

Access to Care, Expenditures, and Productivity in Survivors of Adolescent and Young Adult Cancers

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Cancer Survivorship and Access to Care, Healthcare Expenditures, and Productivity

- Cancer survivors can experience lasting effects of treatment and increased risk for additional cancers and chronic conditions
- Compared to individuals without a cancer history, cancer survivors may experience greater:
 - Disparities in access to care and use of preventive services by insurance type
 - Healthcare expenditures
 - Health limitations
 - Limitations in amount or kind of work and days lost from work

Survivors of Adolescent and Young Adult Cancers

- Less research has focused on socioeconomic outcomes of survivors of adolescent and young adult (AYA) cancers
- Goal of talk: Adapt several recent studies using national data to focus on survivors of AYA cancers compared to individuals without a cancer history
 - Access to care
 - Healthcare expenditures
 - Productivity losses (e.g., health related unemployment, missed work)

Medical Expenditure Panel Survey (MEPS)

- Annual survey with overlapping panel design, sample selected from National Health Interview Survey
- Conducted by Agency for Healthcare Research & Quality
- Nationally representative
- Approximately 13,000 households and 32,000 individuals
- Average annual response rate approximately 60%
- Topics include
 - Health status
 - Access to care
 - Health insurance
 - Healthcare utilization and expenditures

<http://meps.ahrq.gov/mepsweb/>

Survivors of Adolescent and Young Adult Cancers in the MEPS

- 3 years of MEPS Household Component (2008-2010)
- “Did a doctor or other health professional **ever** tell cancer or malignancy of any kind”
 - Prevalent sample
- Sample ages 18-64 at time of the survey
 - Cancer survivors: diagnosed at ages 15-39
 - Comparison group: never diagnosed with cancer

Survivors of Adolescent and Young Adult Cancers in the MEPS

- Evaluated the association between cancer survivorship and
 - Access to care
 - Expenditures
 - Productivity (e.g., health related unemployment, missed work)
- Multivariate regression analyses controlled for age, gender, marital status, and number of comorbid conditions
- Reported predicted margins (adjusted percentages)

Characteristics of Survivors of AYA Cancers and Individuals without a Cancer History

