Ann Geiger, PhD

- Chief, Health Services and Economics Branch in the Applied Research Program within NCI's Division of Cancer Control and Population Sciences
 - HSEB's mission includes: 1) study of demographic, social, economic, and health system factors as they relate to screening, diagnosis, treatment, and survivorship care, and 2) developing/improving methods and techniques of economic and health services research across cancer control continuum
 - Her own research focuses on impact of medical care on survival and QOL after cancer and systems level interventions to improve health and healthcare
- Kaiser Permanente → Wake Forest → NCI

Perspectives on Health Services and Economics Research

Ann M. Geiger, MPH, PhD

Chief, Health Services & Economics Branch
Division of Cancer Control and Population Sciences
National Cancer Institute

http://healthservices.cancer.gov

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

CCCWF CCOP Research Base 13th Annual Meeting October 25, 2013

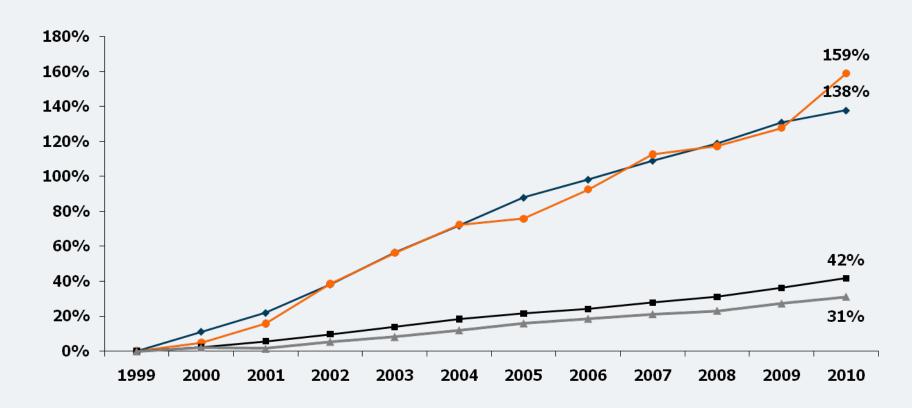
Disclosures

Financial and Conflict of Interest: None

The views expressed in this presentation reflect those of the author and do not necessarily reflect the official views of the National Cancer Institute, the National Institutes of Health, the U.S. Department of Health and Human Services, or the federal government.

Thanks to my colleagues Carrie Klabunde, PhD, and K.
 Robin Yabroff, PhD, for sharing their slides.

Cumulative Changes in Health Insurance Premiums, Workers' Contribution to Premiums, Inflation, and Workers' Earnings, 1999-2010



Source: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999-2010. Bureau of Labor Statistics, Consumer Price Index, U.S. City Average of Annual Inflation (April to April), 1999-2010; Bureau of Labor Statistics, Seasonally Adjusted Data from the Current Employment Statistics Survey, 1999-2010 (April to April).





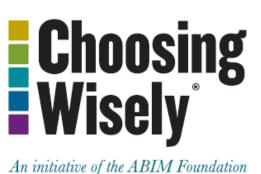
Goals of this Session

 Overview of basic principles and practice of health services and economics research (HSR)

 NCORP cancer care delivery research falls under rubric of health services research

AcademyHealth Definition

Health services research is used throughout the health care field to understand how to finance the costs of care, measure and improve the quality of care, and improve coverage and access to affordable services. It provides . . . the data and evidence . . . to make decisions that optimize health care and improve health outcomes.



American Society of Clinical Oncology



American Society of Clinical Oncology

Five Things Physicians and Patients Should Question

What is Health Services Research?

- Application of scientific knowledge to the study of how to deliver health services at the <u>population</u> level
 - Influences policy in medical practices, delivery systems, communities, and society
- Fundamentally about disparities
 - Patterns of overuse, underuse, and/or misuse
 - Reasons
 - Outcomes
 - Economic burden
 - Reasons
 - Interventions

