

## Capacity to Provide Geriatric Specialty Care for Older Adults in Community Oncology Practices

Grant R. Williams, MD<sup>1\*</sup>; Kathryn E. Weaver, PhD<sup>2,3</sup>; Glenn J. Lesser, MD<sup>2</sup>; Emily Dressler, PhD<sup>2,4</sup>; Karen M. Winkfield, MD, PhD<sup>2</sup>; Heather B. Neuman, MD, MS<sup>3</sup>; Anne E. Kazak, PhD<sup>5</sup>; Ruth Carlos, MD<sup>6</sup>; Lucy J. Gansauer, MSN, RN<sup>7</sup>; Charles S. Kamen, PhD<sup>8</sup>; Joseph M. Unger, PhD, MS<sup>9</sup>; Supriya Mohile, MD, MS<sup>8</sup>; Heidi D. Klepin, MD, MS<sup>2</sup>

1 O'Neal Comprehensive Cancer Center, University of Alabama at Birmingham, Birmingham, AL

2 Wake Forest Baptist Comprehensive Cancer Center, Wake Forest School of Medicine, Winston-Salem, NC

3 Department of Social Sciences and Health Policy, Wake Forest School of Medicine, Winston-Salem, NC

3 Division of Surgical Oncology, University of Wisconsin, Madison, WI

4 Department of Biostatistics and Data Science, Wake Forest School of Medicine, Winston-Salem, NC

5 Nemours Children's Health System, Wilmington, DE

6 University of Michigan Comprehensive Cancer Center, University of Michigan, Ann Arbor, MI

7 Spartanburg Regional Medical Center, Spartanburg, SC

8 James Wilmot Cancer Institute, University of Rochester, Rochester, NY

9 Fred Hutchinson Cancer Research Center, University of Washington, Seattle, WA

### \*Corresponding Author:

Grant R. Williams, MD

Assistant Professor

Divisions of Hematology/Oncology & Gerontology, Geriatrics, and Palliative Care

Institute of Cancer Outcomes and Survivorship

O'Neal Comprehensive Cancer Center at UAB

University of Alabama at Birmingham

1600 7th Avenue South, Lowder 500

Birmingham, AL 35233

Email: gwillia@uab.edu

Phone: 001-205-638-7000

Fax: 001-205-638-2121

USA

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**Abstract:**

**Background:** American Society of Clinical Oncology guidelines recommend that patients  $\geq 65$  years of age starting chemotherapy undergo a geriatric assessment (GA) to inform and guide management; however, little is known about resources available in community oncology practices to implement these guidelines and to facilitate geriatric oncology research.

**Methods:** Oncology practices within the NCI Community Oncology Research Program (NCORP) were electronically surveyed in 2017 regarding the availability of specialty providers, supportive services, and practice characteristics, as part of a larger survey of cancer care delivery research (CCDR) capacity.

**Results:** Of the 943 NCORP practices, 504 (54%) responded to the survey, representing 210 practice groups. The median new cancer cases per year  $\geq 65$  years of age was 457 (Interquartile range 227-939). Of respondents, only 2.0% of practices had a fellowship trained geriatric oncologist on staff. Geriatricians were available for consultation or co-management at 37% of sites, and of those, only 13% had availability within the oncology clinic (5% of overall). Practice size of  $\geq 1000$  new adult cancer cases (ages 18+) per year was associated with higher odds (1.81, CI 1.02-3.23) of geriatrician availability. Other multidisciplinary care professionals that could support GA were variably available onsite: social work (84%), nurse navigator (81%), pharmacist (77%), dietician (71%), rehabilitative medicine (57%), psychologist (42%), and psychiatrist (37%).

**Conclusion:** Only a third of community oncology practices have access to a geriatrician within their group and only 5% of community sites have access within the oncology clinic. Use of primarily self-administered GA tools that direct referrals to available services may be an effective implementation strategy for guideline-based care.

