

Provision and Discussion of Survivorship Care Plans Among Cancer Survivors: Results of a Nationally Representative Survey of Oncologists and Primary Care Physicians

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Published online ahead of print at www.jco.org on April 21, 2014.

Supported by Contract No. HHSN261200700068C from the National Cancer Institute and by intramural research funds from the American Cancer Society Behavioral Research Center.

The views expressed in this report do not necessarily represent the views of the US Government or the American Cancer Society.

Authors' disclosures of potential conflicts of interest and author contributions are found at the end of this article.

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0732-183X/14/3215w-1578w/\$20.00

DOI: 10.1200/JCO.2013.51.7540

A B S T R A C T

Purpose

Survivorship care planning should involve discussions between providers and cancer survivors to address survivors' needs and optimize adherence. We examined the frequency and factors associated with oncologists' and primary care physicians' (PCPs) reports of provision of written survivorship care plans (SCPs) and discussion of survivorship care recommendations with survivors.

Methods

A nationally representative sample of 1,130 oncologists and 1,020 PCPs was surveyed about survivorship care practices with survivors. Logistic regression models predicted multilevel factors associated with providing SCPs or discussing recommendations with survivors.

Results

Although a majority of oncologists (64%) reported always/almost always discussing survivorship care recommendations with survivors, fewer also discussed who survivors should see for cancer-related and other follow-up care (32%); fewer still also provided a written SCP to the survivor (< 5%). Survivorship care recommendations and provider responsibility were not regularly discussed by PCPs and survivors (12%). Oncologists who reported detailed training about late and long-term effects of cancer were more likely to provide written SCPs (odds ratio [OR], 1.73; 95% CI, 1.22 to 2.44) and discuss survivorship care planning with survivors (OR, 2.02; 95% CI, 1.51 to 2.70). PCPs who received SCPs from oncologists were 9× more likely (95% CI, 5.74 to 14.82) to report survivorship discussions with survivors.

Conclusion

A minority of both PCPs and oncologists reported consistently discussing and providing SCPs to cancer survivors. Training and knowledge specific to survivorship care and coordinated care between PCPs and oncologists were associated with increased survivorship discussions with survivors. These nationally representative data provide a useful benchmark to assess implementation of new efforts to improve the follow-up care of survivors.

J Clin Oncol 32:1578-1585. © 2014 by American Society of Clinical Oncology

INTRODUCTION

There are approximately 14 million cancer survivors in the United States, and this number is projected to increase substantially with the aging of the population and improvement of survival rates.^{1,2} Survivors, most of whom will live years after cancer treatment, have unique health care needs,^{3,4} including prevention or management of chronic and late physical and psychosocial effects of treatment and comorbid conditions. Survivorship care planning has been proposed as a way to meet these needs.⁴

The Institute of Medicine report "From Cancer Patient to Cancer Survivor: Lost in Transition" recommends that all survivors completing primary treatment receive a survivorship care plan (SCP), including a written treatment summary and an individualized follow-up plan, from their oncology provider.⁴ Recommendations suggest that survivorship care planning should also include discussions with survivors about care recommendations and delineation of which provider (eg, oncologist, primary care physician [PCP], or other specialist) is responsible for overseeing cancer-related and other medical

follow-up.^{4,5} By 2015, the American College of Surgeons Commission on Cancer will require provision of written SCPs to survivors on treatment completion.⁶ Other major cancer organizations also promote SCPs.^{5,7,8} The language surrounding these recommendations, standards, and resources all suggest their intended target is the survivor. Involving survivors in survivorship care planning may promote shared decision making, self-management, and patient engagement, which are associated with positive patient outcomes, including adherence to treatment recommendations.⁹⁻¹¹

Because many survivors transition from oncologists to PCPs for a large portion of their post-treatment care,¹² optimal communication about survivorship care planning with survivors should also involve the survivor's PCP.¹³ Cancer survivors look to follow-up care plans to aid in care coordination and reduce conflicting advice.³ PCP-survivor discussions of survivorship care planning may increase the likelihood that survivors receive comprehensive and nonduplicative follow-up care.^{14,15}