Multidisciplinary

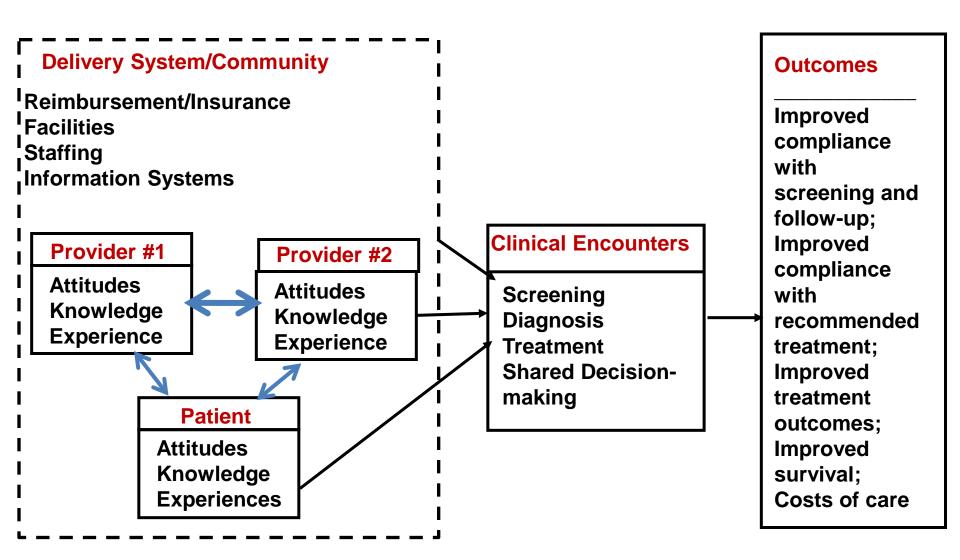
- Economics
- Epidemiology
- Ethics
- Information Technology
- Management Sciences
- Policy
- Program Evaluation
- Psychology
- Sociology

- Clinical providers
- Allied healthcare professionals
- Administrators
- Public health professionals
- Researchers

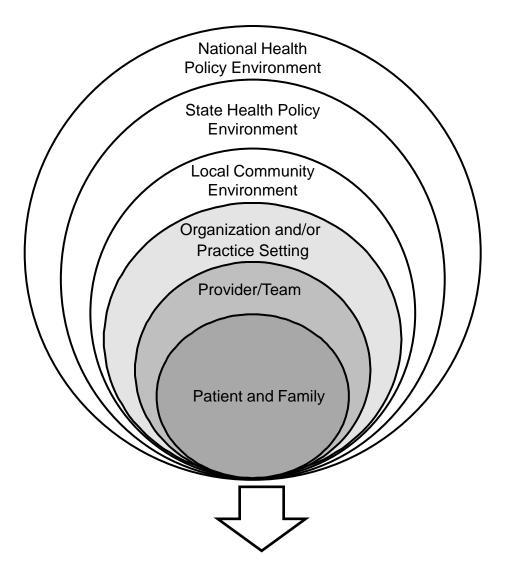
Health Services Research Examines Delivery Activities Across the Cancer Continuum

Prevention	Detection	Diagnosis	Treatment	Survivorship
 Tobacco control Alcohol use Sun exposure Nutrition & activity Infectious disease control Chemoprevention 	Pap/HPV testMammographyFOBTColonoscopyPSA	 Clinician(s) Lab tests Imaging Procedures 	 Surgery Chemotherapy Radiation therapy Hormonal therapy Immunotherapy Palliative care Symptom management Behavioral health 	 Surveillance for recurrence Screening for 2nd cancers Manage late effects Health promotion

