., Fields, B., Hearn, H., Hwang, D., Jain, V., Kelley, D., Kirsch, D. B., Martin, W., Troester, M., Trotti, L. M., Won, C. H., & Epstein, L. J. (2021). The use of telemedicine for the diagnosis and treatment of sleep disorders: An American Academy of Sleep Medicine update. *Journal of clinical sleep medicine : JCSM: Official publication of the American Academy of Sleep Medicine*, *17*(5), 1103–1107. https://doi.org/10.5664/jcsm.9194

This study highlights the use of telemedicine for diagnosing sleep disorders.

Suzuki, K., Miyamoto, M., & Hirata, K. (2017). Sleep disorders in the elderly: Diagnosis and management. *Journal of General and Family Medicine, 18*(2), 61-71. https://doi.org/10.1002/ jgf2.27

The authors address multiple etiologies that contribute to insomnia in the elderly. Attention is also directed to the proper diagnosis and management of these common disorders.

Stroke

Herpich, F., & Rincon, F. (2020). Management of acute Ischemic stroke. *Critical care medicine*, *48*(11), 1654-1663. https://journals.lww.com/ccmjournal/fulltext/2020/11000/management_of_acute_ischemic_stroke.13.aspx

This abstract reviews advancements in acute ischemic stroke management, highlighting the importance of early recognition and revascularization in reducing mortality and morbidity, while noting that stroke remains a significant global health issue requiring a multidisciplinary approach.

Greenberg, S. M., Ziai, W. C., Cordonnier, C., Dowlatshahi, D., Francis, B., Goldstein, J. N., ... & American Heart Association/American Stroke Association. (2022). 2022 guideline for the management of patients with spontaneous intracerebral hemorrhage: a guideline from the American Heart Association/American Stroke Association. *Stroke*, *53*(7), e282-e361. https://doi.org/10.1161/STR.0000000000000407

The guideline provides current, comprehensive, and evidence-based recommendations for the diagnosis and treatment of spontaneous intracerebral hemorrhage.

Web Links

Cleveland Clinic. (2020). *Mechanical Thrombectomy*.

This short video provides basic information about mechanical thrombectomy for a treatment of acute ischemic stroke caused by a large vessel occlusion.

Genentech. (2021). *Activase® Alteplace. A recombinant tissue plasminogen activator.*

The website provides detailed clinical information about IV Activase (Alteplace or tPA) for acute ischemic stroke.

MDCalc. (2021). Modified Rankin Scale for Neurologic Disability - MDCalc

The scale measures the degree of disability or dependence in the daily activities of people who have suffered from a stroke or other causes of neurological disabilities. It is important to determine and clarify the score of the pre-stroke (or neurological event) as the patient may or may not qualify for stroke treatments, such as IV tPA and mechanical thrombectomy in hyperacute phase.

Trauma

Falls/Hip Fractures

Ganz, D. A., & Latham, N. K. (2020). Prevention of falls in community-dwelling older adults. *New England Journal of Medicine, 382*(8), 734-743. https://www.nejm.org/doi/full/10.1056/NEJMcp1903252

This article discusses when thinking about how to prevent falls in community-dwelling older adults, it's crucial to assess and manage risk factors, encourage balance and strength training exercises, and treat osteoporosis to reduce fall-related injuries.

Griffiths, R., Babu, S., Dixon, P., Freeman, N., Hurford, D., Kelleher, E., … White, S. (2021). Guideline for the manage- ment of hip fractures 2020: Guideline by the Association of Anaesthetists. *Anaesthesia*, *76*(2), 225-237. https://doi.org/ 10.1111/anae.15291

The Association of Anaesthetists convened an interprofessional panel to update the guidelines for the perioperative management of hip fractures.

Guay, J., & Kopp, S. (2020). Peripheral nerve blocks for hip fractures in adults. Cochrane Database of Systematic Reviews, (11). https://doi.org/10.1002/14651858.CD001159.pub3

This article discusses how peripheral nerve blocks (PNBs) for adults with hip fractures can significantly reduce pain shortly after administration, lower the risk of acute confusional states and chest infections, and likely speed up mobilization, though their effects on mortality and myocardial infarction remain uncertain due to limited data.

Web Links

Agency for Healthcare Research and Quality. (Last Reviewed 2024). *Preventing Falls in Hospitals.*

This toolkit focuses on overcoming the challenges associated with developing, implementing, and sustaining a fall prevention program.

