Practical Assessment and Management of Vulnerabilities in Older Patients Receiving Systemic Cancer Therapy: ASCO Guideline Questions and Answers

Grant R. Williams, MD, MSPH[1]; Judith O. Hopkins, MD[2]; Heidi D. Klepin, MD, MS[3]; Lisa M. Lowenstein, PhD[4]; Amy Mackenzie, MD, FACP[5]; Supriya G. Mohile, MD[6]; Mark R. Somerfield, PhD[7]; and William Dale, MD, PhD[8]

DOI https://doi.org/10.1200/OP.23.00263

Accepted May 15, 2023
Published July 17, 2023

JCO Oncol Pract 00:1-6

View Online Article

In 2023, ASCO updated its guideline on assessment and management of vulnerabilities in older patients undergoing chemotherapy. The update revisited recommendations from the previous guideline (2018),[1] in light of significant advances in the field since then and introduced an innovative geriatric assessment (GA) tool. The Practical Geriatric Assessment (PGA) was developed to address common barriers to routine implementation of GA in everyday practice.[2-4] This companion Questions and Answers article addresses some concerns that clinicians experience as they implement the updated recommendations.

QUESTION 1: WHAT ARE THE CHANGES TO THE UPDATED GA GUIDELINE?

The updated ASCO guideline on practical assessment and management of vulnerabilities in older patients incorporates practice changing publications and revises previous recommendations on the basis of these publications. The updated guideline recommends that GA can be used to identify aging-associated vulnerabilities or impairments that are not routinely captured in oncology assessments for all patients older than 65 years with cancer. Further recommendations include (1) all patients with cancer age 65 years and older with GA-identified impairments (such as physical limitations or cognitive impairment) should have GA-guided management included in their care plan and (2) a GA should include high priority aging-related domains known to be associated with important outcomes including measurement of physical and cognitive function, emotional health, comorbidities, polypharmacy, nutrition, and social support. The updated guideline addresses recent data demonstrating low uptake of guideline-recommended GA and the reasons behind it, including perceived time barriers and uncertainty about next steps.[2-4] It proposes a PGA designed to overcome these implementation barriers. Figure 1 presents the summary of the updated guideline recommendations addressed in this article; the complete recommendations appear in the full guideline update (cite new GA guideline).[5]

QUESTION 2: HOW WILL PERFORMING A GA BENEFIT A PRACTICING COMMUNITY ONCOLOGIST, AND MY OLDER PATIENTS?

GA is a systematic and validated approach for identifying strengths and treating vulnerabilities of older adults with cancer. GA results can inform treatment decision making and guide interventions to mitigate vulnerabilities. Performing a GA to guide management improves communication, decreases severe treatment-related toxicities, lowers hospitalization risks, increases advanced directive completion, and improves patient/caregiver satisfaction.[6-10]

Consider a 72-year-old patient with recently diagnosed metastatic colorectal cancer found to have a history of falls, significant weight loss, diabetes, and requires assistance with taking daily medications (an instrumental activity of daily living impairment) on pretreatment GA evaluation. On the basis of this information and the Cancer and Aging Research Group toxicity calculator,[11,12] the patient has a high risk of severe (grade 3+) chemotherapy toxicities with multiagent chemotherapy and is likely to benefit from targeted interventions for the identified impairments. After discussing these results with the patient and their caregiver(s), the oncology clinician decides to start initial treatment with capecitabine monotherapy with bevacizumab (ie, a deintensified treatment approach) and refers the patient for physical

Recommendation	Type	Evidence Quality	Strength
1.1. All patients with cancer age 65 years and older with geriatric assessment (GA)-identified impairments should have GA-guided management included in their care plan. GA-guided management includes using GA results to inform cancer treatment decision making as well as addressing impairments through appropriate interventions, counseling, and/or referrals.	EB	H	S
2.1. A geriatric assessment should include high priority aging-related domains known to be associated with outcomes in older patients with cancer to include measurement of physical and cognitive function, emotional health, comorbid conditions, polypharmacy, nutrition, and social support.	EB	H	S
2.2. The Panel recommends the Practical Geriatric Assessment (PGA) as one option for this purpose. See the PGA tool.	IC	M	W

FIG 1. Updated recommendations from the 2023 practical assessment and management of vulnerabilities in older patients receiving systemic cancer therapy ASCO guideline. EB, evidence based; GA, geriatric assessment; I, intermediate; IC, informal consensus; M, moderate; S, strong; W, weak.

therapy, occupational therapy, and nutritionist. The patient and caregiver are provided written instructions for assistance with medication management.