Factors Contributing to Care Delivery



HSR Considers Care Delivery in Context

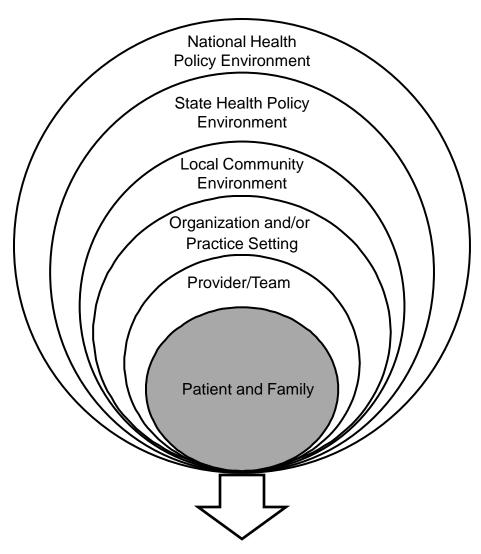


Cancer Prevention, Detection, Diagnosis, Treatment, and Survivorship

Colorectal Cancer Treatment Guidelines

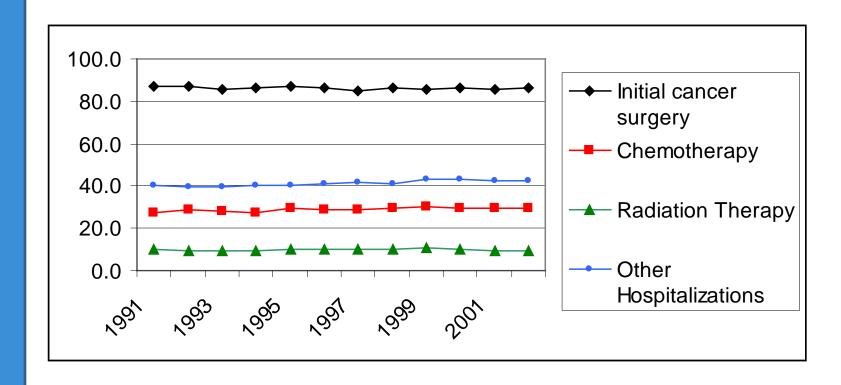
- Guide decision-making about
 - surgical resection and removal of lymph nodes
 - neoadjuvant or adjuvant chemotherapy
 - radiation
- Based on clinical presentation, stage, and risk for recurrence
- Typically evidence-based
- Change over time based on introduction of new treatments
- Can be used to assess disparities

Influences on Care Delivery and Outcomes



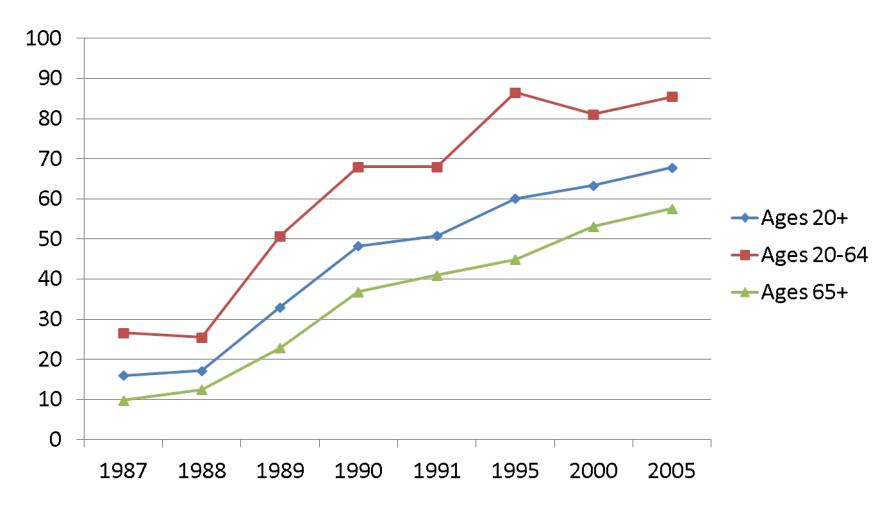
Treatment and Survivorship

% Elderly Colorectal Cancer Patients Receiving Treatment in First Year After Diagnosis



Source: Warren JL, Yabroff KR, Meekins A, Topor M, Lamont EB, Brown ML. Evaluation of trends in the cost of initial cancer treatment. J Natl Cancer Inst 2008; 100:888-897.

Percent of colon stage III and rectal stages II & III cancer patients who received chemotherapy by age at diagnosis: 1987-2005



Data source: SEER Patterns of Care Studies http://progressreport.cancer.gov/doc_detail.asp?pid=1&did=2009&chid=94&coid=924&mid=

Insurance Status and Receipt of Guideline Consistent Therapy

	Receipt of Guideline Therapy		
Insurance type	Unadjusted	Adjusted*	
p-value	0.002	0.009	
No Insurance	45%	38%	
Private	55%	53%	
Medicaid	42%	47%	
Medicare only	47%	54%	
Unknown	36%	35%	

^{*}Adjusted for site, stage, Charlson comorbidity score, number of positive nodes, residency training program, hospital bed size, age, marital status, education, gender, and race