**Implications for Practice:** Only a minority of community oncology practices in the US have access to geriatric specialty care. Developing models of care that utilize patient-reported measures and/or other geriatric screening tools to assess and guide interventions in older adults, rather than geriatric consultations, are likely the most practical methods to improve the care of this vulnerable population.

## Introduction

Cancer is principally a disease of aging. Given changing demographics in the United States, nearly 70% of all new cancer diagnoses will be among older adults over the age of 65 by 2030.<sup>1</sup> The oncologic care of the older adult with cancer is often complicated by the heterogeneous aging process. Many older adults diagnosed with cancer have other comorbid conditions and functional impairments that often complicate treatment decision making.<sup>2,3</sup> Further, variable social support poses further challenges to the delivery of recommended treatments.<sup>4,5</sup> Age and performance status alone are not adequate to fully characterize the health status of older cancer patients to inform treatment decision making.<sup>6,7</sup> A geriatric assessment (GA) that systematically and comprehensively evaluates the various domains of health and social support would provide oncology providers with critical information to inform the development and tailoring of cancer treatment plans in older adults with cancer.<sup>8,9</sup>

American Society of Clinical Oncology (ASCO) and National Comprehensive Cancer Network (NCCN) guidelines recommend that patients  $\geq 65$  years of age starting chemotherapy undergo a GA to inform and guide management.<sup>10,11</sup> GA can help refine estimates of the risk/benefit ratio of treatment decisions and identify vulnerabilities that may be amenable to supportive care interventions.<sup>12-16</sup> Many older adults that undergo a GA are found to have impairments that may be amendable to interventions, such as those provided by physical/occupational therapists, social workers, dieticians, and/or

pharmacists.<sup>6,13,17</sup> Finally, GA has recently been shown to improve patient-centered communication in the care of older adults with cancer.<sup>18</sup> However, little is known about the resources available in community oncology practices to perform GAs and implement these guidelines. Furthermore, the accessibility of geriatric specialty care to aid in the management of older adults in community oncology clinics is unknown, and thus the best model of care to facilitate these guidelines is uncertain. Additionally, understanding the available resources and capacity to conduct cancer and aging research within the National Cancer Institute (NCI) network of community oncology practices is critical to developing future implementation and care delivery studies in this population.

To fill these knowledge gaps and better understand the capacity to implement these guidelines within community oncology practices, our goal was to assess the availability of geriatric specialty care and other multidisciplinary professionals that support the management of older adults with cancer in community oncology settings.

## **Materials and Methods**

### *Overview*

Data for the current study were drawn from the 2017 NCI Community Oncology Research Program (NCORP) Cancer Care Delivery Research (CCDR) Landscape Assessment. The NCORP is an NCI-funded oncology research network of approximately 1000 community oncology practices within the United States (US) that

conduct multisite trials in cancer prevention, screening, supportive care and symptom management, and cancer care delivery ([ncorp.cancer.gov](http://ncorp.cancer.gov)). The practices are clustered within 46 NCORP Community Sites, which are consortia of researchers, public hospitals, physician practices, academic medical centers, and other groups that provide healthcare services in communities across the US. NCORP Sites are chosen through a competitive grant process with the goal of expanding access to clinical cancer research to a larger and more geographically and socio-demographically diverse patient population across the US. The Landscape Survey asked administrators and research staff employed at NCORP clinics about issues relevant to health care delivery and capacity to perform CCDR research. Community oncology practices were electronically surveyed in 2017 regarding practice characteristics and the availability of various providers and supportive services.

#### *Survey Development and Distribution*

A description of the development of the CCDR Landscape Assessment has been previously published.<sup>19,20</sup> In brief, the survey was developed as an iterative process of question solicitation and review by the NCORP Research Bases and community oncology practices, with the goal of collecting data to inform future NCORP CCDR studies. Designated CCDR leads (research nurses or senior clinical research associates employed by the NCORP Sites) were identified by the Principal Investigators at each of the 46 NCORP Sites. These leads recruited practices and identified practice

groups (multiple clinics that shared providers, patients, and infrastructure and generally had a common electronic health record). Staff at the practices were trained to collect the web-based survey data via a series of webinars and frequently consulted a number of resources, including the local cancer registry and nurse managers to obtain the information. Only one practice-level response was submitted per practice group. The large majority (71.4%) of practices did represent a single physical location/practice.