QUESTION 3: HOW LONG DOES A GA TAKE TO PERFORM AND HOW CAN I INTEGRATE THIS INTO MY PRACTICE?

Many versions of the GA exist, and the time required to complete them varies. Early GA versions relied heavily on proctored assessments and objective measurement which could take anywhere from 30 to 60 minutes or more to complete. This is not feasible in a busy oncology practice. Recently developed GA tools have emphasized patient-reported outcome measures as part of the assessment. These patient-reported measures allow older patients to directly report their health status and minimize the required staff time to administer assessments. These predominantly patient-reported tools, including the PGA, can take between 10 and 25 minutes[13–15] and can be completed by the patient/caregiver before the visit or in the waiting area at the office. This also significantly decreases the burden on practice staff while still gathering crucial data about older patients that is immediately available for their provider to incorporate into the visit.[15] GAs can be performed using either a paper/pencil method or electronic administration, depending on available resources and infrastructure. Incorporating GA surveys into the electronic medical record with use of the patient portal has been an effective strategy for implementation. In addition, even briefer screening instruments, such as geriatric 8 (G8) or Vulnerable Elders Survey-13 (VES-13), can aid in identifying which older patients may benefit most from performing the full GA.[16,17] This approach works best when there is a heterogeneous population of patients with a wide range of vulnerabilities. In this case, patients can be prescreened before a visit with a tool such as the G8 (eight questions covering domains including nutrition, mobility, psychosocial health, and polypharmacy), thereby identifying patients who could benefit from more intensive assessment. Otherwise, using a tool such as the PGA for all patients is the most appropriate approach.[18]

QUESTION 4: HOW SHOULD I USE THE GA RESULTS TO GUIDE MANAGEMENT OF OLDER ADULTS WITH CANCER?

Once the GA is completed, the results can be used to identify individual domain impairments, calculate a summary score of overall frailty,[19–21] and calculate the risk of severe chemotherapy toxicities (see ASCO videos). For treatment decision making, it can be very helpful to integrate the risk of adverse outcomes and/or severe chemotherapy toxicities on the basis of the GA results to inform a conversation about the risks/benefits of cancer treatments for individual patients. Older patients identified as high risk for adverse outcomes such as chemotherapy toxicities or hospitalizations may benefit from more frequent toxicity checks and/or reduced intensity treatment in the noncurative treatment setting (ie, 20% dose reduction or single agent rather than a doublet therapy). In addition, the identified domain impairments can guide targeted interventions. For example, an older patient with limitations in activities of daily living (ADL) or instrumental ADLs would likely benefit from a referral to physical therapy and/or occupational therapy. Similarly, patients identified as at risk for malnutrition may benefit from seeing a dietician. See Table 1 for a full summary of recommended actions for identified GA impairments. Of note, even if the GA results indicate an older person is at high-risk for treatment side effects, this does not mean they cannot receive systemic cancer treatment. This risk information should be discussed with the patient, family or care partners, and the full care team. The ultimate decision