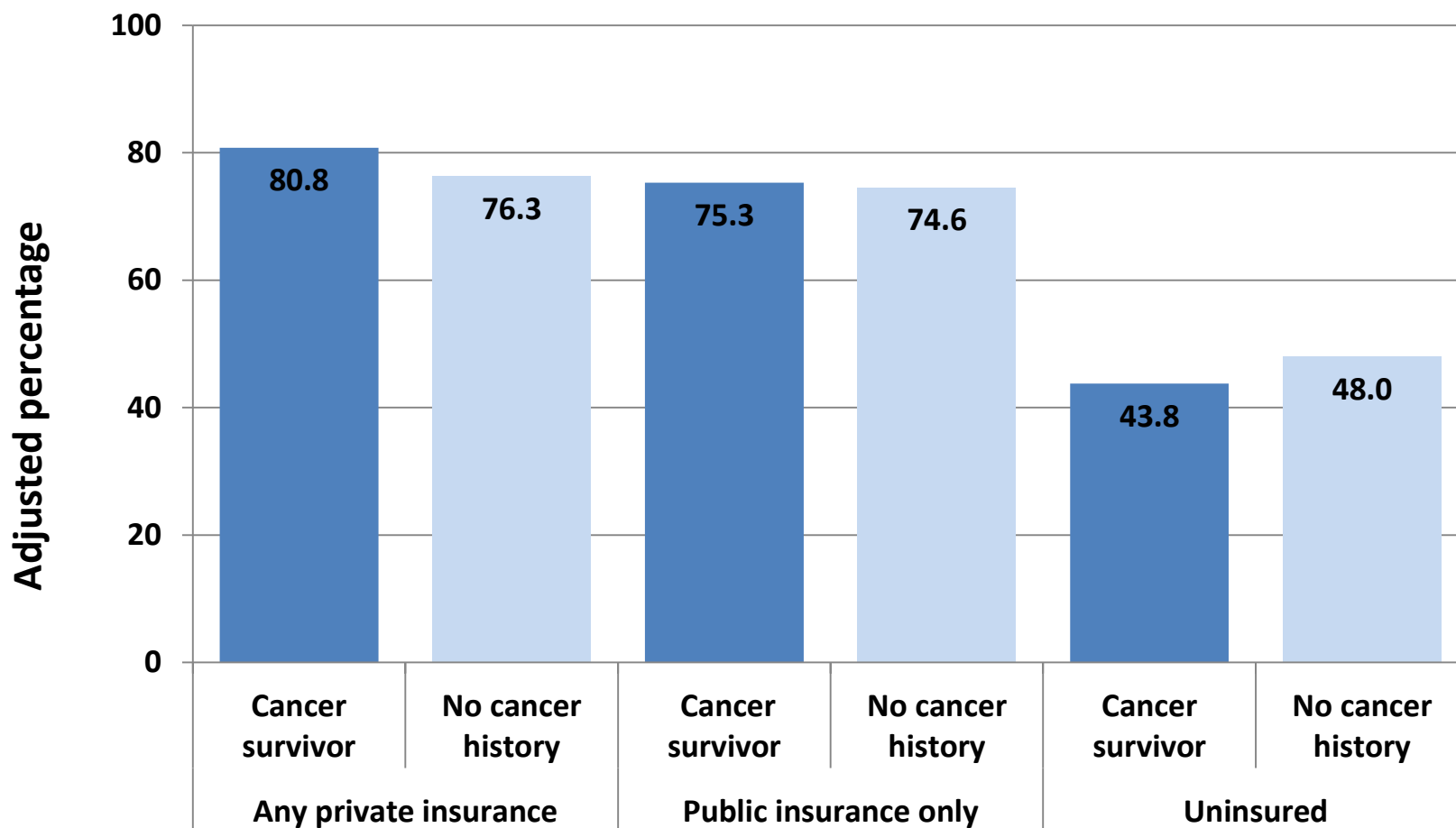
	Cancer Survivor (N = 882) Wtd %	No Cancer History (N=55,972) Wtd %	p-value
Age group			
18-44	51.7	59.8	0.0092
45-49	14.6	11.2	
50-54	14.2	11.5	
55-59	8.8	9.6	
60-64	10.7	7.9	
Sex			
Male	22.4	50.3	<.0001
Female	77.6	49.7	
Race / ethnicity			
Non-Hispanic white	80.8	64.8	<.0001
Non-Hispanic black	6.7	12.3	
Hispanic	8.7	15.7	
Non-Hispanic other	3.8	7.2	

Data source: 2008-2010 Medical Expenditure Panel Survey (MEPS); Limited to individuals ages 18-64 either diagnosed with cancer at ages 15-39 or never diagnosed with cancer

Characteristics of Survivors of AYA Cancers and Individuals without a Cancer History

	Cancer survivor Wtd %	No cancer history Wtd %	p-value
Health insurance			
Any private	68.2	70.8	<.0001
Public only	18.1	10.1	
Uninsured	13.8	19.1	
Number of known MEPS priority conditions, excluding cancer			
0	33.0	52.8	<.0001
1	26.0	23.8	
2	18.0	12.5	
3+	22.9	10.8	

