Aging Trends & Comprehensive Geriatric Assessment

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Arthur M. Coppola Family Chair,
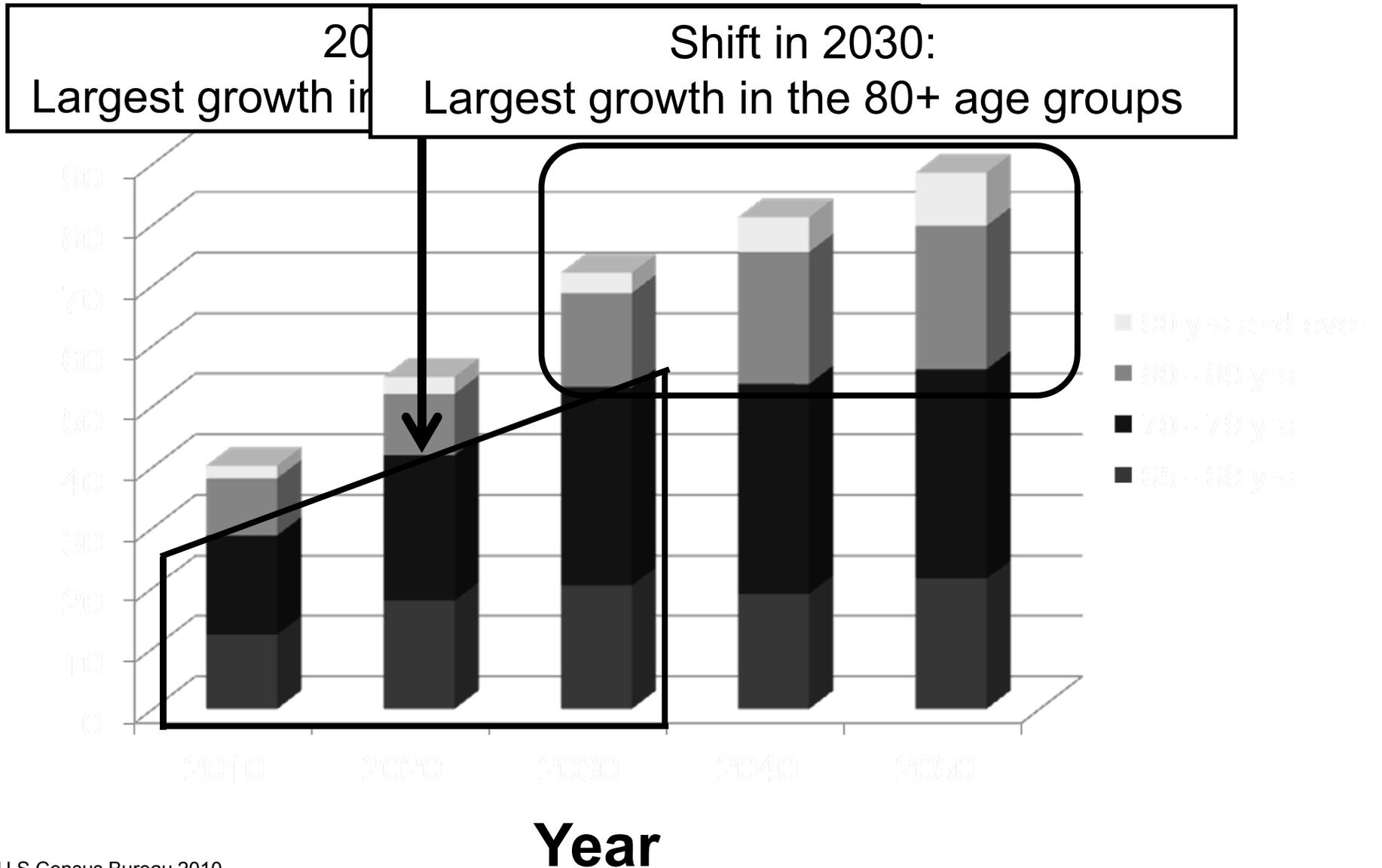Supportive Care Medicine
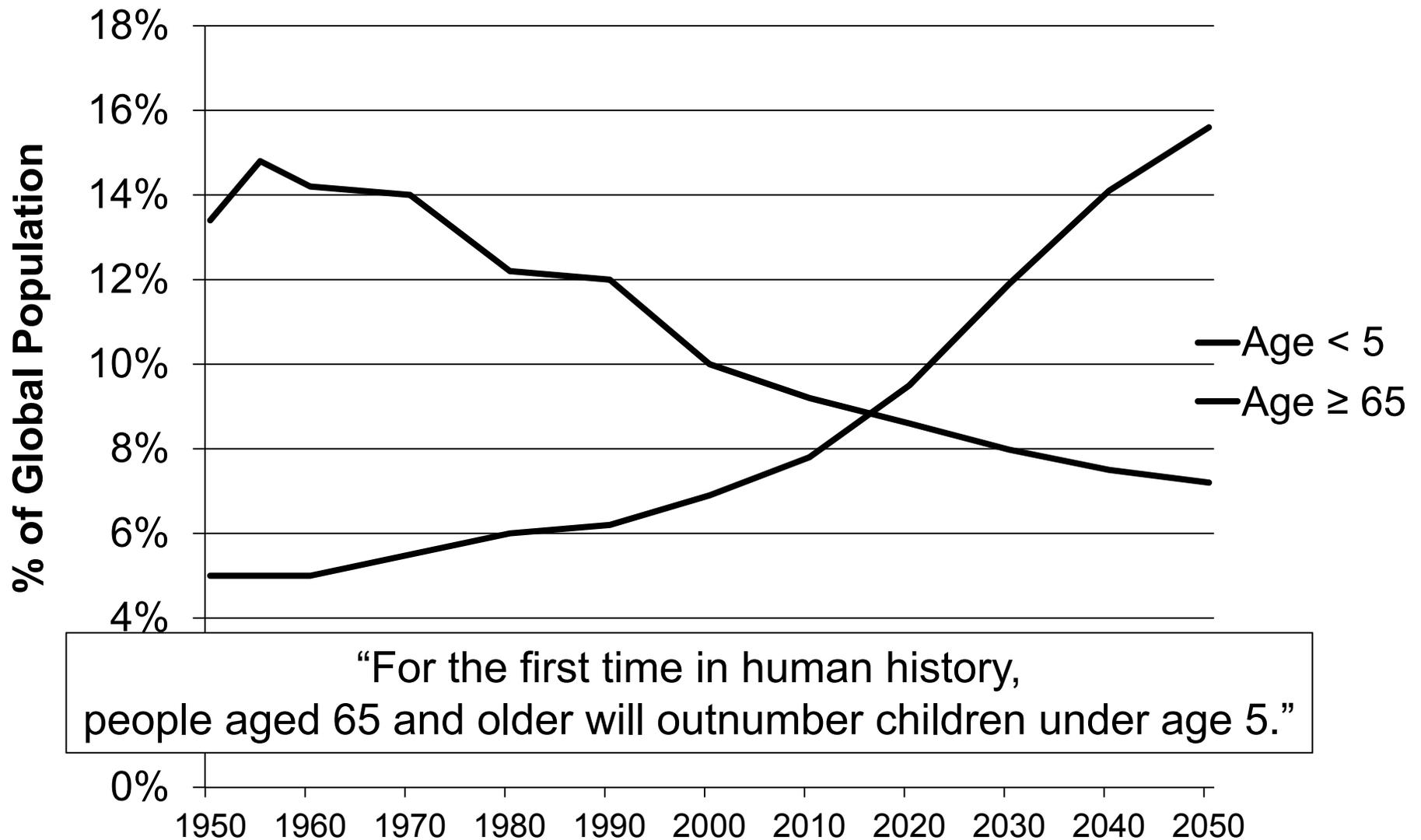
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CARG
CANCER & AGING RESEARCH GROUP