TABLE 1. PGA Scoring and Recommendations

Domain	Measure	Items	Definition of Impairments	Recommendation if Patient Meets Threshold for Impairment
Physical function/ performance	Falls	Single item of falls in past 6 months	≥1 falls[13,22]	*(For falls specifically)—check orthostatic blood pressure and adjust blood pressure medications if blood pressure is low or low normal. Offer falls prevention handout* *Weigh risks and benefits of cancer treatment options, incorporating information about physical performance* *Consider physical therapy (outpatient or home-based depending on eligibility for home care): request gait/assistive device evaluation, lower extremity strength, and balance training* *Consider occupational therapy (if eligible for home care, referral for home safety evaluation): request evaluation and treatment*
	Physical function	Walking one block and climbing one flight of stairs	Any limitation (a little or lot)[13]	
	4-meter gait speed	Time in seconds	Time ≥4 s (or gait speed ≤1.0 m/s[23,24])	
Functional status	OARS IADL	6 IADL items (walking, transportation, meals, housework, medicines, money)	Any IADL items with some help or unable[13,25,26]	*Consider the following potential cancer treatment modifications, particularly in the noncurative treatment setting: (1) consider single agent rather than doublet therapy; (2) modify dosage (eg, 20% dose reduction with escalation as tolerated); (3) modify treatment schedule if appropriate* *Consider more frequent toxicity checks (weekly or every other week)* *Consider physical therapy (outpatient or home-based depending on eligibility for home care): request gait/assistive device evaluation, strength, and balance training* *Consider occupational therapy (outpatient or home-based depending on eligibility for home care): request evaluation and treatment for functional impairment*
	OARS activities of daily living (IADL)	3 ADL items (in/out of bed, dressing, bath/shower)	Any ADL items with some help or unable	
Nutrition/weight loss	Single item from the G8 and MNA	Weight loss during the past 3 months? 0 = weight loss >3 kg (6.6 lbs) 1 = does not know 2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs) 3 = no weight loss (range 0-3)	Score of 0[27,28]	*Discuss concerns related to nutrition and how potential treatment may impact nutrition* *Consider recommendations and/or handouts for nutritional supplements, liberalize calorie-restricted diets; small frequent meals, and/or high protein/ high calorie snacks* *Consider referral to (1) nutritionist/dietician: (2) dentist if poor dentition or denture issues: (3) speech therapy if difficulty with swallowing; (4) meals-on-wheels* *Use caution with highly emetogenic regimens and use aggressive antiemetic therapy* *Refer to physical therapy/occupational therapy for functional impairments affecting food intake* *Consider medications for loss of appetite*
Social support	MOS social support, 8-item	Instrumental items 1-4 Emotional items 5-8	Any instrumental item with none, a little, or some of the time[29,30] Any emotional item with none, a little, or some of the time[29,30]	*Discuss adequacy and availability of social support at home* *Discuss who the patient can contact in case of an emergency* *Confirm documented health care proxy is in the medical record* *Consider referral or information on (1) social worker (2) visiting nurse service or home health aide (if meets criteria)* *Order on-person lifeline emergency service*
Psychological	PROMIS anxiety, 4-item	Summed 4-20 raw score	Raw score: ≥11[31,32]	*Discuss history of mood issues and treatment history* *Consider referral to (1) psycho-oncology (social work, clinical psychology) for counseling; (2) psychiatry if severe symptoms or if already on medications which are inadequate, (3) spiritual counseling or Chaplaincy services, (4) palliative care if other physical and/or cancer symptoms present* *Consider initiating pharmacologic therapy if appropriate in conjunction with PCP* *Provide linkage to community resources (such as support groups and local/ national buddy or volunteer programs)* *Assess suicide risk and/or elder abuse if appropriate*
	GDS 5	Sum of 1 point for no answer to item 1 and 1 point for yes answers to items 2-5 (range, 0-5)	Score: ≥2[33,34]	

(continued on following page)

TABLE 1. PGA Scoring and Recommendations (continued)