### *Measures*

For our specific research purposes, we were interested in the availability of geriatric specialized care and ancillary resources relevant to the management of older adults in community oncology clinics. The survey specifically asked for: 1) the number of dually trained geriatric oncology providers at the practice, 2) whether geriatricians are available for consultation or co-management, and 3) if yes, whether geriatricians were available in the clinic, hospital, or external outpatient consultation setting. In addition, we were interested in the availability of other multidisciplinary care professionals often integral to the care of older adults with cancer, including social work, nurse navigators, pharmacists, dieticians, supportive caregiver services, rehabilitative medicine, psychologists, psychiatrists, integrative health specialists, and neuropsychologists. Lastly, we assessed the use of electronic health record systems, patient portals, and the use of patient-reported outcomes to inform clinical care as these are resources that can be used to facilitate care management and communication. We also collected

information about practices characteristics, including practice size (number of new cancer cases per year & number of oncology practitioners), self-designation as a “safety net hospital”, designation by the Centers for Medicare and Medicaid as a critical access hospital (located in a rural or underserved area), characteristics of new cancer patients (proportion of patients covered by Medicaid), practice ownership, and participation in the CMS Innovation Center Oncology Care Model of payment and delivery (initiative to provide higher quality and more coordinated oncology care at the same or lower cost).

### *Statistical Analyses*

Descriptive statistics were used to report prevalence of resources available at each practice. Logistic regression models were used to evaluate associations between practice factors and access to geriatricians for consultation or co-management at site, along with potential confounding variables including number of new adult cancer cases (ages 18+) per year (<1000 vs 1000+ [median number of cases]), number of practitioners, practice group region, practice ownership type, proportion of Medicaid  $\leq 10\%$  (approximate mean), and participation in oncology care model. Minimal missing data was present in the respondents (<10% for all observations) and managed as missing at random without any imputation. Dichotomization of new adult cancer cases per year and proportion of Medicaid cases were selected at approximate median levels

seen in the Landscape survey. All tests of significance were two sided, and analyses were conducted using SAS version 9.4 (SAS Institute, Cary North Carolina).

## **Results**

### *Practice Group Characteristics*

Of the 943 NCORP discrete practice locations at the time of survey, 504 (54%) responded to the survey alone or as part of a practice groups, representing 227 distinct practice groups; 17 were excluded because they serve pediatric patients exclusively. Of these 210 practice groups, 58% included a free-standing clinic or private/group practice, 81.4% included a hospital-based outpatient clinic, and 82% included inpatient services (practice groupings of the non-respondents is unknown). The median number of new cancer cases per year for patients  $\geq 65$  years of age per site was 457 (Interquartile range [IQR] 227-939) (see Table 1). The median number of medical oncology providers was 5 (IQR 3-11). About half of practices were located in the Midwest (53%), and 23% and 21% were self-designated as safety net hospital (provides significant level of care to low-income or uninsured populations) and critical access (provides care in a rural or underserved area), respectively. Most sites utilized electronic health record systems (95%) and patient portals (91%), while a third (33%) reported using patient-reported outcomes to inform clinical care or telemedicine services (31%) for delivery of care.

### *Geriatric and ancillary care resources*



Of respondents, only 2.0% of practices had a dual fellowship trained geriatric oncologist on staff (see Table 2). Geriatricians were available for consultation or co-management for 37% of sites. However, few practice sites (13%) had geriatricians that could see patients within the oncology clinic (see Figure 1). Among those with access to geriatricians, 54% had access to inpatient consultation and 90% to outpatient consultation external to the practice.