US Population Age ≥ 65 (millions)

Largest growth in

Shift in 2030:
Largest growth in the 80+ age groups

Year

An Aging World

% of Global Population (y-axis: 0%, 4%, 6%, 8%, 10%, 12%, 14%, 16%, 18%)

X-axis: 1950, 1960, 1970, 1980, 1990, 2000, 2010, 2020, 2030, 2040, 2050

Legend: Age < 5, Age ≥ 65

"For the first time in human history,
people aged 65 and older will outnumber children under age 5."

Cancer is a Disease Associated with Aging

60% of cancer occurs in people ≥ age 65

Rates per 100,000 Population

Age Groups
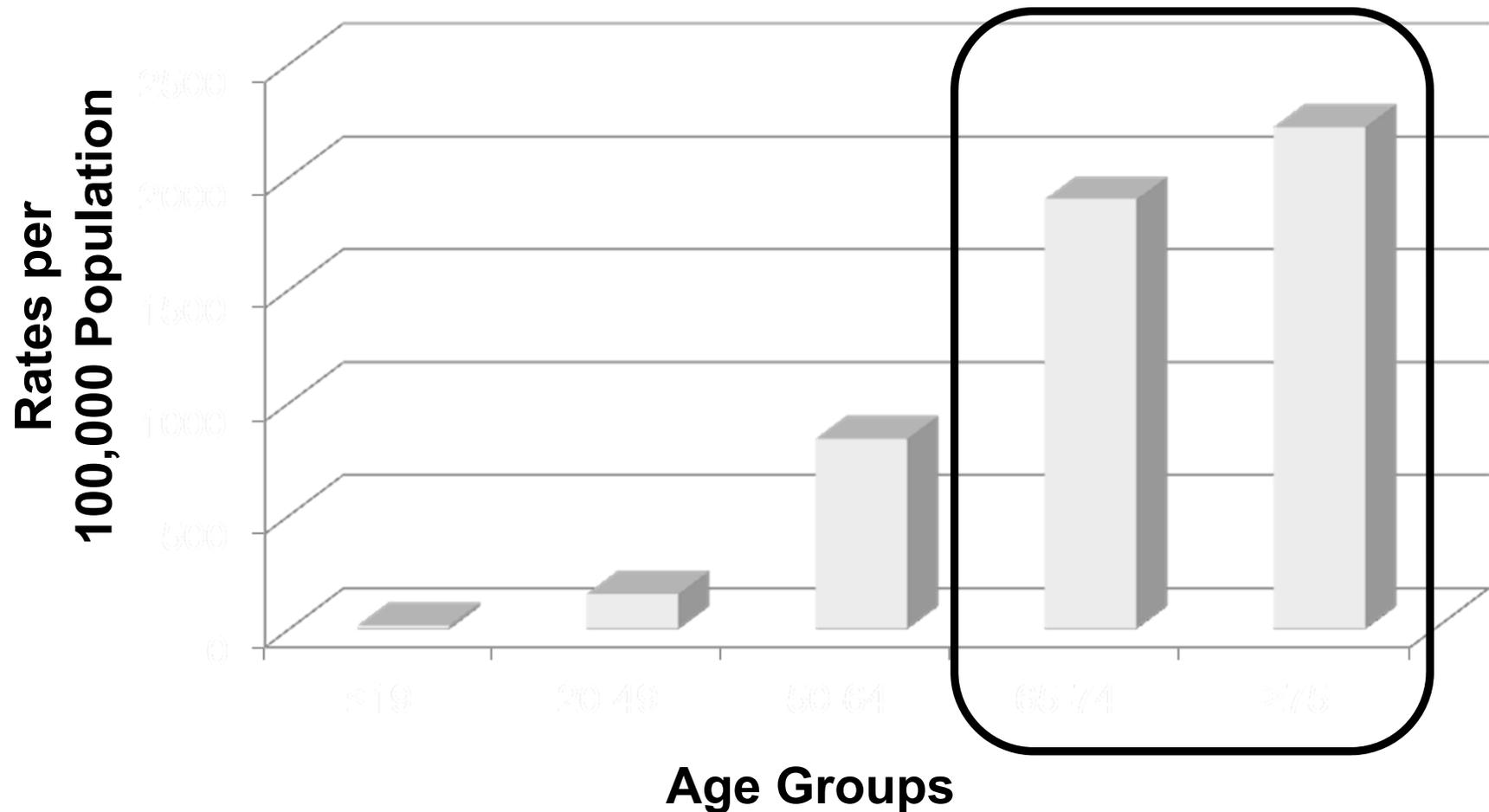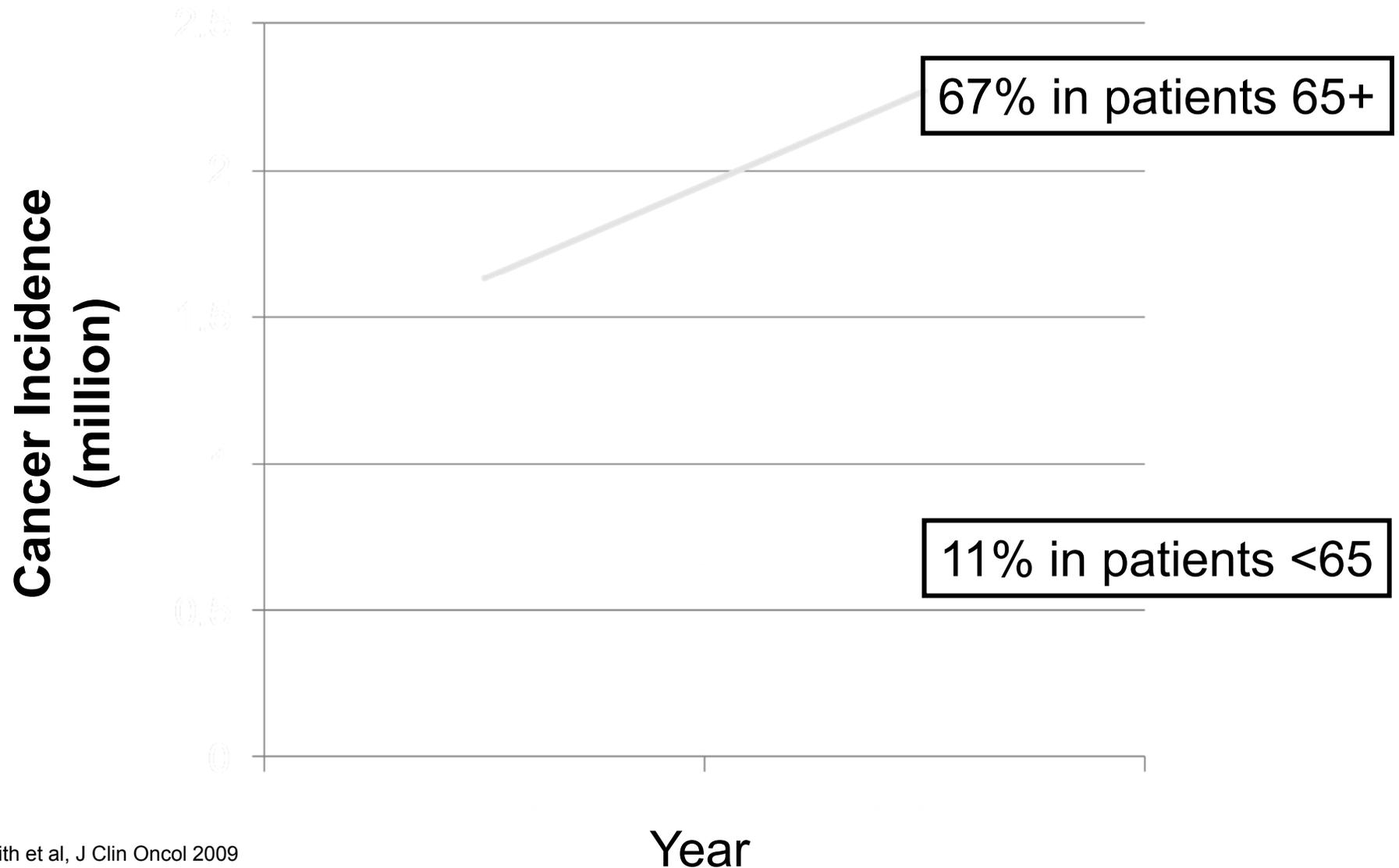
The Population is Aging

The Number of Older Adults With Cancer is on the Rise

↓

Are we prepared?

Practical Assessment and Management of Vulnerabilities in Older Patients Receiving Chemotherapy: ASCO Guideline for Geriatric Oncology

Supriya G. Mohile, William Dale, Mark R. Somerfield, Mara A. Schonberg, Cynthia M. Boyd, Peggy S. Burhenn, Beverly Canin, Harvey Jay Cohen, Holly M. Holmes, Judith O. Hopkins, Michelle C. Janelsins, Alok A. Khorana, Heidi D. Klepin, Stuart M. Lichtman, Karen M. Mustian, William P. Tew, and Arti Hurria

"In patients ≥ 65 years receiving chemotherapy, geriatric assessment (GA) should be used to identify vulnerabilities that are not routinely captured in oncology assessments. Evidence supports, at a minimum, assessment of function, comorbidity, falls, depression, cognition, and nutrition."