Usual Source of Care, by Type of Health Insurance

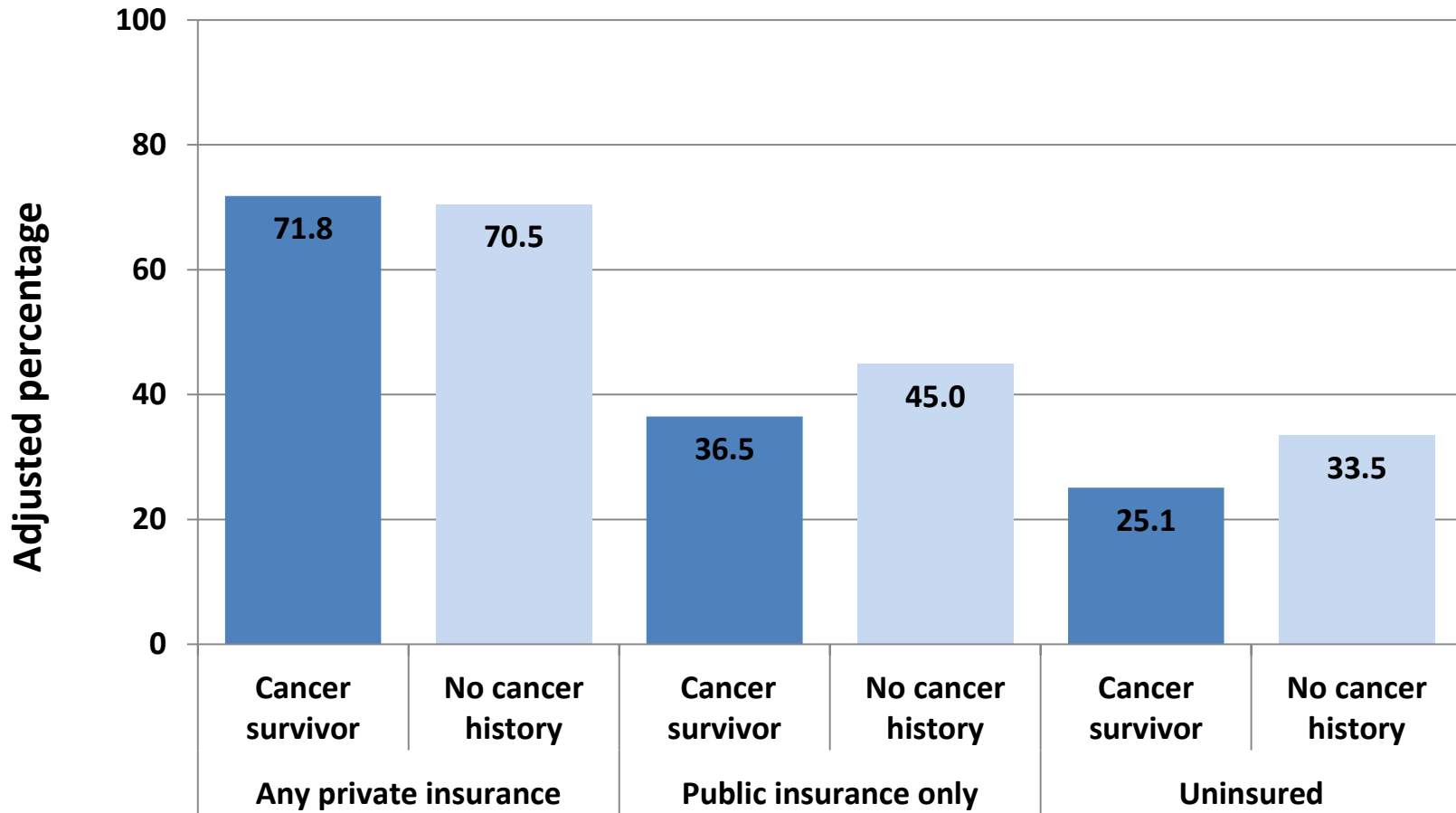


$p < 0.0001$; Multivariate logistic regression analyses with estimates reported as predicted margins and controlling for the effects of age, number of comorbid conditions, gender, race/ethnicity, marital status.

Data source: 2008-2010 Medical Expenditure Panel Survey

Source: Adapted from Yabroff KR, Short PF, Machlin S, Dowling E, Rozjabek H, Li C, McNeel T, Ekwueme DU, Virgo KS Access to preventive healthcare for cancer survivors. *Am J Prev Med*, in press.