Despite recommendations and the presumed utility of SCPs, they have not been universally adopted. Of 53 National Cancer Institute cancer centers, only 43% report implementing SCPs for some or all of their cancer survivors.³ Many recently diagnosed survivors report not receiving treatment summaries (62%) or written follow-up instructions (42%).¹⁶ National estimates of discussions of SCPs with the survivor by practicing oncologists or PCPs are lacking. We used a nationally representative survey of oncologists and PCPs to assess the self-reported frequency of: oncologists' provision of written SCPs to survivors, oncologists' discussion of care recommendations and delineation of provider responsibility for survivorship care with survivors, and PCPs' discussion of care recommendations and provider responsibility with survivors. Additionally, we explored multilevel factors associated with providing SCPs or discussing survivorship care with survivors, including factors related to individual physicians, perception of difficulties providing care to survivors, care coordination with other physicians, and practice environment.

METHODS

Survey and Sample Description

This study used data from the Survey of Physicians' Attitudes Regarding the Care of Cancer Survivors (SPARCCS), a 2009 nationally representative mailed survey completed by 1,130 oncologists and 1,072 PCPs about practices and attitudes regarding post-treatment follow-up care for breast and colon cancer survivors. Approval was obtained from the National Institutes of Health Human Research Protections Program and the US Office of Management and Budget. Most survey items were adapted from previous physician surveys.¹⁷⁻²⁰ For the complete survey, visit <http://healthservices.cancer.gov>; detailed methods have been published elsewhere.²¹

Eligible physicians were identified from the American Medical Association (AMA) Physician MasterFile using stratified sampling across specialty, age, sex, census region, metropolitan statistical area, and mail-undeliverable status. We excluded PCPs who reported never having seen a breast or colon cancer survivor in clinical practice ($n = 51$) or who reported practicing outside primary care ($n = 1$). The absolute response rate was 57.5%; responders did not significantly differ from nonresponders on any variables examined.²¹

Measures

Oncologists reported how often they provided survivors with a written SCP summarizing past treatments and recommendations for future care and surveillance. Additionally, to assess discussion of follow-up care with survivors, both PCPs and oncologists responded to three items: one regarding

discussion of survivorship care recommendations ("How often do you have a specific discussion with the patient regarding recommendations for future care and surveillance?") and two regarding delineation of provider responsibilities for survivorship care ("How often do you discuss with your patient which physician will follow them for their cancer?" and "How often do you discuss with your patient which physician will handle any other medical issues?").²² Responses were dichotomized as always/almost always versus less than always.

Four outcome variables were created: (1) oncologists' provision of written SCPs to survivors; (2) oncologists' discussion of recommendations and delineation of provider responsibility for survivorship care (cancer-related and other medical issues) with survivors; (3) PCPs' discussion of recommendations and provider responsibility with survivors; and (4) oncologists' provision of a written SCP and discussion of recommendations/responsibilities for survivorship care (combination of outcomes one and two). Because of the small number of oncologists who reported both providing a written SCP and discussing recommendations/responsibilities for survivorship care with survivors, we examined prevalence but did not model outcome four. Outcome variables were dichotomized as reporting always/almost always on all questions versus less than almost always for any question.

Physician, Survivor, Care Coordination, and Practice Environment Factors

To comprehensively assess factors associated with survivorship care planning at multiple levels, we included factors chosen a priori representing: (1) physicians; (2) difficulties encountered in care interactions with survivors; (3) follow-up care coordination with other physicians; and (4) practice environment, as suggested by the social ecologic model.²³⁻²⁵

Physician factors. Physicians indicated their race/ethnicity, specialty, frequency with which they ordered tests or treatments for cancer survivors to protect from malpractice litigation, and training regarding the late and long-term effects of cancer.²¹ PCPs reported frequency of problems caring for survivors related to inadequate knowledge; this item was not included for oncologists, given the limited distribution of responses. Physician age and sex were obtained from the AMA MasterFile.