Mohile et al. JCO 2018

Understanding the Grey

Factors other than chronological age that predict morbidity & mortality in older adults

➢ Functional status

➢ Comorbid medical conditions

➢ Cognition

➢ Nutritional status

➢ Psychological state

➢ Social support

➢ Medications (polypharmacy)
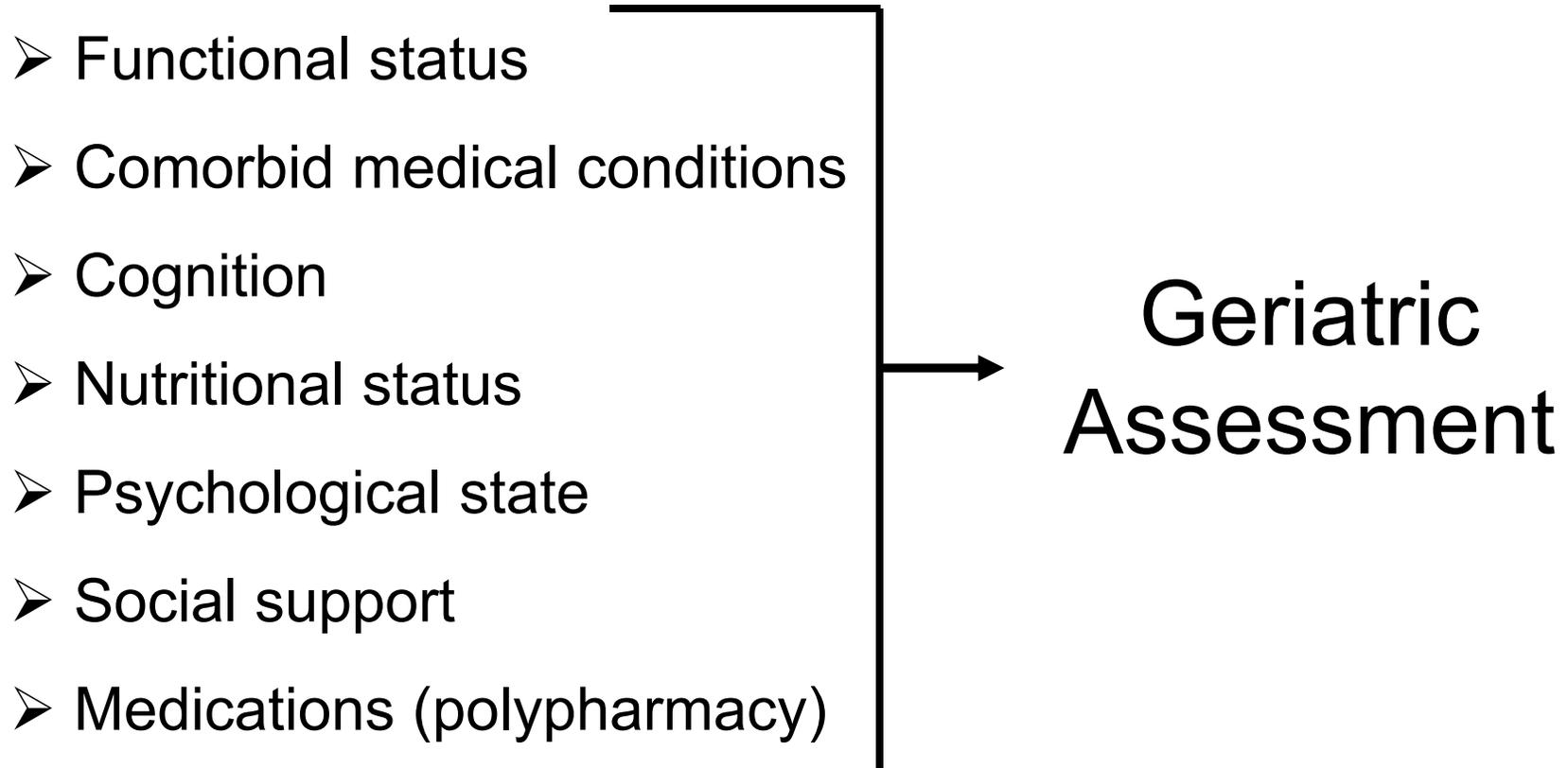
Geriatric Assessment

Cancer Specific GA Domains & Measures

Domain	Measure
Functional Status	Activities of Daily Living (subscale of MOS Physical Health)
	Instrumental Activities of Daily Living (subscale of the OARS)
	Karnofsky Physician-Rated Performance status
	No. of falls in last 6 months
	Timed Up & Go
Cognition	Blessed Orientation-Memory-Concentration Test (BOMC)
Comorbidity	Physical Health Section (subscale of the OARS)
Psychological State	MHI Depression and Anxiety
Social Activity	MOS Social Activity Survey
Social Support	MOS Social Support Survey: Emotional/Information and Tangible Subscales
Nutrition	Body Mass Index
	Percent unintentional weight loss in last 6 months

Geriatric Assessment: Functional Status Activities of Daily Living (ADLs)

Basic self-care skills

Dressing

Bathing

Toileting

Transfer

Continence

Eating

Assistance with ADLs

Predictive of:

- Prolonged hospital stay

- Worsening of function in the hospital

- Greater home care use

- Nursing home placement

- Death

Geriatric Assessment: Functional Status Instrumental Activities of Daily Living

Higher order function

Required to maintain independence in the community

Shopping

Housekeeping

Transportation

Laundry

Telephone

Finances

Medications

Assistance in IADLs

➤ Understanding need for assistance with IADLs is critical for cancer treatment planning:

     - Transportation

     - Medications

➤ Predicts survival in older patients with NSCLC

Balducci et al, the Oncologist 2000

Maione et al, JCO 2005

Poorer Functional Status →
Risk of Mortality and Institutionalization

➤ Longitudinal Study on Aging

➤ 7527 Participants

➤ Age 70 years and older

➤ Measures of Functional Status:

  -Activities of Daily Living

  -Instrumental Activities of Daily Living

➤ Nursing Home Placement and Mortality

Mor et al, Am J Public Health, 1994

Life Expectancy

Walter et al, JAMA 2014
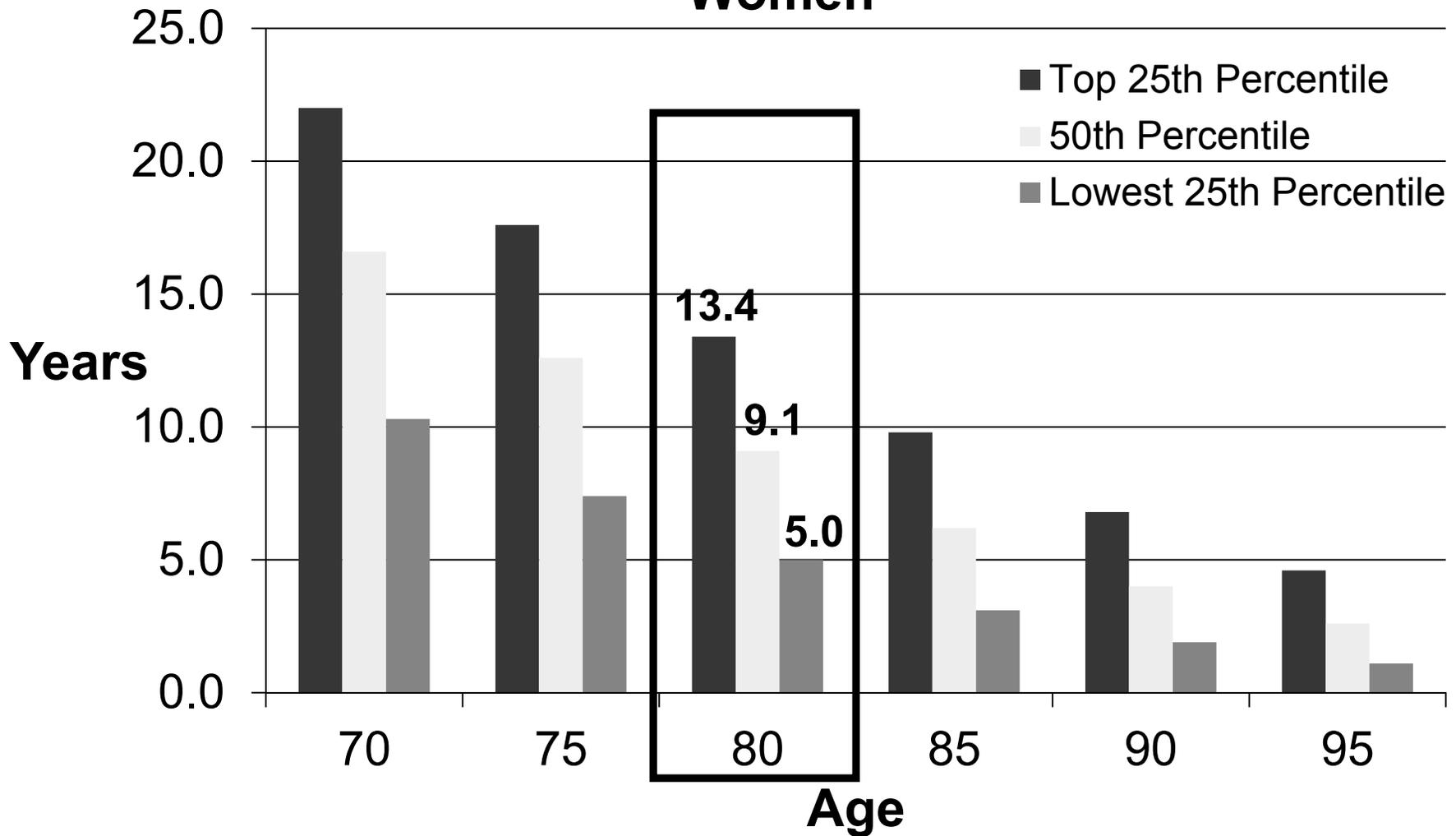
Geriatric Assessment: Nutrition

Definition:

Involuntary weight loss >5% body weight over 6 months

Older patient at risk:

➢Decreased total caloric intake

➢Progressive impairment in sense of taste or smell

➢Difficulty chewing

➢Difficulty with availability or preparation of meals

Tchekmedyian et al. Comprehensive Geriatric Oncology

Geriatric Assessment: Nutrition

Body Mass Index (BMI)

$$BMI = \frac{Weight}{(Height)^2}$$

BMI < 22kg/m2:

predictor of subsequent mortality from all causes

Landi et al, JAGS 1999

Cognitive Function in Older Patients: Implications for Cancer Therapy

Evaluate cognition and social support before starting:

> ➢ Ability to follow complex directions

> ➢ Ability to take medications on schedule

> ➢ Ability to recognize toxicity and seek help

> ➢ Family member to help

Geriatric Assessment: Psychosocial Evaluation

Older patients may cope better:

- ➢ Fewer competing demands

- ➢ Different health expectations

- ➢ More experience with coping with stress

Roberts et al, Comprehensive Geriatric Oncology

Geriatric Assessment:
Psychosocial Evaluation

Correlation between social support & psychological state

Kornblith et al, Cancer 2001

Loss of Physical Function Predicts Distress in Older Adults with Cancer

➢ 250 older adults with cancer completed a geriatric assessment

P value = 0.015

% with Distress score of ≥ 4

IADL Score
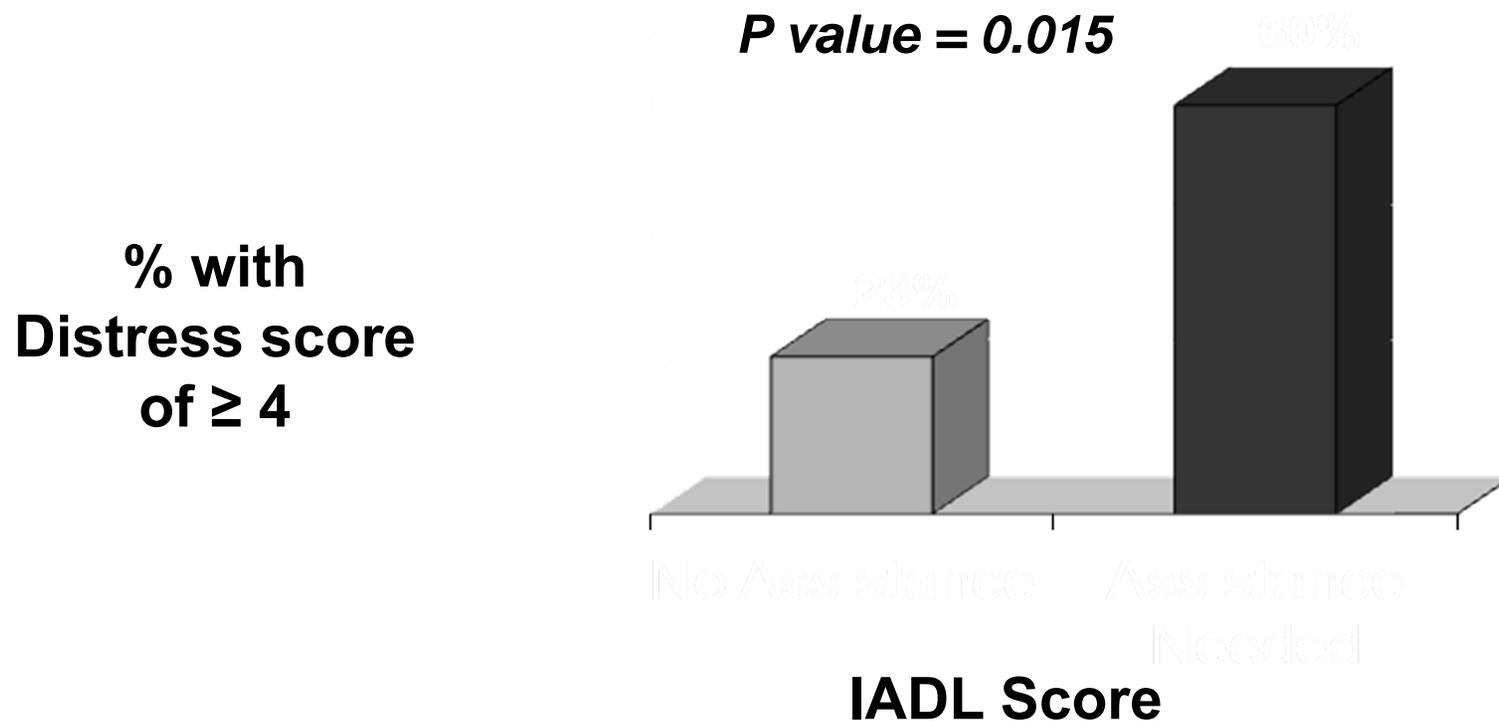
Greatest predictor of distress is impaired physical function

Hurria et al, JCO 2009

Prognostic Index for Mortality

Mortality →	1-yr	4-yr	90 day & 2-yr
	(Walter)	(Lee)	(Inouye)
Function	X	X	X
Comorbidity	X	X	
Cognition			X
Depression			X
Age		X	
Sex	X	X	
Labs (Cr, Alb)	X		

Walter, JAMA 2001; Lee, JAMA 2006; Inouye, JAMA 1998

Incorporating Geriatric Assessment into Oncology Care

Where to find an Geriatric Assessment

Cancer and Aging Research Group (CARG)

www.mycarg.org

International Society of Geriatric Oncology (SIOG)

http://siog.org/content/comprehensive-geriatric-assessment-cga-older-patient-cancer

GERIATRIC ASSESSMENT TOOLS

www.mycarg.org

Chemotherapy Toxicity Tool and Geriatric Assessment Tool

The Chemo-Toxicity Calculator

The Chemo-Toxicity Calculator is a pre-chemotherapy assessment that captures sociodemographics, tumor/treatment variables, laboratory test results (hemoglobin, creatinine clearance), and geriatric assessment variables (function, comorbidity, cognition, psychological state, social activity/support, and nutritional status). The Chemo-Toxicity Calculator is based on the results of a study which enrolled 500 patients across seven participating institutions, in order to identify factors that predict risk of severe chemotherapy-related side effects in older adults with cancer (Hurria et al. JCO 2011). The results from this study were identified by the American Society of Clinical Oncology's as one of the Clinical Cancer Advances in 2012. Having this predictive model that incorporates geriatric and oncologic correlates of vulnerability to chemotherapy toxicity in older adults could help both the healthcare provider and the patient weigh the benefits and risks of chemotherapy treatment. Our ultimate goal is to utilize this Chemo-Toxicity Calculator in clinical practice, where it can be used as a part of shared decision-making.