Domain	Measure	Items	Definition of Impairments	Recommendation if Patient Meets Threshold for Impairment
Comorbidity	OARS comorbidity	No/yes summed (0-13) Interference for each	≥3 conditions[35,36] Or any condition with a great deal of interference Specific for any history of diabetes, heart disease, or liver/kidney disease	*Initiate direct communication (written, electronic, or phone) with patient's PCP about the plan for the patient's cancer* *Discuss how comorbidities affect risks and benefits of treatments choices* *Modify dosage or schedule if there is concern about treatment tolerability or if there is a concern about worsening of comorbidities* *If history of diabetes (of any level)—avoid neurotoxic agents if another option is equivalent* *If history of heart disease (of any level)—consider minimizing volume of agents and/or administer at slower infusion rate* *If history of chronic liver or kidney disease (of any level)—adjust medication dose as appropriate to avoid accumulation*
	Hearing	Single item	Fair/poor/deaf	*Ensure wearing hearing aids if indicated and consider hearing specialist referral* *Pocket talker available for office visits*
	Vision	Single item	Fair/poor/blind	*Ensure wearing glasses if indicated* *Test for glaucoma (esp with steroid use)* *Consider vision specialist referral*
Cognitive function	Mini-cog	1 point for each word recall 2 points for clock draw if normal, 0 if abnormal Total of 5 points (range, 0-5)	Score: 0-2 high likelihood of cognitive impairment[37,38]	*Provide explicit and written instruction for appointments, medications, and treatments* *Elicit input from trusted confidant or caregiver about patient's cognition* *Assess decision-making capacity and elicit health care proxy information and input if the patient lacks decision-making capacity* *Consider referral to cognitive specialist (eg, neurologist or geriatrician)* *Consider occupational therapy referral for cognitive rehabilitation* *If dementia is suspected, consider neuropsychological testing*
Geriatric assessment screening tool[a]	G-8	8 items (food intake, weight loss, mobility, neuropsychological problem, body mass index, prescription drug, self-perception of health, and age)	Score: 0-14 recommend completing a full GA evaluation[39,40]	*Administer the full PGA and implement the recommendations noted above on the basis of the patient-reported results*
Risk of chemotherapy toxicity[b]	CARG toxicity tool	11 items (sociodemographics, tumor/treatment variables, laboratory test results [hemoglobin, creatinine clearance], and GA variables)	Score: 0-5 low risk 6-9 intermediate risk 10-23 high risk[11,41]	*For intermediate- and high-risk patients, consider administering the full PGA and implement the recommendations noted above on the basis of the patient-reported results* *Consider the following potential cancer treatment modifications, particularly for intermediate- and high-risk patients and taking into consideration noncurative treatment settings: (1) consider single agent rather than doublet therapy; (2) modify dosage (eg, 20% dose reduction with escalation as tolerated); (3) modify treatment schedule if appropriate* *Consider more frequent toxicity checks (weekly or every other week)*

NOTE. These recommendations are based on the intervention material from the GAP70[8] and GAIN[6] studies.

Abbreviations: ADL, activities of daily living; CARG, Cancer and Aging Research Group; GA, geriatric assessment; GDS, Geriatric Depression Scale; IADL, instrumental activities of daily living; MOS, Medical Outcomes Survey; PGA, Practical Geriatric Assessment.

[a]The Vulnerable Elders Survey-13 (VES-13) is an alternative geriatric assessment screening tool.[16,42]

[b]Chemotherapy Risk Assessment Scale for High-Age Patients (CRASH) Score is an alternative tool that can be used to calculate risk of chemotherapy toxicity.[43]

whether to pursue treatment and at what dose should be a shared decision informed by an individual's treatment preferences.

QUESTION 5: HOW CAN ONCOLOGY PRACTICES IN LOW-RESOURCE SETTINGS ALSO PERFORM A GA AND ADDRESS THE IDENTIFIED CONCERNS?

The GA can guide discussions and decisions about the risk/benefit of treatments and is recommended for use in all treatment settings, including low-resource environments. Even in low-resource settings, the GA can inform treatment decisions (ie, the choice to treat more or less intensively on the basis of presence or absence of GA vulnerabilities). However, GA-guided interventions will have to consider availability of local resources (eg, access to cancer rehabilitation, nutritionist, geriatrics) and patient's transportation needs. Developing local resource guides can be helpful to define available resources in your area. Even without ancillary resources, GA interventions can be implemented to address identified vulnerabilities, such as providing written instructions, engaging a caregiver for patients with cognitive impairment, recommending medical alert systems for vulnerable older adults living alone or at risk for falls, treating depression if identified, providing handouts addressing mobility and nutrition, and engaging primary care providers for multimorbidity. The key is to proactively identify available resources and then use the GA to target those resources, matching the needs to the circumstances.