Difficulties encountered in care interactions. Physicians reported the frequency of encountering the following difficulties when caring for breast and colon cancer survivors: "patients refuse or do not adhere to recommended care"; "patients have language barriers that interfere with communication"; "patients are unable to pay (or lack insurance coverage) for follow-up care"; and "patients request more aggressive cancer surveillance or testing than I would recommend."

Follow-up care coordination factors. Physicians indicated their preferred model of survivorship care,^{17,21} categorized according to preferred role: own responsibility, shared responsibility, or someone else has responsibility.^{26,27} Physicians indicated the extent to which the following problems were encountered while caring for survivors: difficulties transferring patient care responsibilities, uncertainty about which physician is providing survivors' general preventive health care, concerns over missed care, and concerns over duplicate care.²⁸ PCPs also reported the frequency of receipt of written SCPs from survivors' oncologists.^{22,27}

Practice environment factors. Providers reported the overall number of patients seen per week, number of patients with breast or colon cancer seen, percentage of patients uninsured/insured by Medicaid, number of physicians in their practice, medical records system used, percentage of time spent in patient care, and whether they are paid by salary based on productivity. Metropolitan statistical area was obtained from the AMA MasterFile.

Data Analysis

All analyses were conducted in SUDAAN (version 10.0.1; <http://www.rti.org/sudaan/>) and incorporated sampling weights to account for complex survey design and nonresponse. Estimates represent the entire population of practicing medical oncologists and PCPs. Because analyses were based on multiple levels of influence as indicated by the social ecological theory, three stepwise multiple logistic regressions were used to model factors associated with: (1) oncologists' provision of written SCPs to survivors; (2) oncologists' discussion of recommendations and provider responsibility for survivorship

care with survivors; and (3) PCPs' discussion of recommendations and provider responsibility for survivorship care with survivors. To maximize the amount of variance explained while simultaneously minimizing the number of variables in the model, potential covariates were entered into regression models in four stepwise blocks (representing levels of social ecological influence: physician factors, difficulties encountered in care, care coordination factors, practice environment factors). For each block, the least significant items were iteratively removed until all remaining variables in the block were significant. Significant variables from previous blocks that became nonsignificant when additional blocks were entered were retained in the model. Wald statistics tested the contribution of individual factors in the model building and final model.

RESULTS

Oncologists were slightly younger and more likely to be Asian and male compared with PCPs (Table 1). PCPs reported less training regarding late or long-term effects of cancer treatment, greater preference for shared care or someone else taking responsibility for survivorship care, less use of electronic medical records, and smaller practice sizes. PCPs spent a greater percentage of time on patient care but saw on average 37 patients with breast or colon cancer per year, as opposed to 35 per week seen by oncologists.

Frequency of Discussion of Survivorship Care and Provision of Written SCPs

Nearly two thirds of oncologists reported always/almost always discussing survivorship care recommendations with survivors (64.0%; 95% CI, 61.3 to 66.7; Fig 1). Approximately half reported always/almost always discussing with survivors which physician would follow them for their cancer care (50.0%; 95% CI, 46.8 to 53.2) or which physician would handle other medical issues (42.2%; 95% CI, 38.9 to 45.6). However, only approximately one third of oncologists reported always/almost always discussing with survivors recommendations for survivorship care and provider responsibility for cancer and other medical follow-up (31.7%; 95% CI, 28.8 to 34.6).

Less than 10% of oncologists reported always/almost always providing a written SCP to survivors (9.6%; 95% CI, 8.0 to 11.5). Moreover, less than 5% of oncologists reported always/almost always giving survivors a written document and having discussions of survivorship recommendations and provider responsibility with survivors (4.8%; 95% CI, 3.6 to 6.4).