Recent Dental Visit, by Type of Health Insurance

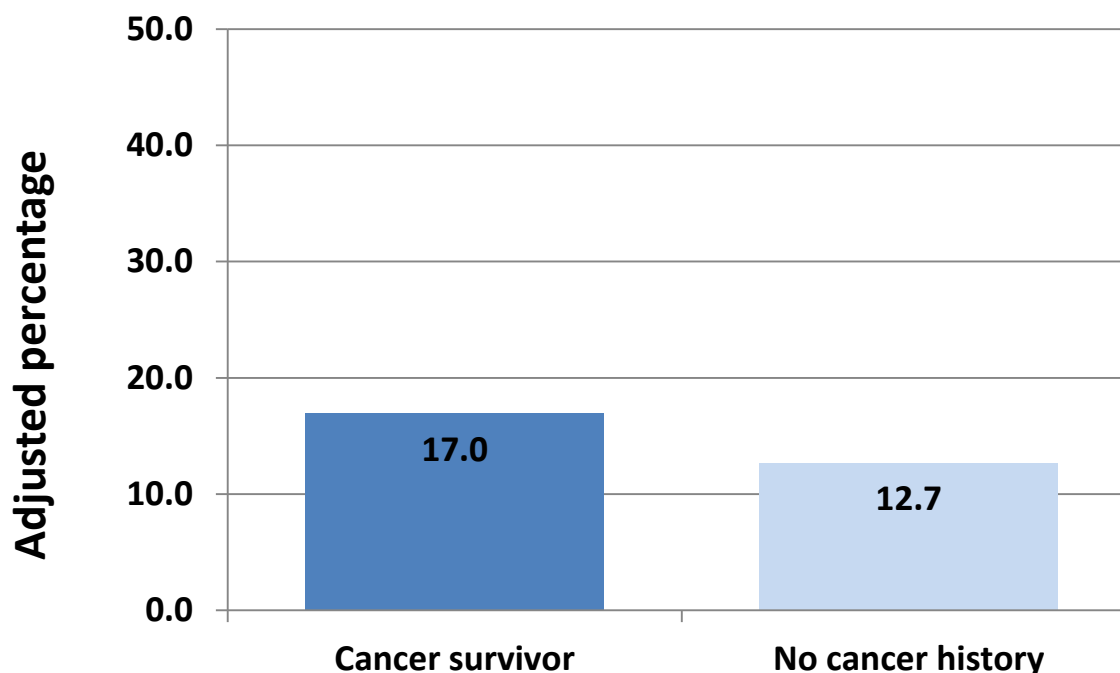


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Unable to Get or Delayed Necessary Medical Care, Dental Care, or Prescription Medication