AFFILIATIONS

[1]University of Alabama at Birmingham, Birmingham, AL
[2]Novant Health Cancer Institute/ SCOR NCORP, Winston-Salem, NC
[3]Atrium Health Wake Forest Baptist Comprehensive Cancer Center, Winston-Salem, NC
[4]University of Texas MD Anderson Cancer Center, Houston, TX
[5]Sidney Kimmel Cancer Center, Thomas Jefferson University, Philadelphia, PA
[6]University of Rochester Medical Center, Rochester, NY
[7]American Society of Clinical Oncology, Alexandria, VA
[8]City of Hope National Medical Center, Duarte, CA

CORRESPONDING AUTHOR

Grant R. Williams, MD, MSPH, Divisions of Hematology/Oncology & Gerontology, Geriatrics, and Palliative Care Institute for Cancer Outcomes and Survivorship, O'Neal Comprehensive Cancer Center at UAB University of Alabama at Birmingham, 1600 7th Ave South, Lowder 500, Birmingham, AL 35233; e-mail: gwilliams@uabmc.edu.

DISCLAIMER

This Q&A is derived from recommendations in Practical Assessment and Management of Vulnerabilities in Older Patients Receiving Systemic Cancer Therapy: ASCO Guideline Update. This document is based on an ASCO Guideline and is not intended to substitute for the independent professional judgment of the treating physician. Practice guidelines do not account for individual variation among patients. This Q&A does not purport to suggest any particular course of medical treatment. Use of the guideline and this Q&A are voluntary. Please refer to the complete guideline to understand the full recommendations.

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

Disclosures provided by the authors are available with this article at DOI https://doi.org/10.1200/OP.23.00263.

AUTHOR CONTRIBUTIONS

Conception and design: All authors
Administrative support: Mark R. Somerfield, William Dale
Collection and assembly of data: Grant R. Williams, Amy Mackenzie
Data analysis and interpretation: All authors
Manuscript writing: All authors
Final approval of manuscript: All authors
Accountable for all aspects of the work: All authors

ACKNOWLEDGMENT

Practical Assessment and Management of Vulnerabilities in Older Patients Receiving Systemic Cancer Therapy: ASCO Guideline Update was developed and written by: William Dale, MD, PhD; Heidi D. Klepin, MD, MS; Mark R. Somerfield, PhD; Shabbir M. H. Alibhai, MD; Cristiane Bergerot, PhD; Karlynn Brintzenhofeszoc, PhD; Judith O. Hopkins, MD; Minaxi P. Jhawer, MD; Melissa Loh, MBBCh, MS; Lisa Lowenstein, PhD; June M. McKoy, MD, MPH, JD, MBA; Vanita Noronha, MD; Tanyanika Phillips, MD; Ashley E. Rosko, MD; Tracy Ruegg, PhD, ANP; Melody K Schiaffino, PhD; John Simmons; Ishwaria Subbiah, MD; William P. Tew, MD; Tracy L. Webb, PA-C; Grant R. Williams, MD, MSPH; Mary Whitehead; and Supriya G. Mohile, MD, MS

REFERENCES

1. Mohile SG, Dale W, Somerfield MR, et al: Practical assessment and management of vulnerabilities in older patients receiving chemotherapy: ASCO guideline for geriatric oncology. J Clin Oncol 36: 2326-2347, 2018
2. Dale W: Why is geriatric assessment so infrequently used in oncology practices? The ongoing issue of nonadherence to this standard of care for older adults with cancer. JCO Oncol Pract 18: 475-477, 2022
3. Gajra A, Jeune-Smith Y, Fortier S, et al: The use and knowledge of validated geriatric assessment instruments among US community oncologists. JCO Oncol Pract 18:e1081-e1090, 2022
4. Dale W, Williams GR, MacKenzie AR, et al: How is geriatric assessment used in clinical practice for older adults with cancer? A survey of cancer providers by the American Society of Clinical Oncology. JCO Oncol Pract 17:336-344, 2021
5. Dale W, Klepin HD, Williams GR, et al: Practical assessment and management of vulnerabilities in older patients receiving systemic cancer therapy: ASCO guideline update. J Clin Oncol 10.1200/JCO.23.00933
6. Li D, Sun CL, Kim H, et al: Geriatric Assessment-Driven Intervention (GAIN) on chemotherapy-related toxic effects in older adults with cancer: A randomized clinical trial. JAMA Oncol 7:e214158, 2021
7. Mohile SG, Epstein RM, Hurria A, et al: Communication with older patients with cancer using geriatric assessment: A cluster-randomized clinical trial from the National Cancer Institute Community Oncology Research Program. JAMA Oncol 6:196-204, 2020