For PCPs, 21% (95% CI, 18.5 to 23.8) reported always/almost always discussing recommendations for survivorship care with survivors; 34% (95% CI, 31.1 to 37.3) reported always/almost always discussing with survivors which physician would follow them for their cancer; 33% (95% CI, 30.4 to 35.8) reported discussing which physician would handle other medical issues. However, only 12% (95% CI, 10.0 to 14.1) of PCPs reported always/almost always discussing all three items with survivors.

Factors Associated With Oncologists' Provision of SCPs and Discussion of Recommendations and Provider Responsibilities

Oncologists who reported detailed training regarding late and long-term effects of cancer were more likely to report always/almost always providing written SCPs to survivors (odds ratio [OR], 1.73; 95% CI, 1.22 to 2.44; Table 2). Compared with non-Hispanic white

oncologists, those of other racial/ethnic groups were more likely to provide written SCPs to survivors (Wald $F = 8.80$; $P < .001$). Oncologists who reported that their patients requested more aggressive cancer surveillance or testing than they would recommend were 47% less likely to provide written SCPs to survivors than oncologists who rarely or never experienced this problem (95% CI, 0.33 to 0.84).

Oncologists who received detailed training about late and long-term effects of cancer were 2× more likely to always/almost always discuss recommendations and provider responsibilities with survivors than oncologists who received some or no training (95% CI, 1.51 to 2.70; Table 3). Oncologists who preferred a shared model of survivorship care (OR, 0.64; 95% CI, 0.41 to 0.98) and those who reported uncertainty about who should provide general preventive care (OR, 0.74; 95% CI, 0.56 to 0.99) were less likely to discuss recommendations and responsibilities for follow-up care with survivors. Asian oncologists were 60% more likely to report always/almost always having these discussions with survivors (95% CI, 1.13 to 2.27).

Factors Associated With PCPs' Discussion of Recommendations and Provider Responsibilities

PCPs who always/almost always received both a treatment summary and follow-up care plan from survivors' oncologists were more than 9× more likely to have discussions about survivorship care with survivors than those PCPs who did not always receive these documents (95% CI, 5.74 to 14.82; Table 4). PCPs who reported inadequate knowledge or training to manage the problems of survivors were 43% less likely (95% CI, 0.34 to 0.96) to have these discussions with survivors. Female PCPs were twice as likely to have these discussions with survivors than male PCPs (95% CI, 1.26 to 3.27). Older PCPs were more likely to report always/almost always discussing both survivorship care recommendations and responsibilities with survivors (OR, 1.04; 95% CI, 1.01 to 1.06). PCPs who reported a high percentage of time spent in patient care were 42% less likely to have these discussions with survivors compared with those who reported a low percentage of time spent in patient care (95% CI, 0.35 to 0.98). PCPs who saw more than 35 breast or colon cancer survivors per year were 46% less likely to always/almost always have these discussions with survivors than those who saw fewer than 15 survivors per year (95% CI, 0.33 to 0.90).

DISCUSSION

To our knowledge, this study represents the first attempt using a nationally representative sample of providers to estimate prevalence and model socioecological predictors of oncologist-reported provision of written SCPs to survivors, as well as oncologist- and PCP-reported discussions with survivors of recommendations and provider responsibilities for survivorship care. Although a majority of oncologists reported always/almost always discussing survivorship care recommendations with survivors, far fewer reported discussing either delineation of provider responsibility for survivorship care or providing written care plans. Moreover, a meager 5% of oncologists reported always/almost always doing all three, despite these activities increasingly becoming the expected standard of care.⁶ Discussions of survivorship care recommendations and provider responsibility are also not regularly occurring between PCPs and survivors. To achieve patient-centered survivorship care and promote higher-quality care,²⁹