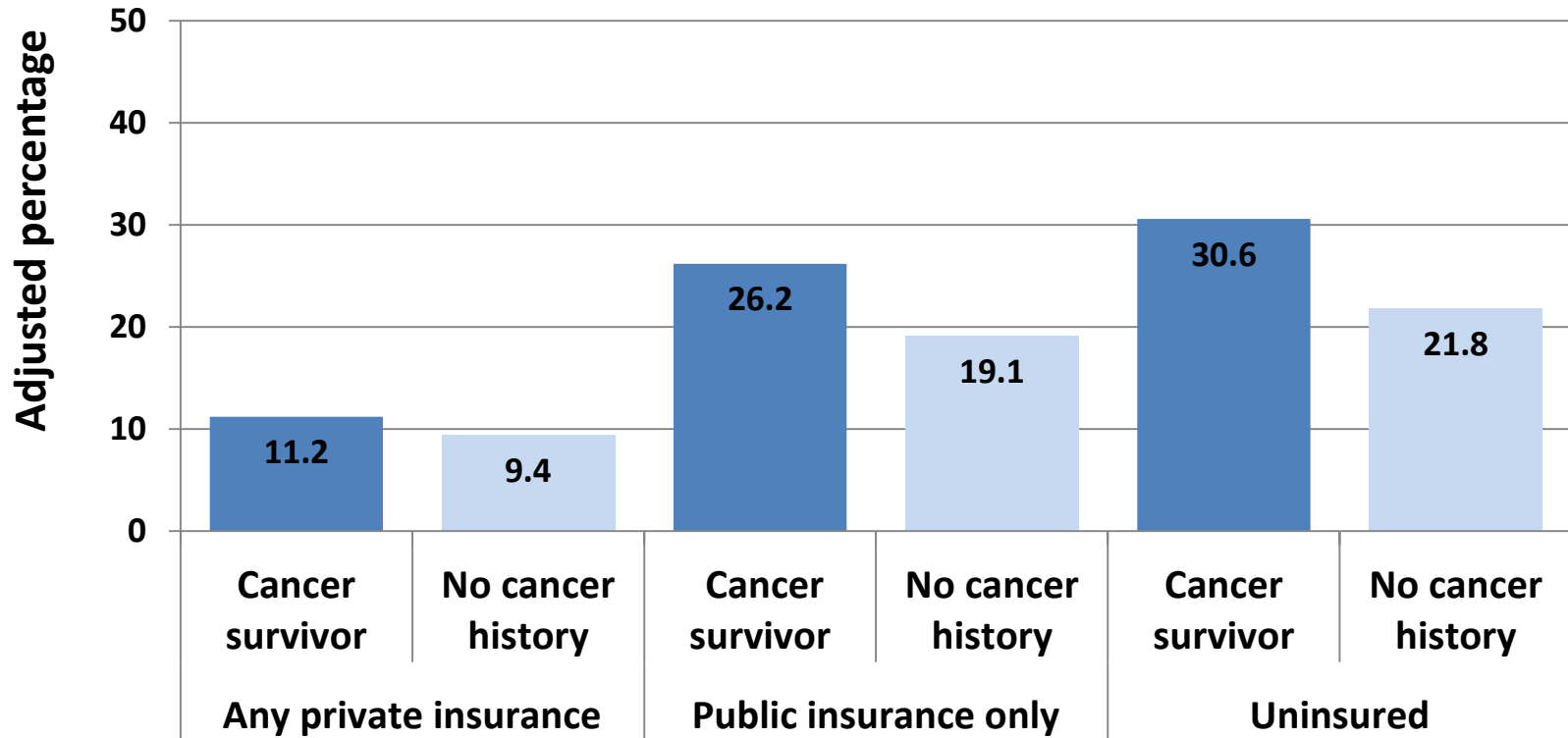


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Unable to Get or Delayed Necessary Medical Care, Dental Care, or Prescription Medication, by Type of Health Insurance

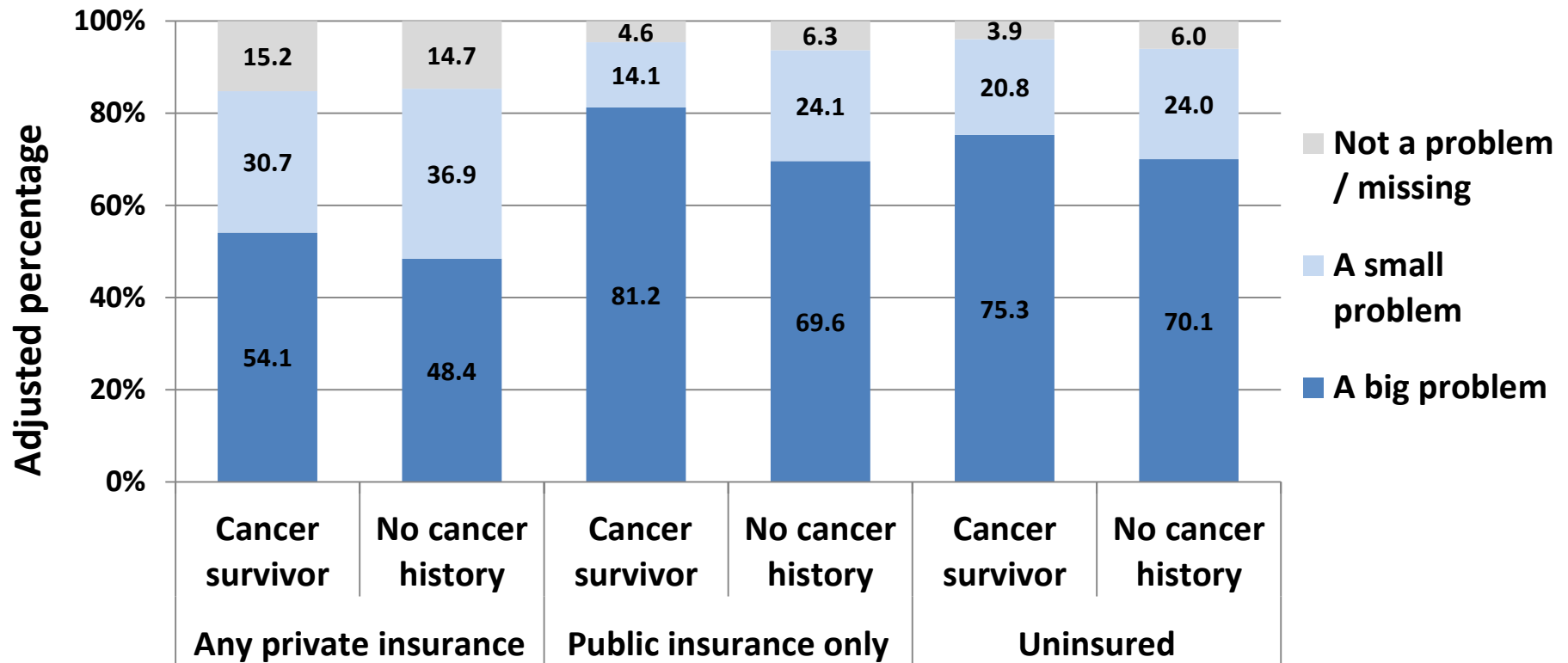


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Impact of Delayed or Lack of Access to Medical Care, by Type of Health Insurance



$p < 0.0001$; Multivariate logistic regression analyses with estimates reported as predicted margins and controlling for the effects of age, number of comorbid conditions, gender, race/ethnicity, marital status.