8. Mohile SG, Mohamed MR, Xu H, et al: Evaluation of geriatric assessment and management on the toxic effects of cancer treatment (GAP70+): A cluster-randomised study. Lancet 398:1894-1904, 2021
9. Soo WK, King MT, Pope A, et al: Integrated Geriatric Assessment and Treatment Effectiveness (INTEGERATE) in older people with cancer starting systemic anticancer treatment in Australia: A multicentre, open-label, randomised controlled trial. Lancet Healthy Longev 3:e617-e627, 2022
10. Hamaker M, Lund C, Te Molder M, et al: Geriatric assessment in the management of older patients with cancer—A systematic review (update). J Geriatr Oncol 13:761-777, 2022
11. Hurria A, Togawa K, Mohile SG, et al: Predicting chemotherapy toxicity in older adults with cancer: A prospective multicenter study. J Clin Oncol 29:3457-3465, 2011
12. CARG Cancer and Aging Research Group. https://www.mycarg.org/
13. Hurria A, Gupta S, Zauderer M, et al: Developing a cancer-specific geriatric assessment: A feasibility study. Cancer 104:1998-2005, 2005
14. Williams GR, Kenzik KM, Parman M, et al: Integrating geriatric assessment into routine gastrointestinal (GI) consultation: The Cancer and Aging Resilience Evaluation (CARE). J Geriatr Oncol 11: 270-273, 2020
15. Hamaker ME, Wildes TM, Rostoft S: Time to stop saying geriatric assessment is too time consuming. J Clin Oncol 35:2871-2874, 2017
16. Saliba D, Elliott M, Rubenstein LZ, et al: The vulnerable elders survey: A tool for identifying vulnerable older people in the community. J Am Geriatr Soc 49:1691-1699, 2001
17. Soubeyran P, Bellera C, Goyard J, et al: Validation of the G8 screening tool in geriatric oncology: The ONCODAGE project. J Clin Oncol 29:550S, 2011
18. Gonzalez Serrano A, Laurent M, Barnay T, et al: A two-step frailty assessment strategy in older patients with solid tumors: A decision curve analysis. J Clin Oncol 41:826-834, 2023
19. Cohen HJ, Smith D, Sun CL, et al: Frailty as determined by a comprehensive geriatric assessment-derived deficit-accumulation index in older patients with cancer who receive chemotherapy. Cancer 122:3865-3872, 2016
20. Guerard EJ, Deal AM, Chang Y, et al: Frailty index developed from a cancer-specific geriatric assessment and the association with mortality among older adults with cancer. J Natl Compr Canc Netw 15:894-902, 2017
21. Giri S, Al-Obaidi M, Harmon C, et al: Patient-reported geriatric assessment-based frailty index among older adults with gastrointestinal malignancies. J Am Geriatr Soc 71:136-144, 2022
22. Teno J, Kiel D, Mor V: Multiple stumbles: A risk factor for falls in community-dwelling elderly. A prospective study. J Am Geriatr Soc 38:1321-1325, 1990
23. Pamoukdjian F, Paillaud E, Zelek L, et al: Measurement of gait speed in older adults to identify complications associated with frailty: A systematic review. J Geriatr Oncol 6:484-496, 2015
24. Studenski S, Perera S, Patel K, et al: Gait speed and survival in older adults. JAMA 305:50-58, 2011
25. Fillenbaum GG, Smyer MA: The development, validity, and reliability of the OARS multidimensional functional assessment questionnaire. J Gerontol 36:428-434, 1981
26. Jolly TA, Deal AM, Nyrop KA, et al: Geriatric assessment-identified deficits in older cancer patients with normal performance status. Oncologist 20:379-385, 2015
27. Bauer JM, Kaiser MJ, Anthony P, et al: The Mini Nutritional Assessment—Its history, today's practice, and future perspectives. Nutr Clin Pract 23:388-396, 2008
28. Martinez-Tapia C, Paillaud E, Liuu E, et al: Prognostic value of the G8 and modified-G8 screening tools for multidimensional health problems in older patients with cancer. Eur J Cancer 83:211-219, 2017
29. Moser A, Stuck AE, Silliman RA, et al: The eight-item modified Medical Outcomes Study Social Support Survey: Psychometric evaluation showed excellent performance. J Clin Epidemiol 65: 1107-1116, 2012