Provision and Discussion of Survivorship Care Plans Among Survivors

Table 1. Characteristics of Oncologists and PCPs

Characteristic	PCPs			Oncologists			P
	No.	%	95% CI	No.	%	95% CI	
Physician Characteristics							
Sex							< .001
Male	679	64.2	61.5 to 66.7	837	72.9	70.4 to 75.2	
Female	341	35.8	33.3 to 38.5	293	27.1	24.8 to 29.6	
Race/ethnicity							< .001
Non-Hispanic white	710	70.7	67.7 to 73.5	726	62.7	60.2 to 65.1	
Asian	174	15.1	13.2 to 17.3	299	28.2	25.9 to 30.6	
Other	136	14.2	11.9 to 16.9	105	9.1	7.7 to 10.7	
Age, years							.003
Mean		48.3			47.2		
SE		0.3			0.2		
Specialty							—
General internal medicine	480	37.8	36.2 to 39.4	—	—	—	
Family medicine	458	43.4	42.0 to 44.9	—	—	—	
Obstetrics-gynecology	82	18.7	17.3 to 20.3	—	—	—	
Medical oncology	—	—	—	553	47.8	44.6 to 50.9	
Hematology/oncology	—	—	—	566	51.3	48.1 to 54.4	
Other (hematology, radiation oncology, surgical oncology)	—	—	—	11	1.0	0.6 to 1.7	
Received training regarding late or long-term effects of cancer treatment							< .001
No	329	34.3	31.1 to 37.7	83	7.1	5.9 to 8.5	
Yes, somewhat	627	60.2	56.7 to 63.6	637	56.7	53.7 to 59.6	
Yes, in detail	48	4.2	3.1 to 5.8	406	35.9	33.1 to 38.8	
Order tests and treatments to protect from malpractice litigation							< .001
Never or rarely	473	46.5	43.3 to 49.6	663	58.7	55.6 to 61.7	
Sometimes, often, or always/almost always	500	48.6	45.3 to 51.9	445	39.4	36.5 to 42.4	
Problems caring for cancer survivors related to inadequate knowledge							< .001
Never or rarely	545	51.1	47.4 to 54.8	968	85.8	83.7 to 87.7	
Sometimes, often, or always/almost always	430	44.2	40.8 to 47.6	116	10.0	8.3 to 12.1	
Difficulties Encountered in Care Interactions							
Patient nonadherence							.086
Never or rarely	385	39.4	36.0 to 42.9	413	36.2	33.0 to 39.6	
Sometimes, often, or always/almost always	613	58.1	54.6 to 61.6	700	62.3	58.9 to 65.6	
Language barriers							.011
Never or rarely	797	77.4	74.2 to 80.3	826	72.7	69.8 to 75.5	
Sometimes, often, or always/almost always	195	19.5	16.6 to 22.9	281	25.2	22.3 to 28.3	
Patients unable to pay							.741
Never or rarely	346	34.2	31.0 to 37.7	379	33.7	30.6 to 36.9	
Sometimes, often, or always/almost always	647	62.5	58.9 to 66.0	726	63.7	60.5 to 66.8	
Patients request more aggressive surveillance							< .001
Never or rarely	451	44.6	41.7 to 47.6	283	24.3	21.9 to 26.9	
Sometimes, often, or always/almost always	529	50.7	47.7 to 53.7	833	74.4	71.8 to 76.8	
Follow-Up Care Coordination							
Preferred model of survivorship care							< .001
Shared responsibility	407	37.3	34.2 to 40.5	182	16.0	14.1 to 18.1	
My responsibility	103	9.3	7.7 to 11.3	643	56.5	53.1 to 59.7	
Someone else's responsibility	428	45.8	42.7 to 48.9	263	23.9	21.3 to 26.6	
Difficulties transferring patient care responsibilities							< .001
Never or rarely	577	58.7	55.4 to 61.9	405	36.4	33.4 to 39.5	
Sometimes, often, or always/almost always	423	39.3	36.2 to 42.5	707	62.1	59.1 to 65.0	
Uncertainty about who should provide general preventive care							< .001
Never or rarely	686	65.0	61.8 to 68.2	637	56.4	53.4 to 59.4	
Sometimes, often, or always/almost always	311	32.3	29.0 to 35.7	470	41.4	38.5 to 44.4	
Concern over missed care							.128
Never or rarely	414	41.3	38.2 to 44.5	437	39.0	36.1 to 42.0	
Sometimes, often, or always/almost always	555	53.7	50.6 to 56.8	666	58.6	55.6 to 61.7	
Concern over duplicate care							< .001
Never or rarely	502	50.8	47.4 to 54.1	483	43.2	40.2 to 46.3	
Sometimes, often, or always/almost always	491	46.2	42.9 to 49.5	628	55.0	51.9 to 58.1	