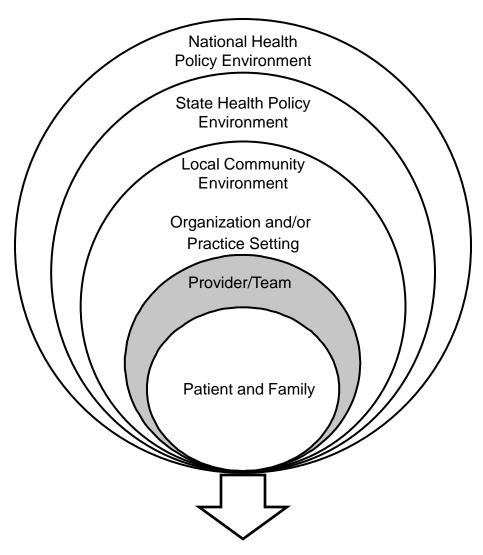
Source: Cronin DP, Harlan LC, Potosky AL, Clegg LX, Stevens JL, Mooney MM. Patterns of care for adjuvant therapy in a random population-based sample of patients diagnosed with colorectal cancer. Am J Gastroenterol.

2000.101/10\.2200.10

Other Examples: Patient Factors Associated with Colorectal Cancer Treatment

- Older patients less likely than younger patients to receive adjuvant chemotherapy and guideline consistent therapy
- Minorities have poorer survival, perhaps because they are less likely to receive guideline consistent surgery, adjuvant chemotherapy, and/or radiation therapy
- Individuals without health insurance more likely to be diagnosed with late stage disease, less likely to receive guideline consistent therapy, and, within stage, have poorer survival

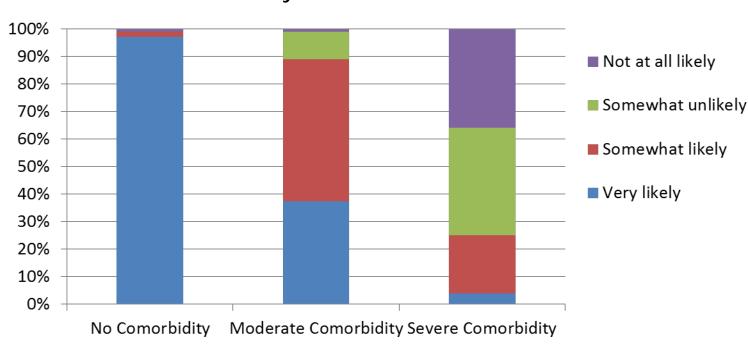
Influences on Care Delivery and Outcomes



Treatment and Survivorship

Physician recommendations for adjuvant chemotherapy

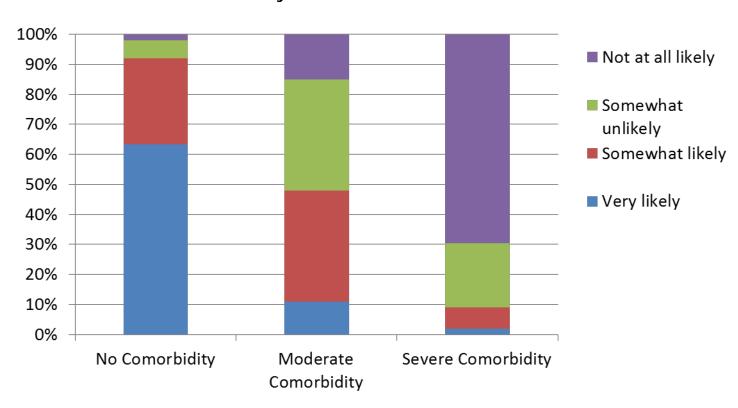
How likely are you to recommend adjuvant chemotherapy for a 55 year old with...



Source: Keating NL, Landrum MB, Klabunde CN, Fletcher RH, Rogers SO, Doucette WR, Tisnado D, Clauser S, Kahn KL. Adjuvant chemotherapy for stage III colon cancer: do physicians agree about the Importance of patient age and comorbidity. J Clin Oncol 2008;26:2532-2537.

Physician recommendations for adjuvant chemotherapy

How likely are you to recommend adjuvant chemotherapy for a 80 year old with...