30. Williams GR, Pisu M, Rocque GB, et al: Unmet social support needs among older adults with cancer. Cancer 125:473-481, 2019
31. Pilkonis PA, Choi SW, Reise SP, et al: Item banks for measuring emotional distress from the Patient-Reported Outcomes Measurement Information System (PROMIS®): Depression, anxiety, and anger. Assessment 18:263-283, 2011
32. Riley WT, Pilkonis P, Cella D: Application of the National Institutes of Health Patient-Reported Outcomes Measurement Information System (PROMIS) to mental health research. J Ment Health Policy Econ 14:201-208, 2011
33. Hoyl MT, Alessi CA, Harker JO, et al: Development and testing of a five-item version of the geriatric depression scale. J Am Geriatr Soc 47:873-878, 1999
34. Rinaldi P, Mecocci P, Benedetti C, et al: Validation of the five-item geriatric depression scale in elderly subjects in three different settings. J Am Geriatr Soc 51:694-698, 2003
35. Williams GR, Deal AM, Lund JL, et al: Patient-reported comorbidity and survival in older adults with cancer. Oncologist 23:433-439, 2018
36. Klepin HD, Pitcher BN, Ballman KV, et al: Comorbidity, chemotherapy toxicity, and outcomes among older women receiving adjuvant chemotherapy for breast cancer on a clinical trial: CALGB 49907 and CALGB 361004 (alliance). JCO Oncol Pract 10:e285-e292, 2014
37. Borson S, Scanlan J, Brush M, et al: The mini-cog: A cognitive 'vital signs' measure for dementia screening in multi-lingual elderly. Int J Geriatr Psychiatry 15:1021-1027, 2000
38. Borson S, Scanlan JM, Watanabe J, et al: Simplifying detection of cognitive impairment: Comparison of the Mini-Cog and Mini-Mental State Examination in a multiethnic sample. J Am Geriatr Soc 53:871-874, 2005
39. Bellera CA, Rainfray M, Mathoulin-Pelissier S, et al: Screening older cancer patients: First evaluation of the G-8 geriatric screening tool. Ann Oncol 23:2166-2172, 2012
40. Soubeyran P, Bellera C, Goyard J, et al: Screening for vulnerability in older cancer patients: The ONCODAGE prospective multicenter cohort study. PLoS One 9:e115060, 2014
41. Hurria A, Mohile S, Gajra A, et al: Validation of a prediction tool for chemotherapy toxicity in older adults with cancer. J Clin Oncol 34:2366-2371, 2016
42. Mohile SG, Bylow K, Dale W, et al: A pilot study of the vulnerable elders survey-13 compared with the comprehensive geriatric assessment for identifying disability in older patients with prostate cancer who receive androgen ablation. Cancer 109:802-810, 2007
43. Extermann M, Boler I, Reich RR, et al: Predicting the risk of chemotherapy toxicity in older patients: The Chemotherapy Risk Assessment Scale for High-age patients (CRASH) score. Cancer 118: 3377-3386, 2012

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

Practical Assessment and Management of Vulnerabilities in Older Patients Receiving Systemic Cancer Therapy: ASCO Guideline Questions and Answers

The following represents disclosure information provided by authors of this manuscript. All relationships are considered compensated unless otherwise noted. Relationships are self-held unless noted. I = Immediate Family Member, Inst = My Institution. Relationships may not relate to the subject matter of this manuscript. For more information about ASCO's conflict of interest policy, please refer to www.asco.org/rwc or ascopubs.org/op/authors/author-center.

Open Payments is a public database containing information reported by companies about payments made to US-licensed physicians (Open Payments).

Grant R. Williams
Honoraria: Cardinal Health

Heidi D. Klepin
Patents, Royalties, Other Intellectual Property: UptoDate contributor

Lisa M. Lowenstein
Research Funding: AstraZeneca (Inst), Blue Cross Blue Shield (Inst)

Amy Mackenzie
Stock and Other Ownership Interests: Tenet Healthcare
Consulting or Advisory Role: Science 37

No other potential conflicts of interest were reported.