(continued on following page)

Table 1. Characteristics of Oncologists and PCPs (continued)

Characteristic	PCPs			Oncologists			P
	No.	%	95% CI	No.	%	95% CI	
Receive SCPs from oncologists							
Less than always/almost always	873	85.1	82.2 to 87.7	—	—	—	—
Always/almost always	133	13.4	11.0 to 16.1	—	—	—	—
Practice Environment							
No. of breast and colon cancer survivors seen per year (PCPs) or per week (oncologists)							—
Mean		37.2			47.2		
SE		1.4			0.8		
Percent of time spent in patient care							< .001
Mean		88.7			82.1		
SE		0.4			0.6		
Medical record system used							< .001
Paper records	388	40.0	37.1 to 43.0	247	21.7	19.2 to 24.5	
Partial or transitioning to electronic records	288	27.8	24.8 to 31.0	498	43.6	40.8 to 46.4	
Full electronic records	327	30.7	27.7 to 33.8	375	33.4	30.7 to 36.3	
Percentage of patients uninsured/insured by Medicaid							.030
≤ 10	382	37.1	34.0 to 40.3	361	31.1	28.4 to 33.9	
≥ 11	606	60.2	56.8 to 63.4	699	61.8	58.6 to 64.8	
No. of physicians in practice							< .001
1	253	24.1	21.5 to 26.9	122	10.1	8.4 to 12.1	
2-5	422	42.8	39.4 to 46.2	436	39.2	36.4 to 42.1	
6-15	223	21.9	19.1 to 24.9	339	29.6	26.9 to 32.4	
≥ 16	103	9.5	7.7 to 11.6	212	19.2	17.0 to 21.6	
Salary based on productivity							.341
Yes	355	33.5	30.3 to 36.8	387	34.0	31.2 to 37.0	
No	635	63.7	60.4 to 66.9	666	59.2	56.2 to 62.0	
MSA*							.012
Population ≥ 1 million	622	61.5	59.1 to 63.8	728	65.6	63.1 to 67.9	
All others	398	38.5	36.2 to 40.9	402	34.4	32.1 to 36.9	

Abbreviations: MSA, metropolitan statistical area; PCP, primary care physician; SCP, survivorship care plan.
*From American Medical Association MasterFile.

gaps in communicating with and, ideally, engaging survivors in the care planning process must be addressed.

Beyond providing a national benchmark for physicians' communication with survivors about survivorship care, this study suggests factors associated with these behaviors that may serve as targets for intervention. Results across the three models suggest two areas in particular that could increase discussions of survivorship care with

survivors: physician training and care coordination. PCPs who reported inadequate knowledge or training to manage survivors' needs and oncologists who lacked detailed training regarding late and long-term effects of cancer were significantly less likely to report discussing

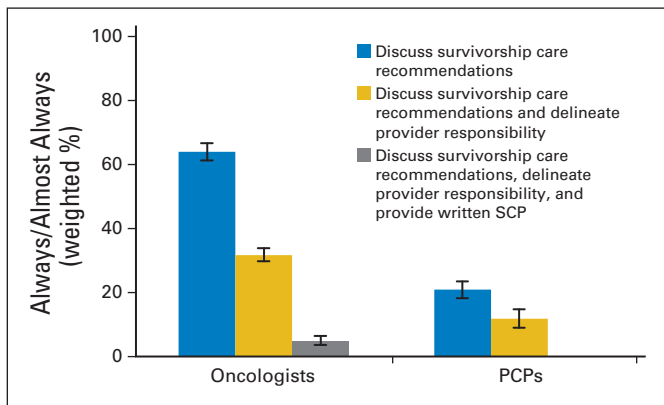


Fig 1. Oncologists and primary care physicians (PCPs) reporting discussion of survivorship care and provision of survivorship care plans (SCPs) to survivors.