Other multidisciplinary care professionals that could support oncology providers in caring for older adults with cancer were variably available onsite: social work (84%), nurse navigation (81%), pharmacist (77%), dietician (71%), supportive caregiver services (64%), rehabilitative medicine (57%), psychologist (42%), psychiatrist (37%), integrative health specialist (25%), and neuropsychologist (19%). No significant differences in the proportion of available social worker, nurse navigation, pharmacist, rehabilitative medicine, psychiatrist, or integrative health specialist existed between sites with and without geriatric specialty access, but we found lower proportions of availability for dieticians, supportive caregiver services, psychologist, and neuropsychologist (see Supplemental Table 1).

When using logistic models to examine practice factors (including number of practitioners, practice group region, practice ownership type, proportion of dual medicare-medicaid, and participation in oncology care model) associated with access to geriatricians for consultation or co-management, only practice size defined at least 1000

new adult cancer cases (ages 18+) per year was associated with a greater odds (1.81, Confidence Interval 1.02-3.22) of having access to a geriatrician (see Table 3).

## **Discussion**

Using the NCORP Landscape Assessment we were able to characterize the availability of geriatric specialty care at community oncology clinics across the United States. Availability of geriatric-trained providers is limited in community oncology practices. Only one third of responding practices have access to a geriatrician for consultation with only about 5% of community sites having access within the oncology clinic. Practice size, as identified by the number of new adult cancer cases (ages 18+) per year, was the only factor associated with increased access to geriatric specialty care. Access is particularly limited in the outpatient setting and most often only available external to the oncology practice. This represents a critical gap in the ability of community cancer practices to care for older adults with cancer.

The care model for delivery of specialized care to the older adult with cancer varies worldwide.<sup>21</sup> In select high resource areas with ready availability of geriatric specialty care, a geriatrician is often a member of the multidisciplinary team and performs a GA within the oncology clinic.<sup>22-26</sup> This offers the distinct advantage of incorporating a provider trained specifically in the management of medically complex older adults within the clinic to potentially aid in treatment decision-making. Further, the geriatrician then has the ability to directly perform and/or provide referrals for GA-based

interventions that could improve outcomes in vulnerable older adults.<sup>22</sup> In contrast, in other clinical settings without such access to a geriatric specialist, a GA can only be performed by the oncology team.<sup>27</sup> In the settings without access to a geriatrician, a patient-reported or nurse led GA can be performed, but it is up to the oncology team to incorporate the findings of the GA results into treatment decision-making, identify appropriate GA-based interventions, and then provide appropriate referrals.<sup>28,29</sup> The results of our study suggest that this is the clinical scenario for most community practice settings (particularly smaller clinical practices) and ultimately should be the model of the focus of ongoing research given its broad applicability to clinical sites in the US. Developing GA tools for use by the oncology care team and providing education on how to utilize these results to personalize treatment and guide interventions are warranted.

Given the lack of geriatric specialty care in most community oncology clinics in the United States, there should be an increased focus on developing and testing GA tools that are feasible for use by the oncology team. Further, GA-based interventions that can be implemented by the oncology team or primary care providers within community settings should also be developed that leverage available ancillary services, including social workers, nurse navigators, pharmacists, and dietitians, that are readily available in community settings. Care pathways which rely on referrals to geriatricians to perform GA and/or GA guided interventions will not be optimal for the majority of community cancer clinics in the US given lack of access to subspecialty geriatrics

care.<sup>23,30</sup> To effectively implement ASCO and NCCN guidelines, research and education should focus on testing primarily self-administered GA tools or toolkits to be used by the clinical team that can effectively direct referrals to needed available ancillary services.<sup>13</sup>