American College of Sports Medicine. (2020). *Exercise is Medicine®: A Global Health Initiative.*

This website provides resources for healthcare professionals to promote physical activity among older adults.

Centers for Disease Control and Prevention. (2020). *Preventing Falls: A Guide to Implementing Effective Community-Based Fall Prevention Programs.*

This website provides resources to organizations to implement evidence-based fall prevention programs.

Centers for Disease Control and Prevention. (2020). *STEADI: Older Adult Fall Prevention.*

The CDC developed a resource guide for healthcare providers known as STEADI (Stopping Elderly Accidents, Deaths, and Injuries) to reduce accidents, deaths, and injuries in older adults

National Council on Aging. (2020). *Falls Prevention for Older Adults.*

Falls are the leading cause of injuries, both fatal and nonfatal, for older adults. This website provides lifestyle adjustments, programs, and community partnerships available to reduce the number of falls among this high-risk population. This website also includes evidence-based fall prevention programs.

National Institute on Aging. (Last reviewed 2022). *Prevent Falls and Fractures.*

This website reviews the causes and risk factors for falls as well as steps to prevent falls.

American College of Surgeons. (2025). *Trauma Quality*

The ACS TQP Best Practices Guidelines provide evidence-based and expert consensus recommendations to help trauma care providers manage specific patient populations or injury types effectively.

Head Injuries

Wang, F., Wang, Z., Hu, L., Xu, H., Yu, C., & Li, F. (2021). Evaluation of head injury criteria for injury prediction effectiveness: computational reconstruction of real-world vulnerable road user impact accidents. *Frontiers in bioengineering and biotechnology, 9*, 677982. https://www.frontiersin.org/journals/bioengineering-and-biotechnology/articles/10.3389/fbioe.2021.677982/full

This study found that among older adults who experienced ground-level falls, head injuries were more likely in males and in specific environmental contexts (e.g., outdoor areas, concrete or sloped floors), while severe head injuries were associated with male sex, age over 70, indoor falls, and environmental hazards like floor obstacles.

Grewal, K., Atzema, C. L., Austin, P. C., de Wit, K., Sharma, S., Mittmann, N., ... & McLeod, S. L. (2021). Intracranial hemorrhage after head injury among older patients on anticoagulation seen in the emergency department: A population-based cohort study. *CMAJ, 193*(40), E1561-E1567. https://www.cmaj.ca/content/193/40/E1561.full

This study found that older adults on warfarin had a significantly higher risk of intracranial hemorrhage (ICH) after head injury compared to those on direct oral anticoagulants (DOACs) or no anticoagulation, while DOACs did not increase ICH risk relative to no anticoagulants, and 30-day mortality and neurosurgical intervention rates were similar across groups with ICH.

Spinal Injuries

Patek, M., & Stewart, M. (2023). Spinal cord injury. *Anaesthesia & Intensive Care Medicine, 24*(7), 406-411. https://doi.org/10.1016/j.mpaic.2023.04.006

In the UK, with an annual incidence of 19 new spinal cord injury (SCI) cases per million and around 50,000 people living with SCI, trauma—mainly from falls and road accidents—is the leading cause, and anaesthetists must be prepared to manage the complex acute and chronic challenges these patients present, especially as more undergo routine surgeries.

Aguirre, M. F. I., Tsirikos, A. I., & Clarke, A. (2020). Spinal injuries in the elderly population. Orthopaedics and Trauma, 34(5), 272-277. https://doi.org/10.1016/j.mporth.2020.06.004

As the elderly population grows, spinal trauma from low-impact injuries is becoming more common due to age-related physiological changes and comorbidities, necessitating individualized treatment strategies that often favor conservative management, while emphasizing the importance of injury prevention in this vulnerable group.

Rupp, R., Biering-Sørensen, F., Burns, S. P., Graves, D. E., Guest, J., Jones, L., ... & Kirshblum, S. (2021). International standards for neurological classification of spinal cord injury: Revised 2019. *Topics in spinal cord injury rehabilitation, 27*(2), 1. https://doi.org/10.46292/sci2702-1

The eighth edition of the International Standards for Neurological Classification of Spinal Cord Injury (ISNCSCI) introduces significant updates to the examination and classification process, including the ASIA Impairment Scale, based on global clinical feedback, new evidence, and structured training input, with further details to be published separately.

Web Links

MDCalc. Thoracolumbar Injury Classification and Severity Scale (TLICS).

This website offers support with classification and severity of thoracolumbar injuries.