Table 2. Factors Associated With Oncologists Reporting Always/Almost Always Providing Written SCPs to Survivors (n = 108)

Factor	OR	95% CI	Wald F	P
Race/ethnicity			8.80	< .001
Non-Hispanic white	Ref			
Asian	2.75	1.64 to 4.60		< .001
Other*	2.69	1.35 to 5.35		.005
Training regarding late and long-term effects of cancer			9.90	.002
No or yes, somewhat	Ref			
Yes, in detail	1.73	1.22 to 2.44		.002
Patients request more aggressive surveillance			7.60	.007
Never or rarely	Ref			
Sometimes, often, or always/almost always	0.53	0.33 to 0.84		.007

Abbreviations: OR, odds ratio; SCP, survivorship care plan.
*Other includes Hispanic white, non-Hispanic black, and multiple race/ethnicity.

Table 3. Factors Associated With Oncologists Reporting Always/Almost Always Discussing Survivorship Care Recommendations and Delineation of Provider Responsibility With Survivors (n = 356)

Factors	OR	95% CI	Wald F	P
Age	1.01	1.00 to 1.03		.080
Race/ethnicity			3.62	.030
Non-Hispanic white	Ref			
Asian	1.60	1.13 to 2.27		.008
Other*	1.04	0.63 to 1.70		.887
Sex			2.86	.094
Male	Ref			
Female	1.32	0.95 to 1.82		.094
Training regarding late and long-term effects of cancer			22.86	< .001
No or yes, somewhat	Ref			
Yes, in detail	2.02	1.51 to 2.70		< .001
Preferred model of survivorship care			2.25	.110
Shared responsibility	0.64	0.41 to 0.98		.040
Own responsibility	Ref			
Someone else's responsibility	0.83	0.57 to 1.21		.322
Uncertainty about who should provide general preventive care			4.34	.040
Never or rarely	Ref			
Sometimes, often, or always/almost always	0.74	0.56 to 0.99		.040

Abbreviation: OR, odds ratio.

*Other includes Hispanic white, non-Hispanic black, and multiple race/ethnicity.

Table 4. Factors Associated With PCPs Reporting Always/Almost Always Discussing Recommendations and Delineation of Provider Responsibility With Survivors (n = 122)

Factor	OR	95% CI	Wald F	P
Age	1.04	1.01 to 1.06		.006
Sex			8.69	.004
Male	Ref			
Female	2.03	1.26 to 3.27		.004
Inadequate knowledge or training to manage problems of cancer survivors			4.57	.035
Never or rarely	Ref			
Sometimes, often, or always/almost always	0.57	0.34 to 0.96		.035
Receive SCP from oncologist			86.23	< .001
Less than always/almost always	Ref			
Always/almost always	9.22	5.74 to 14.82		< .001
No. of patients with breast or colon cancer seen per year			3.00	.054
0-14	Ref			
15-34	0.75	0.39 to 1.41		.363
≥ 35	0.54	0.33 to 0.90		.017
Percentage of time spent in patient care*			4.31	.040
Low	Ref			
High	0.58	0.35 to 0.98		.040

Abbreviations: OR, odds ratio; PCP, primary care physician; SCP, survivorship care plan.

*Median split of percentage of time spent on patient care reported by PCPs.

survivorship care with survivors. Physicians may benefit from expanded medical education opportunities specifically focused on the needs of cancer survivors or establishment of best practice guidelines to direct care.^{5,30} If confident in their expertise, physicians may feel more comfortable or motivated to offer a written SCP and discuss survivorship care with survivors.