Importantly, although access to geriatricians is limited in community practices, many important multidisciplinary professionals that are needed to provide comprehensive care to older patients with cancer are widely available. In particular, social work, nurse navigation, pharmacists and nutritionists are readily accessible. These results also have research implications for the design and testing of both implementation and new care delivery models. Understanding the availability of and any potential barriers to ancillary services is critically important in study design, as poor adherence to interventions is a common problem facing many studies in the older adult population.<sup>17,31,32</sup> Notably, most sites do not have access to psychological support and only a little over half have rehabilitative medicine at their site. Given anxiety/depression and functional impairments are common in this population, the low availability of these services are areas of concern.<sup>33-35</sup> Conversely, there is widespread use of electronic medical systems, patient portals, social work, and nurse navigators at NCORP community practice sites. In particular, nurse navigators could be utilized to perform GAs and help ensure that intervention recommendations are performed, as nurse led and navigation interventions have shown particular promise in similar cancer settings.<sup>36,37</sup> Moreover, the use of patient-reported outcomes and telemedicine at

community sites is higher than anticipated, and the incorporation of these new technologies in the development of future studies in community oncology clinics appears potentially feasible.

Given availability of electronic health systems and patient portals in most practices, this provides an opportunity to administer many patient reported assessments efficiently.<sup>38</sup> Additionally, patient-reported outcome measures are becoming increasingly utilized (33% of our sample) as part of routine care and used to inform clinical care. Based on the report of several recent seminal publications demonstrating improved symptom management, reduced hospitalizations, improved health-related quality of life, and decreased mortality with the incorporation of patient-reported measures,<sup>39-42</sup> there appears to be growing uptake in the use of patient-reported measures in community oncology clinics. These increasingly available tools could be readily adapted to assist in identifying needs relevant to the older adult with cancer. Incorporating geriatric screening tools and/or patient-reported GA tools into these platforms may improve not only the feasibility of utilizing the GA in clinical practice, but may also streamline incorporation of the GA into oncologic decision-making and improve adherence to GA-based interventions.<sup>43</sup> However, older adults may have increased barriers to the use of new technologies and unique issues related to digital literacy, warranting further examination of the digital divide and tailoring intervention to the older adult population. A recent secondary analysis by Nipp *et al* found age moderated the beneficial effects of

an electronic symptom monitoring intervention on the risk of emergency room visits and survival, thus highlighting importantly important age-related differences in electronic health interventions.<sup>44</sup>

Our study is not without limitations. Although we were able to survey a large number of community oncology practices across the United States from within the NCORP research network, only 227 practice groups (representing 54% of total NCORP sites) responded to the questionnaire, which may have resulted in some sample bias. Unfortunately, we are unable to examine potential differences in responding and non-responding practices for this survey, as equivalent data is not available for non-responding practices. Based on our data collection experience, one of the biggest factors related to response was interest among practice leadership in research, specifically in cancer care delivery research. Practices that had participated in past cancer care delivery research studies or intended to in the future were more likely to respond. Furthermore, community practices within the NCORP research network may not be representative of all practices in the United States, as these sites undergo a competitive selection process, and at the consortium-level generally have a successful history of accrual to cancer clinical trials. Our participating sites are quite heterogeneous and thus represent an addition to samples consisting primarily of academia centers. Furthermore, we were unable to measure whether access existed to geriatric services nearby by, but outside of a particular practice or health system, such as proximity to

larger tertiary centers. Lastly, although we measured availability of geriatric specialty services, these results do not reflect the actual use of such services among older patients with cancer.

## **Conclusion**

Access to geriatrics specialty care in community oncology practices in the United States appears limited, but many ancillary services are widely available. Providing additional geriatrics training to the oncology care team, using patient-reported measures relevant to older adults, and utilizing GA screening tools that assist in identifying care needs are likely the most practical methods to improve the care of the growing number of older adults with cancer in the United States.

Next steps for research to foster implementation of guideline-based GA into community practices should emphasize testing of strategies to integrate direct data capture of patient-reported GA into electronic medical record as part of routine clinical workflow and navigation care delivery strategies to match GA-guided supportive care recommendation to local resources. Education should include a focus on aging-related training for nurses and advance practice providers as well as patients and caregivers. Advocacy to support integration of geriatric measures into the oncology quality rubric would provide additional incentive to develop practice level solutions to incorporate GA into care pathways.

