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BRIEF REPORT

Nearly All Cancer Survivors Return to Primary Care

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Background: **During cancer treatments, patients often defer primary care and comorbidity management, which may not be optimal for overall health when patients transition into survivorship. We sought to quantify primary care utilization among cancer survivors who are ≥2 years post cancer treatments.**

Methods: **951 cancer survivors were included in this national, prospective cohort study using the Regional Geographic and Racial Differences in Stroke (REGARDS) data.**

Results: **Nearly all (91.6%) cancer survivors had at least 1 annual PCP visit and most (54.6%) had a PCP as their dominant provider.**

Conclusion: **These findings underscore the urgent need for smooth handoffs from oncology back to primary care. (J Am Board Fam Med 2022;35:827–832.)**

Keywords: **Cancer Survivors, Patient Handoff, Primary Health Care, Prospective Studies**

Introduction

During active cancer treatments, patients often exclusively see oncologists and other cancer care providers, deferring their primary care and comorbidity management.[1] While this may be understandable during the acute cancer treatment phase, it may not be optimal for overall health when a patient transitions into survivorship. Among cancer patients who survive 5+ years from diagnosis, cardiovascular disease, rather than cancer, is the leading cause of death.[2–5]

Nearly 70% of cancer patients have least 1 co-occurring chronic medical condition.[6] Prevalence of comorbidities in combination with direct cardiotoxic effects of certain cancer therapies[7] may put cancer patients at increased risk for poor noncancer outcomes that could benefit from attention by a primary care provider (PCP). Prior reports show that cancer survivors who exclusively see oncologists are less likely to receive noncancer care (eg, cholesterol screening, influenza vaccinations, and bone densitometry) compared with survivors who were also cared for by PCPs.[8]

Previous studies have documented lack of care coordination between oncology and primary care at the conclusion of cancer treatments.[1] PCPs and oncologists caring for cancer patients have reported that lack of coordination between the 2 specialties presented "substantial barriers" to effectively managing patients.[9] However, the proportion of cancer survivors who return to primary care is not yet known. If the number of cancer survivors needing a handoff to primary care is large, it would suggest that systematic improvements in oncology-to-PCP handoffs are needed. We sought to describe primary care utilization among a population-based

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group of cancer survivors ≥2 years after the conclusion of cancer treatments.

Methods

Study Design, Population, and Data

We conducted a national, prospective cohort study using the Regional Geographic and Racial Differences in Stroke (REGARDS)[10] study data. Between 2003 to 2007, REGARDS recruited 30,239 individuals ≥45 years of age and observation is ongoing. Among adults who gave consent, REGARDS was linked to Medicare fee-for-service claims.[11] For this study, we used baseline REGARDS data collected from 2005 to 2007 and Medicare claims for the first 12 months after the baseline survey. This study was approved by the Institutional Review Boards at the participating institutions. All participants provided written informed consent.

Cohort

There were 20,403 REGARDS participants linked to Medicare. Of those, we included adults who: 1) were ≥65 years old, 2) had continuous fee-for-service coverage for 365 days after their baseline survey, 3) did not have end-stage renal disease, and 4) had a self-reported history of cancer and had completed treatments ≥2 years ago.

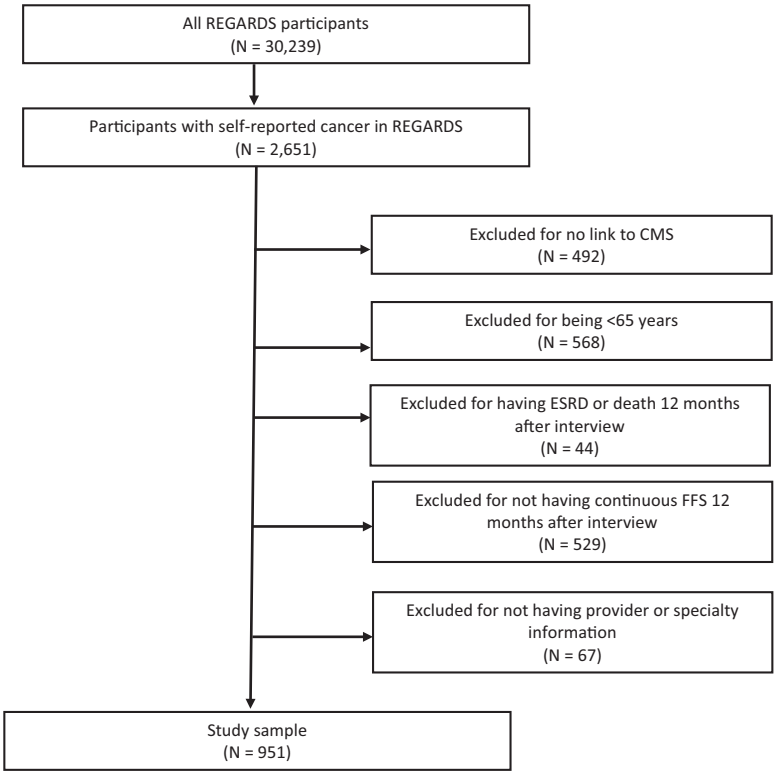
Statistical Analyses

We examined ambulatory care visit patterns among cancer survivors in the 12 months after baseline REGARDS survey. We described median and interquartile ranges (IQR) of visits and providers. Then we described the specialty of the most frequently seen provider, which we call the "dominant provider." We categorized the dominant provider as primary care versus not. We compared differences in socio-demographics, lifestyle, and comorbid conditions between those whose dominant provider was in primary care to those whose dominant provider was not.