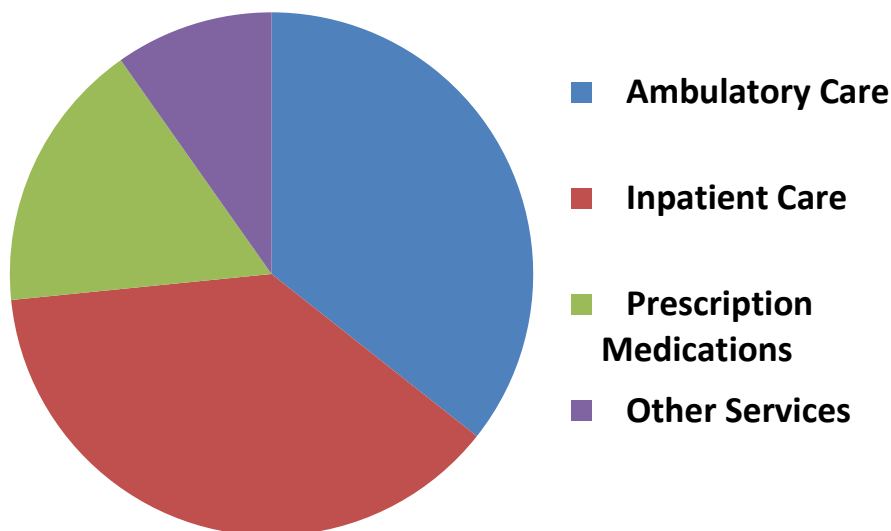
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Mean Annual Expenditures (in 2010 US dollars)

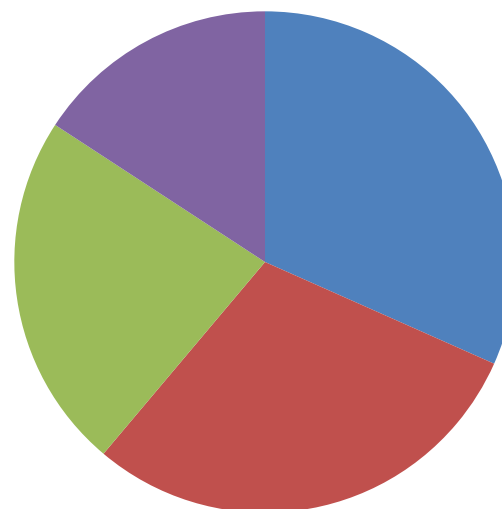
Cancer Survivors

\$8,348 (95% CI: \$6,078- 10,618)



Individuals without a Cancer History

\$4,295 (95% CI: \$4,172-\$4,417)