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**Figure Legend:**

**Figure 1.** Availability of geriatric trained providers in community oncology practices in the US.

**Table 1. NCORP Oncology Practice Group Characteristics (N= 210)**

<b>Number of oncology providers, median (IQR)</b>	5 (3-11)
<b>Number of new cancer cases per year ≥65 years of age, median (IQR)</b>	457 (227-939)
<b>Practice group region, n (%)</b>	
Midwestern	111 (53)
Western	44 (21)
Northeastern	13 (6)
Southern	42 (20)
<b>Practice ownership type, n (%)</b>	
Independently owned	75 (36)
Owned by large regional/multistate health system	113 (54)
Other (HMO/payer, publically or university-owned)	20 (10)
Missing	2 (1)
<b>Proportion of Medicaid only or dual Medicare-Medicaid cases, n (%)</b>	
≤10%	141 (67)
>10%	57 (27)
Missing	12 (6)
<b>Safety-net hospital, n (%)</b>	48 (23)
<b>Designated as Critical Access*, n (%)</b>	44 (21)
<b>Minority or underserved site under NCORP**, n (%)</b>	36 (17)
<b>Participate in Oncology Care Model***, n (%)</b>	60 (29)
<b>Use of Outpatient Electronic Medical Records, n (%)</b>	198 (95)
<b>Use of Patient Portals, n (%)</b>	189 (91)
<b>Use of Patient-Reported Outcomes to inform clinical care, n (%)</b>	67 (33)
<b>Use of Telemedicine services for delivery of care, n (%)</b>	64 (31)

Abbreviations: IQR, Inter-quartile range.

\*Located in a rural or underserved area

\*\*NCORP designation indicating that the site has a patient population comprising at least 30% racial/ethnic minorities or rural residents

\*\*\*Oncology Care Model is Medicare-Medicaid innovation initiative to provide higher quality and more coordinated oncology care at the same or lower cost.

**Table 2.** Availability of geriatric and ancillary care services in NCORP oncology practice groups (N=210)

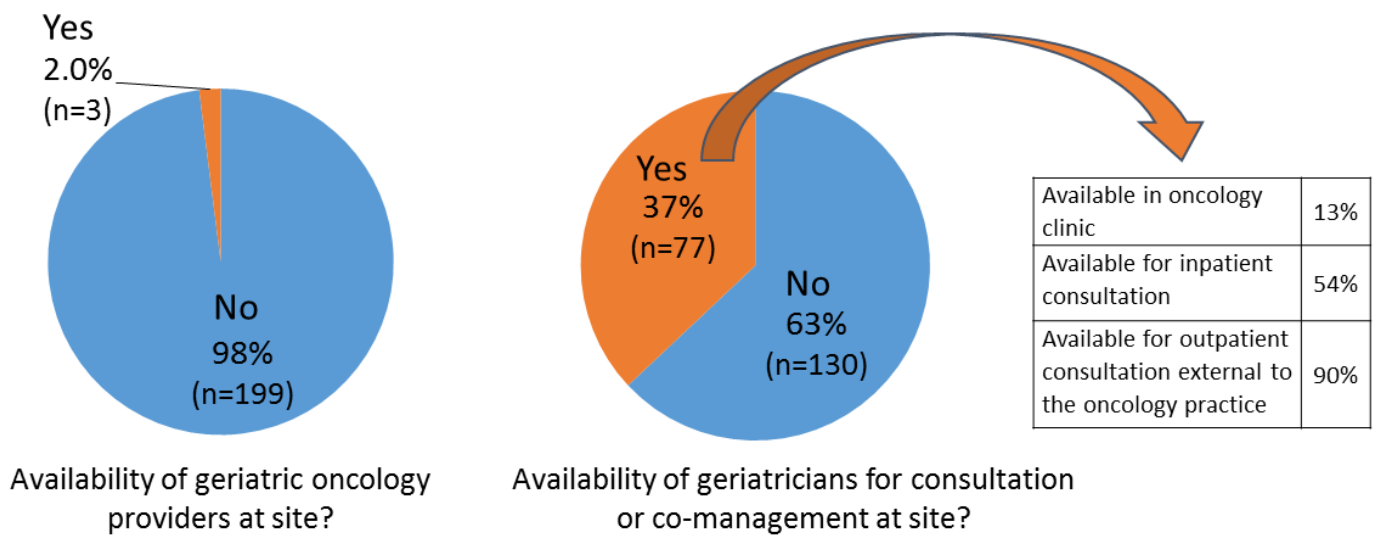
<b>Geriatric Specialty Care</b>			
	<b><i>n</i></b>	<b>Denominator</b>	<b>%</b>
Availability of geriatric oncology (fellowship-trained) providers at site	3	202	2
Availability of geriatricians for consultation or co-management at site	77	207	37
If geriatricians available, available in oncology clinic	10	78	13
If geriatricians available, available for inpatient consultation	42	78	54
If geriatricians available, available for outpatient consultation external to the oncology practice	70	78	90
<b>Other Multidisciplinary Care Professionals</b>			
Availability of social work at site	174	207	84
Availability of nurse navigators at site	167	207	81
Availability of pharmacist at site	159	207	77
Availability of dietician at site	147	206	71
Availability of supportive caregiver services providers at site	130	204	64
Availability of rehabilitative medicine at site	117	207	57
Availability of psychologist at site	80	207	42
Availability of psychiatrist at site	77	207	37
Availability of integrative health specialist at site	52	207	25
Availability of neuropsychologist at site	40	207	19