Results

We included 951 cancer survivors who were ≥2 years since receiving cancer treatments (Figure 1). The

Figure 1. Exclusion cascade for sample derivation.



Key: REGARDS, Reasons for Geographic and Racial Differences in Stroke; CMS, Centers for Medicare & Medicaid Services; ESRD, End-Stage Renal Disease; FFS, Fee-for-service.

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Table 1. Cohort Characteristics Between Cancer Survivors With and Without a Primary Care Dominant Provider

Category	Primary Care Dominant (n = 519)	Non-Primary Care Dominant (n = 432)	P value
Age at baseline (median [IQR])	73 [68 to 78]	74 [69 to 78]	0.155
Race			0.376
Black	145 (27.9%)	132 (30.6%)	
White	374 (72.1%)	300 (69.4%)	
Gender			0.629
Female	219 (42.2%)	189 (43.8%)	
Male	300 (57.8%)	243 (56.2%)	
Annual household income			0.213
less than $20k	101 (19.5%)	85 (19.7%)	
$20k-$34k	140 (27.0%)	136 (31.5%)	
$35k-$74k	170 (32.8%)	114 (26.4%)	
$75k and above	45 (8.7%)	35 (8.1%)	
Missing	63 (12.1%)	62 (14.4%)	
Highest level of education			0.324
Less than high school	63 (12.1%)	68 (15.7%)	
High school graduate	124 (23.9%)	101 (23.4%)	
Some college	143 (27.6%)	116 (26.9%)	
College graduate and above	188 (36.2%)	146 (33.8%)	
Relationship status			0.353
Married	318 (61.3%)	245 (56.7%)	
Unmarried	201 (38.7%)	187 (43.3%)	
Geographic region			0.569
Belt	162 (31.2%)	122 (28.2%)	
Buckle	45 (8.7%)	42 (9.7%)	
Non-belt	312 (60.1%)	268 (62.0%)	
Area of residence			0.489
Missing	52 (10.0%)	35 (8.1%)	
Rural (<=25% Urban)	39 (7.5%)	25 (5.8%)	
Mixed (25 to 75% Urban)	48 (9.2%)	39 (9.0%)	
Urban (>=75% Urban)	380 (73.2%)	333 (77.1%)	
Physical activity			0.390
None	197 (38.0%)	159 (36.8%)	
1 to 3 times per week	176 (33.9%)	133 (30.8%)	
4 or more per week	134 (25.8%)	127 (29.4%)	
Alcohol consumption			0.515
None	312 (60.1%)	248 (57.4%)	
Moderate	170 (32.8%)	156 (36.1%)	
Heavy	24 (4.6%)	17 (3.9%)	
Smoking status			0.673
Never	207 (39.9%)	160 (37.0%)	
Past	268 (51.6%)	234 (54.2%)	
Current	41 (7.9%)	35 (8.1%)	
Body mass index			0.511
Underweight	7 (1.3%)	6 (1.4%)	
Normal	141 (27.2%)	99 (22.9%)	
Overweight	220 (42.4%)	191 (44.2%)	
Obese	150 (28.9%)	135 (31.2%)	
History of heart disease			0.781
No	364 (70.1%)	305 (70.6%)	
Yes	143 (27.6%)	115 (26.6%)	

Continued

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Table 1. Continued

Category	Primary Care Dominant (n = 519)	Non-Primary Care Dominant (n = 432)	P value
Diabetes, taking insulin			0.186
No	476 (91.7%)	381 (88.2%)	
Yes	24 (4.6%)	28 (6.5%)	
Hypertension, taking medication			0.857
No	175 (33.7%)	148 (34.3%)	
Yes	343 (66.1%)	283 (65.5%)	
General health (Short Form-1)			0.545
Poor	21 (4.0%)	22 (5.1%)	
Fair	75 (14.5%)	73 (16.9%)	
Good	188 (36.2%)	153 (35.4%)	
Very good	148 (28.5%)	125 (28.9%)	
Excellent	86 (16.6%)	58 (13.4%)	
Physical Component Summary score			0.289
Median [IQR]	48.2 [39.1 to 54.1]	48.1 [38.9 to 53.5]	
Missing	32 (6.2%)	23 (5.3%)	
Mental Component Summary score			0.841
Median [IQR]	57.3 [53.2 to 59.9]	57.3 [52.9 to 59.8]	
Missing	32 (6.2%)	23 (5.3%)	