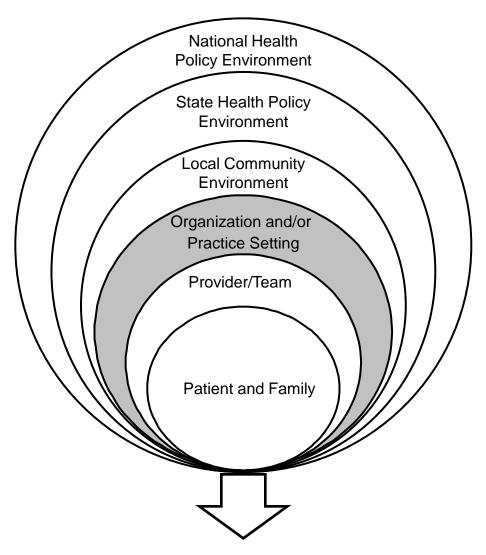


Source: Keating NL, Landrum MB, Klabunde CN, Fletcher RH, Rogers SO, Doucette WR, Tisnado D, Clauser S, Kahn KL. Adjuvant chemotherapy for stage III colon cancer: do physicians agree about the Importance of patient age and comorbidity. J Clin Oncol 2008;26:2532-2537.

Other Examples: Physician Factors Associated with Colorectal Cancer Treatment

- Younger physicians more likely to recommend guideline consistent therapy
- Patients treated by board-certified colorectal surgeons had a lower in-hospital mortality rate than other surgeons
- High-volume surgeons more likely to perform guideline-consistent surgery (e.g., sphincter-sparing surgery in rectal cancer patients)
- Patients treated by high-volume medical oncologists more likely to complete adjuvant chemotherapy

Influences on Care Delivery and Outcomes



Treatment and Survivorship

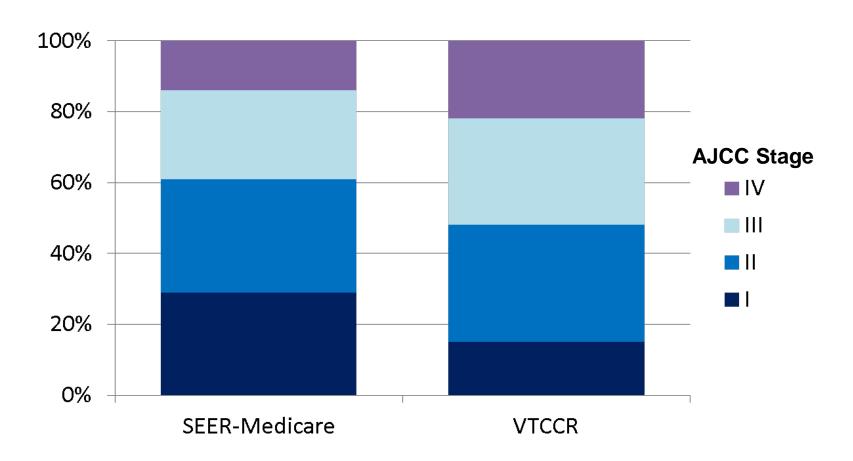
Hospital Procedure Volume and Post-Surgical Colorectal Cancer Outcomes

Hospital volume	Number of Patients	5-year mortality, %	Overall Survival, Adjusted Risk Ratio*	P- value
Very high	7097	50.4	1.00	<0.001
High	6947	51.5	1.10 (1.05-1.15)	
Medium	7105	53.6	1.13 (1.08-1.18)	
Low	6837	54.8	1.16 (1.11-1.21)	

Source: Schrag D et al., Influence of Hospital Procedure Volume on Outcomes Following Surgery for Colon Cancer JAMA 2000;284:3028-3035

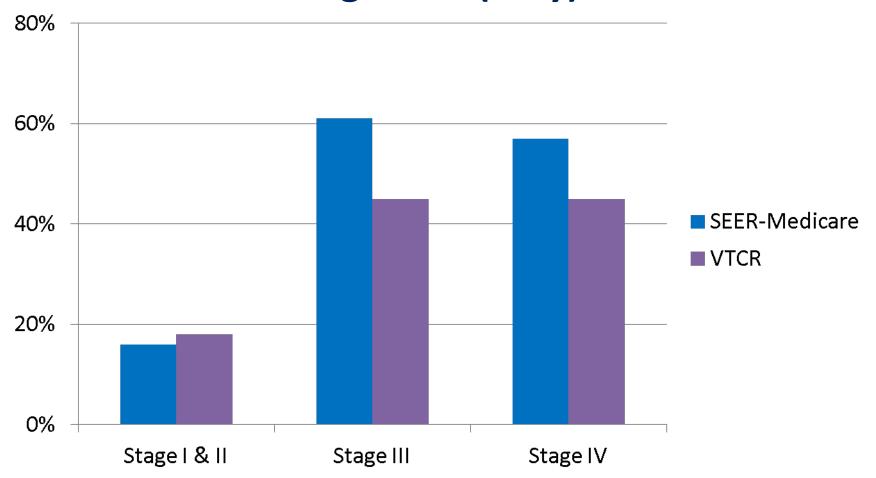
^{*}Adjusted for sex, age at diagnosis, race, clinical stage, comorbidity, median income