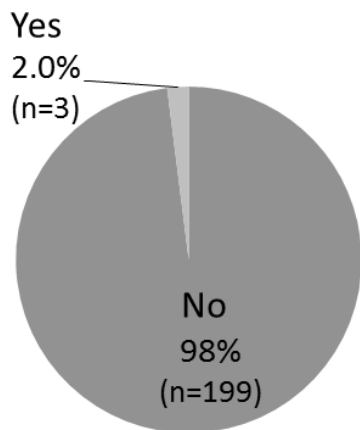
**Table 3.** Logistic models to examine practice factors associated with access to geriatricians for consultation or co-management among NCORP adult practice groups (N=210)

Variable	Odds Ratio	Confidence Intervals	<i>p</i>
<b>Number of new adult cancer cases (ages 18+) per year <math>\geq 1000</math></b> (REF <1000)	1.81	1.02-3.22	<b>0.04</b>
<b>Number of practitioners</b> (medical oncologist, radiation oncologist, and surgical oncologist)	1.0	0.99-1.02	0.36
<b>Practice group region</b>			0.55
Midwestern	REF	REF	
Western	0.97	0.47-1.99	
Northeastern	0.66	0.19-2.27	
Southern	0.59	0.27-1.28	
<b>Practice ownership type</b>			0.42
Independently owned	REF	REF	
Owned by large regional/multistate health system	1.41	0.76-2.62	
Other	1.78	0.65-4.88	
<b>Proportion of Medicaid cases <math>\leq 10\%</math></b> (REF >10%)	1.23	0.65-2.34	0.52
<b>Participate in Oncology Care Model</b>	0.74	0.40-1.37	0.33

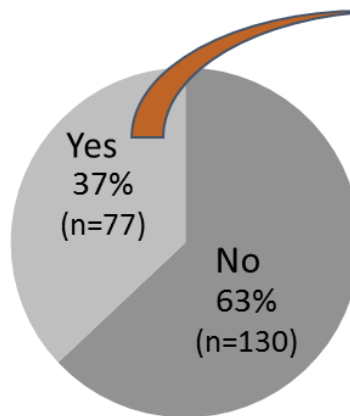








Availability of geriatric oncology providers at site?



Availability of geriatricians for consultation or co-management at site?

Available in oncology clinic	13%
Available for inpatient consultation	54%
Available for outpatient consultation external to the oncology practice	90%

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