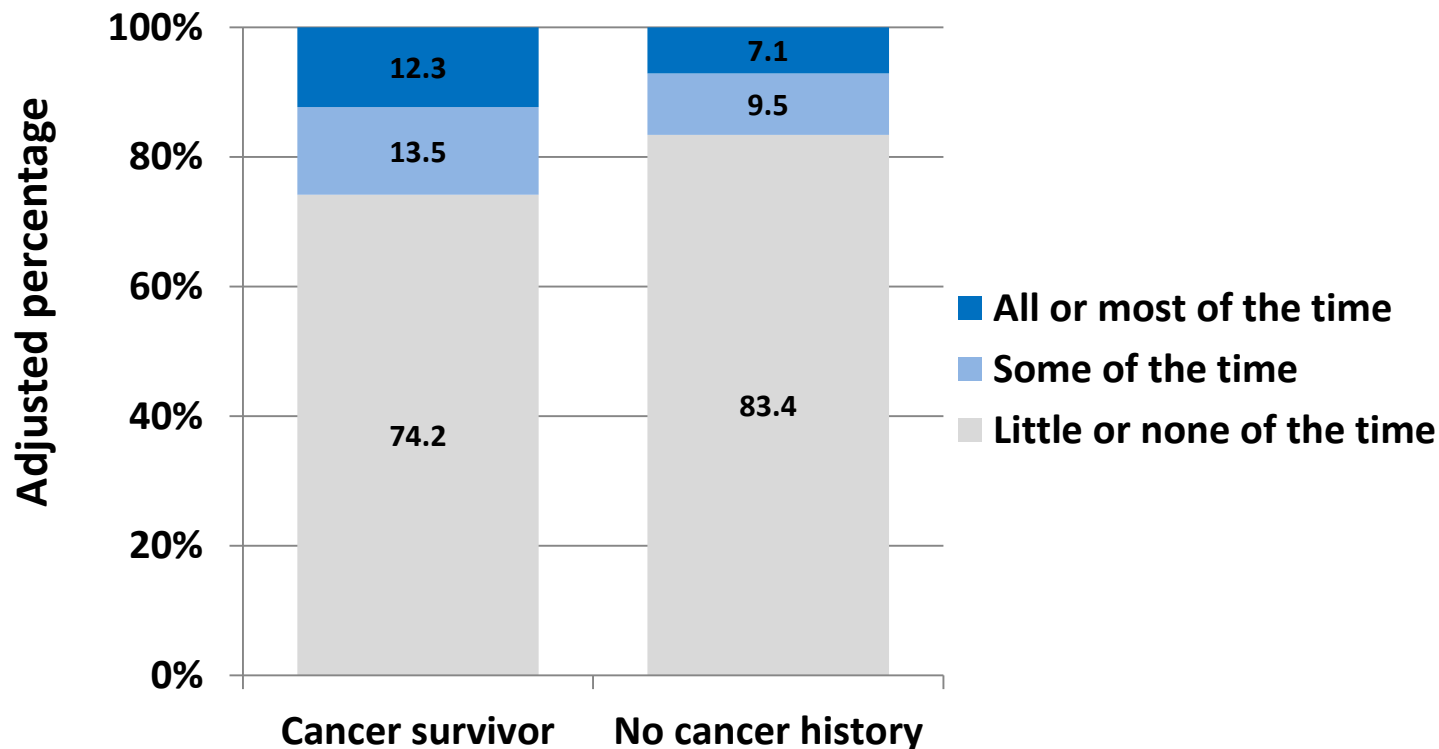


p<0.0001; Generalized linear regression analyses with a gamma distribution and a log link. Estimates reported as predicted margins and controlling for the effects of age, number of comorbid conditions, gender, race/ethnicity.

Data source: 2008-2010 Medical Expenditure Panel Survey

Source: Guy GF, Yabroff KR, et al. The health and economic burden of adolescent and young adult cancer survivorship in the United States.

Limited in Kind of Work or Activities Because of Physical Health in Past 4 Weeks



$p < 0.0001$. Multivariate logistic regression analyses with estimates reported as predicted margins and controlling for the effects of age, number of comorbid conditions, gender, race/ethnicity, marital status. Data source: 2008-2010 Medical Expenditure Panel Survey

Source: Adapted from Dowling EC, Chawla N, Forsythe LP, de Moor J, McNeel T, Rozjabek HM, Ekwueme DU, Yabroff KR. Lost productivity and burden of illness in cancer survivors and individuals with and without other chronic conditions. *Cancer*, in press.

Lost Productivity

	Cancer Survivors	Individuals Without a Cancer History	P-value
	Adjusted estimate (95% CI)	Adjusted estimate (95% CI)	
Percent unable to work due to illness/injury	11.5 (9.5 -13.4)	5.4 (5.1-5.8)	<0.001
Missed work days among employed	4.4 (3.3-5.5)	3.3 (3.1-3.4)	0.02
Lost household productivity days	11.4 (7.4-15.5)	3.8 (3.5-4.2)	<0.001

Regression analyses varied by outcome type. Estimates reported as predicted margins and controlling for the effects of age, number of comorbid conditions, gender, race/ethnicity.

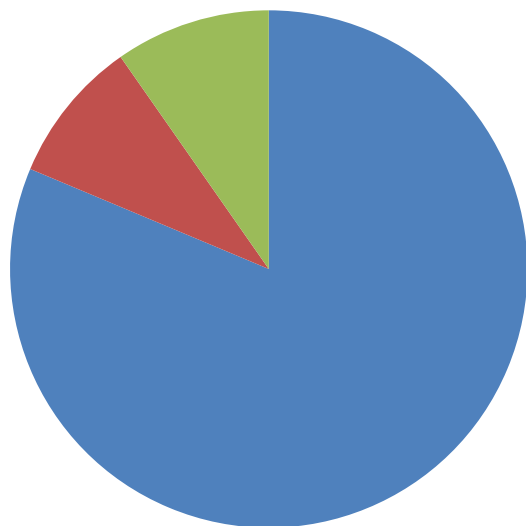
Data source: 2008-2010 Medical Expenditure Panel Survey

Source: Guy GP Jr, Yabroff KR, et al. The health and economic burden of adolescent and young adult cancer survivorship in the United States.