Chemo Toxicity Calculator

Geriatric Assessment Tool

A geriatric assessment is utilized to capture information about a patient's medical history as well as functional, cognitive, and psychosocial status, which can then be used by treating physicians to identify the most vulnerable patients (for example, those at high risk for chemotherapy toxicity). However, these assessments have not been routinely used in oncology practice because of the time and resources required for their administration. A geriatric assessment tool (that can be completed primarily by patients) was developed for incorporation into oncology clinical trials and routine care settings.[1,2] The domains that are assessed include functional status, comorbidities, medications, nutritional status, cognitive function, and psychosocial status.
Please click on the below for more information regarding the geriatric assessment tool:

[1]Hurria et al. Cancer 2005

[2]Hurria et al. JCO 2011

Geriatric Assessment in English
— Patient portion
— Healthcare provider portion

Geriatric Assessment in Spanish (Evaluación Geriátrica en Español)
— Porción del paciente
    FACITtrans Certified Translation Cerificate (Spanish)

Geriatric Assessment in Mandarin (老年人評估)
— 病人部分
    FACITtrans Certified Translation Cerificate (Traditional Chinese)

Geriatric Assessment in Japanese (日本人の高齢者評価)
— 患者部分
    FACITtrans Certified Translation Cerificate (Japanese)

Geriatric Assessment in Korean (일본의 노인병 평가)
— 환자 부분
    FACITtrans Certified Translation Cerificate (Korean)

Geriatric Assessment in Armenian (վերադպր½ի գնահատումը հայերեն)
— հիվանդի բաժին
    FACITtrans Certified Translation Cerificate (Armenian)

Geriatric Assessment available in:
- **English**
- **Spanish**
- **Mandarin**
- **Japanese**
- **Korean**
- **Armenian**

Development of a Touchscreen Geriatric Assessment

COH IRB#08147 (PI: Hurria)

Geriatric Screening Tools

- Shorter assessment
- Less time
- Determine who needs a full CGA
- Examples:
  - G8
  - SPICES

Geriatric Assessment G8

Items	Possible Answers	Score
Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?	0 = severe reduction in food intake 1 = moderate reduction in food intake 2 = normal food intake	
Weight loss during the last 3 months?	0 = weight loss >3kg 1 = does not know 2 = weight loss between 1 and 3 kg 3 = no weight loss	
Mobility	0 = bed or chair bound 1 = able to get out of bed/chair but does not go out 2 = goes out	
Neuropsychological Problems	0 = severe dementia or depression 1 = mild dementia or depression 2 = no psychological problems	
Body Mass Index (weight in kg/height in m)²	0 = BMI <19 1 = 19 ≤BMI < 21 2 = 21 ≤BMI < 23 3 = BMI > 23	
Takes more than 3 medications per day	0 = yes 1 = no	
In comparison with other people of the same age, how does the patient consider his/her health status?	0.0 = not as good 0.5 = does not know 1.0 = as good 2.0 = better	
Age	0 = >85 1 = 80-85 2 = <80	
Total score (0-17)		

Try This: Best Practices in Nursing Care to Older Adults

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from The Hartford Institute for Geriatric Nursing
New York University, College of Nursing

Issue Number 1, Revised 2007

Series Editor: Marie Boltz, PhD, APRN, BC, GNP
Managing Editor: Sherry A. Greenberg, MSN, APRN, BC, GNP
New York University College of Nursing

Fulmer SPICES: An Overall Assessment Tool for Older Adults

By: Meredith Wallace, PhD, APRN, CS, Fairfield University School of Nursing, and
Terry Fulmer, PhD, APRN, GNP, FAAN, New York University College of Nursing

WHY: Normal aging brings about inevitable and irreversible changes. These normal aging changes are partially responsible for the increased risk of developing health-related problems within the elderly population. Prevalent problems experienced by older adults include: sleep disorders, problems with eating or feeding, incontinence, confusion, evidence of falls, and skin breakdown. Familiarity with these commonly-occurring disorders helps the nurse prevent unnecessary iatrogenesis and promote optimal function of the aging patient. Flagging conditions for further assessment allows the nurse to implement preventative and therapeutic interventions (Fulmer, 1991; Fulmer, 1991).

BEST TOOL: Fulmer SPICES, developed by Terry Fulmer, PhD, APRN, FAAN at New York University College of Nursing, is an efficient and effective instrument for obtaining the information necessary to prevent health alterations in the older adult patient (Fulmer, 1991; Fulmer, 1991; Fulmer, 2001). SPICES is an acronym for the common syndromes of the elderly requiring nursing intervention:

S is for Sleep Disorders
P is for Problems with Eating or Feeding
I is for Incontinence
C is for Confusion
E is for Evidence of Falls
S is for Skin Breakdown

TARGET POPULATION: The problems assessed through SPICES occur commonly among the entire older adult population. Therefore, the instrument may be used for both healthy and frail older adults.

VALIDITY AND RELIABILITY: The instrument has been used extensively to assess older adults in the hospital setting, to prevent and detect the most common complications (Fulmer, 2001; Lopez, et al, 2002; Pfaff, 2002; Turner, J., et al, 2001; NICHE). Psychometric testing has not been done.

STRENGTHS AND LIMITATIONS: The SPICES acronym is easily remembered and may be used to recall the common problems of the elderly population in all clinical settings. It provides a simple system for flagging areas in need of further assessment and provides a basis for standardizing quality of care around certain parameters. SPICES is an alert system and refers to only the most frequently-occurring health problems of older adults. Through this initial screen, more complete assessments are triggered. It should not be used as a replacement for a complete nursing assessment.