Stage Distribution for Colorectal Cancer Patients Ages 66+ Diagnosed 2000-2001, SEER-Medicare (US) and Veneto and Tuscany Cancer Registries (Italy)



Source: Gigli A, Warren JL, Yabroff KR, Francisci S, Stedman M, Guzzinati S, Giusti F, Miccinesi G, Crocetti E, Angiolini C, Mariotto A. Initial treatment for newly diagnosed elderly colorectal cancer patients: Patterns of care in Italy and the United States. J Natl Cancer Inst Monogr 2013 (46):88-98.

Use of Adjuvant Chemotherapy in Colon Cancer Patients Ages 66+ Diagnosed 2000-2001, SEER-Medicare (US) and Veneto and Tuscany Cancer Registries (Italy)

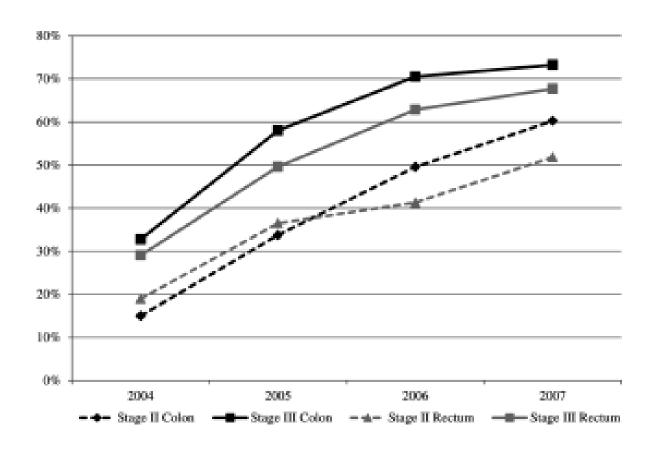


Source: Gigli A, Warren JL, Yabroff KR, Francisci S, Stedman M, Guzzinati S, Giusti F, Miccinesi G, Crocetti E, Angiolini C, Mariotto A. Initial treatment for newly diagnosed elderly colorectal cancer patients: Patterns of care in Italy and the United States. J Natl Cancer Inst Monogr 2013 (46):88-98.

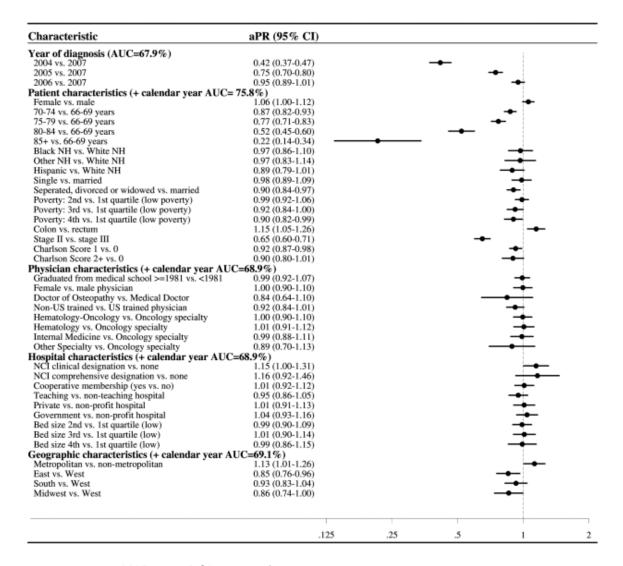
Other Examples: System Factors Associated with Colorectal Cancer Treatment

- Variation in examination of lymph nodes among resected elderly stage I-III colon cancer patients across health care plans and type of plan (managed care vs. fee for service)
- Patients treated at high volume hospitals more likely to receive guideline consistent surgery (e.g., sphincter-sparing procedures for rectal cancer), better short term and longer term mortality than those treated at low volume hospitals
- International variation in concentration of physicians, hospitals, availability of technology, and service frequency