Mean Annual Lost Productivity (in 2010 US dollars)

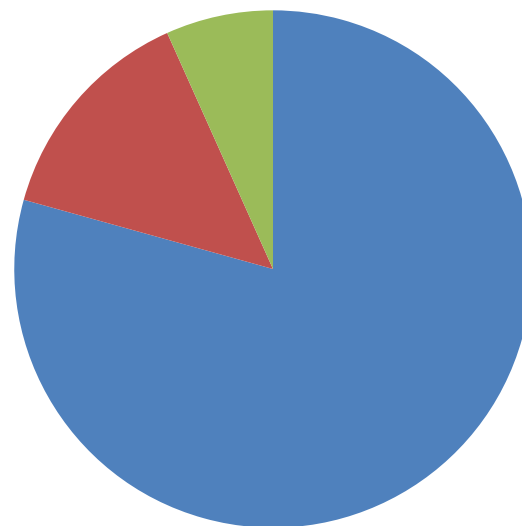
Cancer Survivors

\$4,769 (95% CI: \$3,825-\$5,683)



Individuals without a Cancer History

\$2,296 (95% CI: \$2,164-\$2,458)



- Health related unemployment
- Missed work days among employed
- Lost household productivity

p<0.001; Generalized linear regression analyses with a gamma distribution and a log link. Estimates reported as predicted margins and controlling for the effects of age, number of comorbid conditions, gender, race/ethnicity.

Data source: 2008-2010 Medical Expenditure Panel Survey

Source: Guy GP Jr, Yabroff KR, et al. The health and economic burden of adolescent and young adult cancer survivorship in the United States.

Summary of Findings

- Compared to individuals without a cancer history, survivors of AYA cancers are more likely to:
 - be unable to get or delayed necessary medical care
 - have higher medical expenditures
 - experience greater physical limitations, health-related unemployment and productivity losses
- Disparities in access to care for publicly insured or uninsured survivors of AYA cancers
- Prevalent sample of cancer **survivors**, many 5 or more years after diagnosis. Individuals with short survival cancers under-represented

Considerations when Using the MEPS to Evaluate Outcomes in Cancer Survivors

- Strengths
 - Nationally representative
 - Adults of all ages
 - Comparison group of individuals without cancer
 - Expenditures from all payers, including out-of-pocket
- Limitations
 - Small number with specific cancer or newly diagnosed in any year
 - Information on cancer diagnosis is self-reported, no details about stage, cancer treatment
 - Measures are for relatively short periods, no information on long-term trajectories

Future Directions

- Evaluation of socioeconomic outcomes in survivors with
 - specific cancers
 - specific treatments
- Ongoing evaluation of access to care and aspects of health insurance (e.g., coverage caps, co-pays) with implementation of the Affordable Care Act (ACA)
- Investigation of related topics
 - Financial burden (e.g., medical debt)
 - Impact on caregiver and family
 - Cancer-related morbidity in relation to access, employment and economic outcomes
 - Care coordination

Future Directions

- Greater utilization of existing data , research resources, novel data linkages, and enhancements
 - Cancer Research Network (CRN)
 - Hospital and ambulatory care discharge data linked to registry data
 - Novel linkages (multiple payer and registry, bankruptcy claims and registry)
 - Enhancement of existing surveys with access, productivity, utilization, and expenditure items
 - Supplemental surveys

MEPS *Experiences with Cancer* Survivorship Supplement

- Collaborative effort with NCI, AHRQ, CDC, ACS, OBSSR, **LIVESTRONG** Foundation
- Oversampled households with cancer survivors from the 2010 NHIS (Cancer Control Supplement)
- Added special survey for cancer survivors
- Items related to:
 - Changes in work because of cancer
 - Changes in caregiver work because of cancer
 - Financial burden
 - Limitations in activities because of cancer

MEPS *Experiences with Cancer* Survivorship Supplement

- Survey completed by about 1500 cancer survivors (92% response rate)
- Survey also fielded by LIVESTRONG Foundation with more than 6,000 respondents
- MEPS data publicly available September 2013
- LIVESTRONG Foundation data available by application in 2014

http://meps.ahrq.gov/mepsweb/survey_comp/cncr_prtst_report_2011.shtml

<http://healthservices.cancer.gov/surveys/meps/>

<http://www.livestrong.org/>

Acknowledgements

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Thank You!