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MORE ON THE TOPIC:
Best practice information on care of older adults: www.ConsultGeriRN.org.
Fulmer, T. (1991). The Geriatric Nurse Specialist Role: A New Model. *Nursing Management*, 22(3), 91- 93.
Fulmer, T. (1991). Grow Your Own Experts in Hospital Elder Care. *Geriatric Nursing*, March/April 1991, 64-66.
Fulmer, T. (2001). The geriatric resource nurse: A model of caring for older patients. *American Journal of Nursing*, 102, 62.
Lopez, M., Delmore, B., Ake, J., Kim, Y., Golden, P., Bier, J., & Fulmer, T. (2002). Implementing a Geriatric Resource Nurse Model. *Journal of Nursing Administration*, 32(11), 577-585.
Nurses Improving the Care of the Hospitalized Elderly (NICHE) project at the Hartford Institute for Geriatric Nursing, http://www.hartfordign.org.
Pfaff, J. (2002). The Geriatric Resource Nurse Model: A culture change. *Geriatric Nursing*, 23(3), 140-144.
Turner, J. T., Lee, V., Fletcher, K., Hudson, K., & Barton, D. (2001). Measuring quality of care with an inpatient elderly population: The geriatric resource nurse model. *Journal of Gerontological Nursing*, 27(3), 8-18.

Fulmer SPICES: An Overall Assessment Tool for Older Adults

Patient Name:		Date:	
SPICES		**EVIDENCE**	
		Yes	No
Sleep Disorders			
Problems with Eating or Feeding			
Incontinence			
Confusion			
Evidence of Falls			
Skin Breakdown			

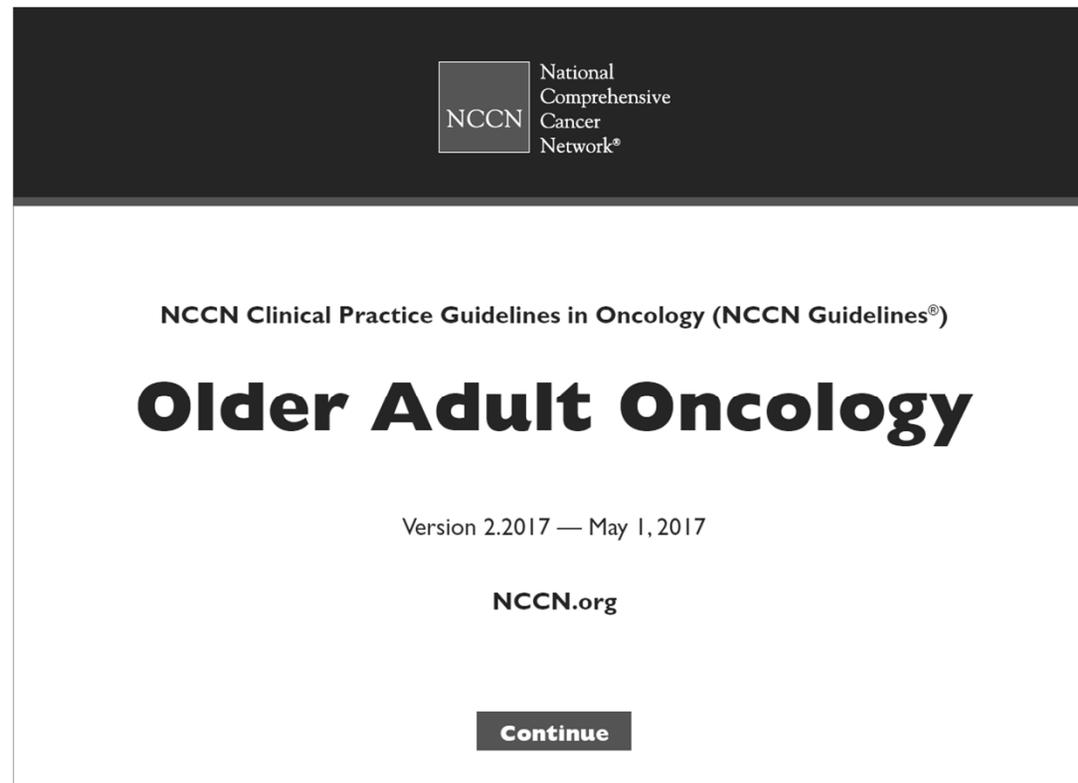Adapted from Fulmer, T. (1991). The Geriatric Nurse Specialist Role: A New Model. *Nursing Management*, 22(3), 91- 93.
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NCCN Older Adult Oncology Guidelines

- https://www.nccn.org/professionals/physician_gls/pdf/senior.pdf

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NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®)

Older Adult Oncology

Version 2.2017 — May 1, 2017

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NCCN Geriatric Screening Tools

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Older Adult Oncology

NCCN Guidelines Index
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GERIATRIC SCREENING TOOLS

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Geriatric (G-8)[6-8]
Groningen Frailty Index[2]
Triage Risk Screening Tool (TRST)[8]
Vulnerable Elders Survey (VES-13)[7,9-12]

Geriatric Syndromes

- Older adults are prone to having geriatric syndromes

- Health related conditions that do not follow a specific diagnosis

- Are prevalent in older adults, especially the frail elderly

- Can impact patient quality of life and poor outcomes

- What are geriatric syndromes?........

Geriatric Syndromes

Multiple definitions of issues prevalent in older adults

- Dementia
- Delirium
- Incontinence
- Falls/Functional decline
- Polypharmacy
- Pressure ulcers
- Sleep disorders

Burhenn et al, JGO, 2016

Geriatric Care Requires an Interdisciplinary Approach

- Nutritional deficit ⟶ Dietician
- Mobility concerns ⟶ Rehab
- Neuropsych ⟶ Social Work
- Medications ⟶ Pharmacy
- Skin ⟶ Wound Care
- Incontinence ⟶ Urology
- Sleep ⟶ Supportive Medicine

Benefits of Geriatric Assessment in Older Patients with Cancer

➢ Uncover problems not detected by routine H&P

➢ Predict toxicity to cancer treatment

➢ Predict survival of older patients with cancer

➢ Leads to targeted interventions

Hurria et al. JCO 2011

Augschoell et al. Ann Oncol. 2014

Decoster et al. J Geriatr Oncol 2013

Puts et al. Ann Oncol 2014

Decoster et al. Ann Oncol 2015

Extermann et al. Cancer 2012

Thank you!