Regarding care coordination, PCPs who received SCPs from oncologists were more than 9× more likely to report discussions with survivors. This finding is worth emphasis. Prior studies have shown that PCPs often report uncertainty about follow-up care for survivors and rate the transition of care from oncologists as poor.^{28,31} Unfamiliarity with post-treatment surveillance guidelines may contribute to the lower surveillance rates documented among survivors seen by PCPs relative to oncologists.³²⁻³⁵ However, only 20% of oncologists report consistently providing treatment summaries and follow-up care plans to survivors' PCPs.²⁷ Our study suggests that providing an SCP to the PCP may increase the likelihood of the PCP discussing follow-up care plans with the survivor and could inform the provision of timely and appropriate care. Oncologists' attitudes about models of survivorship care also seemed to be associated with the likelihood of discussing survivorship planning and provision of SCPs. Specifically, those who were uncertain about who should provide general preventative care to survivors and those who preferred nononcologist-led models of survivorship care had less frequent discussions of survivorship care planning with survivors. Models of survivorship care planning that clearly outline the coordination between oncologists and PCPs may also improve communication with survivors.

Demographic and practice characteristics associated with discussing survivorship care with survivors suggest populations in which these interventions may be particularly salient. For example, male PCPs and oncologists were less likely to discuss survivorship care with survivors. This finding is consistent with prior literature showing that female providers typically have longer and more **patient-centered communication** with patients.³⁶⁻³⁸ In addition, PCPs who saw a large number of cancer survivors per year and those who spent a larger portion of their time in patient care were less likely to discuss recommendations and responsibilities with survivors. Identifying mechanisms driving this association is a necessary next step toward developing effective interventions for PCPs who see a large number of survivors. Oncologists who reported not providing written SCPs also reported having patients who requested more aggressive follow-up than they would recommend. Future research should investigate if SCPs help survivors understand why specific tests are not necessary and thus have the potential to reduce inappropriate or overuse of these procedures.

Although this study has many strengths, including a nationally representative sample of PCPs and oncologists, there are a number of notable limitations. It is a survey-based self-report of practices concerning breast and colon cancer survivors; however, given the reportedly low percentage of oncologists who reported both providing SCPs and discussing survivorship care, it is unlikely respondents were motivated to provide socially desirable responses. Because of the cross-sectional design, we were unable to differentiate cause and effect of the associations, and the results are mainly limited to hypothesis generation. Furthermore, some significant associations must be interpreted

with caution, because they were driven by relatively small groups (eg, only approximately 5% of oncologists reported extensive training in late effects). Our survey included data on training and care coordination; future research should investigate other potential strategies for improving the discussion and provision of survivorship care, such as incorporation of health information technology and coordination among medical teams. It is important for future studies to further elucidate these associations as treatment patterns change.

These data also do not allow us to assess quality, appropriateness, or comprehensibility of the SCPs or discussions, nor can we determine whether conversations were truly patient centered, with shared decision making and addressing of survivor preferences. Care recommendations consistent with patient preferences are associated with better patient engagement in care, adherence to recommendations, and self-management.^{39,40} An important next step is looking beyond measurement of frequency to assess the quality and content of these documents and discussions and their impact on quality of care, physician behaviors, and survivor health outcomes.

These nationally representative provider-reported data suggest that oncologists rarely reported consistently providing written SCPs to survivors and that oncologists and PCPs often failed to discuss survivorship care recommendations and delineation of provider responsibility for follow-up care with survivors. These data provide a useful

benchmark to assess implementation of new mandates affecting the care of cancer survivors. The next step is to develop intervention studies to test the hypothesis that improved care coordination and enhanced physician survivorship training will increase the frequency of survivorship care discussions and downstream consequences, such as survivor adherence to care recommendations, quality of life, and survival.

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

The author(s) indicated no potential conflicts of interest.

AUTHOR CONTRIBUTIONS

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GLOSSARY TERMS

patient-centered communication (PCC): communication that helps clinicians provide care according to the patient's values, needs, and preferences and that allows patients to provide input and participate actively in decisions regarding their health and health care. Patient-centered communication has six critical functions: fostering healing relationships, exchanging information, making decisions, responding to emotions, managing uncertainty, and enabling patient self-management.