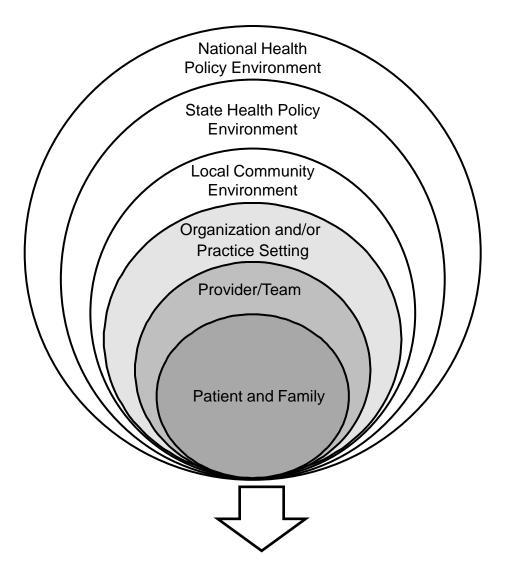
Determinants of adjuvant oxaliplatin receipt among older stage II and III colorectal cancer patients



Determinants of adjuvant oxaliplatin receipt among older stage II and III colorectal cancer patients

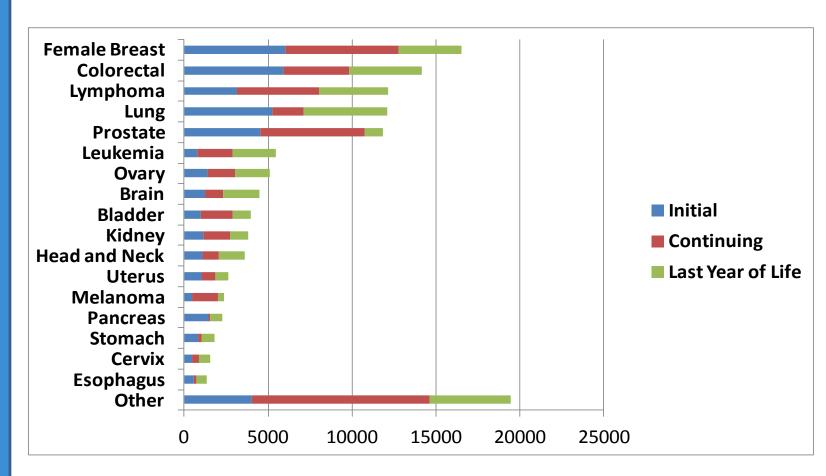


HSR Considers Care Delivery in Context



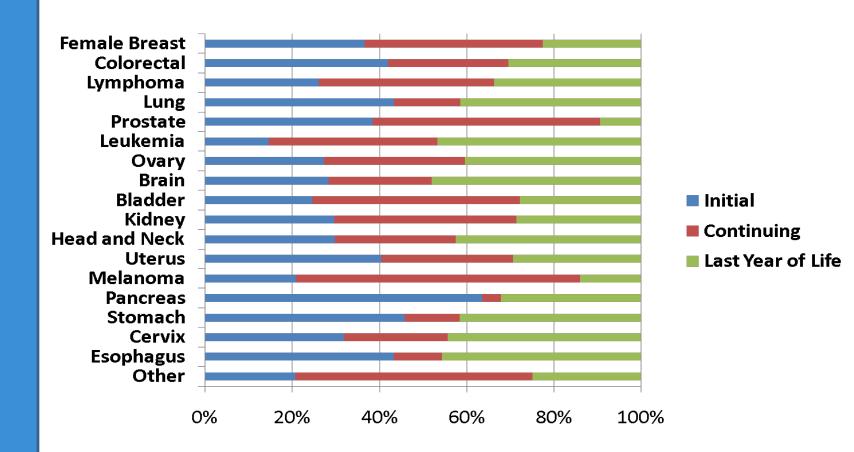
Cancer Prevention, Detection, Diagnosis, Treatment, and Survivorship

Estimates of the National Expenditures for Cancer Care in the US in 2010 (in millions of dollars), by Cancer Site and Phase of Care



Source: Mariotto AB, Yabroff KR, Shao Y, Feuer EJ, Brown ML. Projections of the costs of cancer care in the United States: 2010-2020. J Natl Cancer Inst 2011:103:117-128.