Note: Stroke belt (Alabama, Arkansas, Louisiana, Mississippi, Tennessee, and the noncoastal regions in North Carolina, South Carolina, and Georgia) and the stroke buckle (the coastal regions within North Carolina, South Carolina, and Georgia).
Abbreviation: IQR, interquartile ranges.

mean age was 73.9 years, 42.9% were female, and 29.1% were Black (Table 1). Cancer survivors had a median of 9 visits (IQR 5,14) to a median of 4 providers (IQR 3,6) in the 12 months following their baseline survey. More than 90% (91.6%) had at least 1 visit with a PCP during this time. Nearly 88% of cancer survivors saw only a PCP, 3.8% saw both an oncologist and a PCP, 0.2% saw only an oncologist, and 8.2% saw neither an oncologist nor PCP. More than half (54.6%) of cancer survivors had a PCP as their dominant provider (Table 2). Two percent had an oncologist, 6.0% had a cardiologist, 1% had an endocrinologist, and 36.7% had other specialty providers as their dominant provider. We did not observe statistically significant differences in sociodemographics, lifestyle, and comorbid conditions between individuals with and without PCPs as their dominant provider.

Discussion

To our knowledge, this is the first study to document that nearly all (91.6%) cancer survivors (that is, those who are ≥2 years since active cancer treatments) have at least 1 annual visit to a PCP. Moreover, most (54.6%) cancer survivors had a PCP as their dominant provider and 88% saw only a PCP. Our findings suggest that a large proportion of cancer survivors could benefit from a smooth handoff from oncology to primary care.

Several different strategies have been suggested as ways to improve handoffs between oncologists and PCPs.[9] For example, survivorship care plans (SCP), have been proposed to improve communication between oncology and primary care at the end of active cancer treatments and increase cancer-specific knowledge among PCPs.[12] A SCP would inform the PCP of specific cancer therapies that were received and how they may put cancer survivors at increased risk for noncancer outcomes including weight gain due to hormone therapy, elevated glucose due to steroids, and coronary artery disease due to chemotherapy regimens. However, these plans are inconsistently implemented, and many PCPs never receive the SCPs. Shared leadership (team-based care models that purposefully share responsibility and have mutual influence on patient care) has also been suggested as a solution to improve the transition from oncology to primary care by clearing defining provider roles and respon sibilities in the

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Table 2. Specialty Codes of the Dominant Providers

Provider Specialty Code	Description of the Provider Specialty Code	Percentage of Beneficiaries in the Study with this Dominant Provider
11	Physician/Internal Medicine*	35.4
8	Physician/Family Practice*	17.9
18	Physician/Ophthalmology	7.4
6	Physician/Cardiovascular Disease†	6.0
7	Physician/Dermatology	4.0
20	Physician/Orthopedic Surgery	3.6
34	Physician/Urology	3.1
29	Physician/Pulmonary Disease	1.7
39	Physician/Nephrology	1.6
4	Physician/Otolaryngology	1.4
48	Podiatry	1.4
1	Physician/General Practice*	1.3
41	Optometry	1.3
10	Physician/Gastroenterology	1.1
83	Physician/Hematology-Oncology‡	1.1
90	Physician/Medical Oncology‡	0.7
16	Physician/Obstetrics & Gynecology	0.6
38	Physician/Geriatric Medicine	0.6
46	Physician/Endocrinology	0.6
66	Physician/Rheumatology	0.6

Notes: Provider specialty codes representing ≤0.5% of beneficiaries were suppressed. *Primary care combines '1','8','11'. Provider specialty code '11' includes individuals whose primary specialty is internal medicine. †Cardiology combines '6', and '78'. ‡Oncology combines '83','90','91','92'. Provider specialty code '92' had 0.2%, '91' had 0.1%, and '78' had 0.1% of beneficiaries.

care of the patient.[13] However, this approach has not been extensively implemented or tested. Given the suboptimal transitions from oncology to primary care, many cancer survivors are left unsure which provider should be responsible for their care following cancer treatments.[12]

Some limitations of this work include lack of data before the REGARDS baseline survey, lack of cancer-specific information (cancer type, tumor characteristics, cancer treatments received, and time since cancer diagnosis) as well as generalizability to cancer survivors at all time points in the cancer care continuum.

Our study indicates that nearly all cancer patients return to primary care after they complete cancer treatments. More research is needed on how best to achieve effective hand-offs and then how best to disseminate the most effective strategy. The potential benefits realized from efforts to improve transitions from oncology to primary care would not be restricted to a small subset of patients but may improve the quality of care for the majority of cancer survivors.

This manuscript was reviewed by the REGARDS Executive Committee prior to submission to ensure adherence to standards for describing the REGARDS study.

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