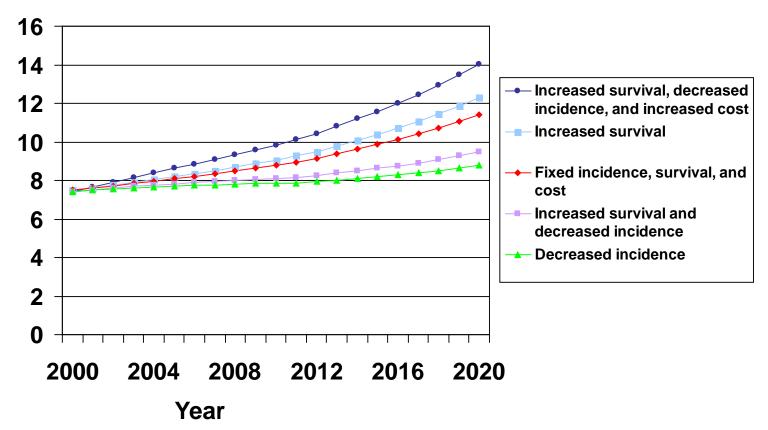
Estimates of the Proportion of National Expenditures for Cancer Care in the US in 2010, by Cancer Site and Phase of Care



Source: Mariotto AB, Yabroff KR, Shao Y, Feuer EJ, Brown ML. Projections of the costs of cancer care in the United States: 2010-2020. J Natl Cancer Inst 2011:103:117-128.

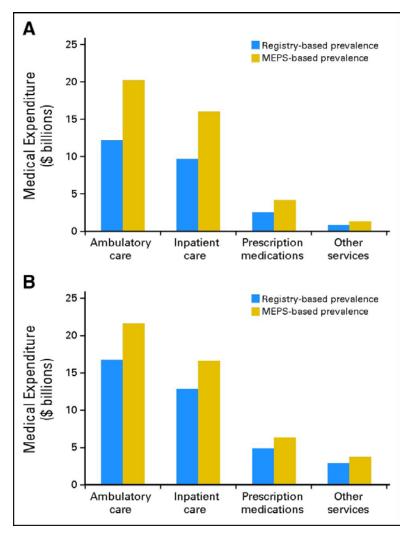
Projected Costs of Colorectal Cancer Care in Elderly, Sensitivity Analysis 2000-2020

Dollars, in billions



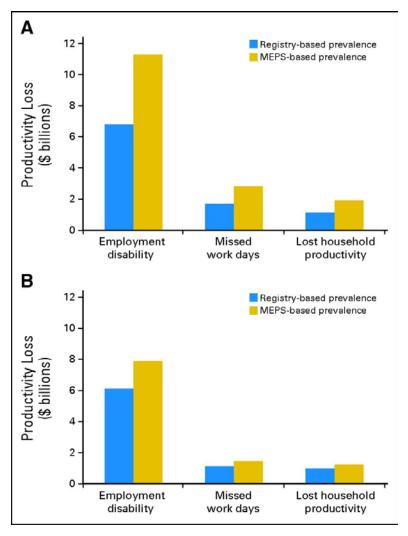
Source: Yabroff KR, Mariotto A, Feuer E, Brown ML. Projections of the costs associated with colorectal cancer care in the United States, 2000-2020. Health Econ 2008; 17:947-59

Aggregate annual net medical expenditure ranges by service type among adult cancer survivors (A) age 18 to 64 years and (B) age ≥ 65 years.



Guy G P et al. JCO 2013;31:3749-3757

Aggregate annual net productivity loss ranges among adult cancer survivors (A) age 18 to 64 years and (B) age ≥ 65 years.



Guy G P et al. JCO 2013;31:3749-3757

Summary

- Health services research...
 - Examines health care delivery
 - At the population level
 - Considers multilevel factors
 - Critical role in policy

• My Branch:

Our mission is to support, conduct, and coordinate research on the dissemination of effective cancer-related health services into community practice. We study demographic, social, economic, and health system factors as they relate to providing preventive, screening, diagnostic, and treatment services for cancer. The ultimate purpose of this research is to improve cancer outcomes, reduce cancer-related health disparities, and reduce the burden of cancer to patients, their families, and society.

http://appliedresearch.cancer.gov/about/hseb/

Thank You!

• Questions or comments?

ann.geiger@nih.gov