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## A Mixed Methods Examination of Communication between Oncologists and Primary Care Providers among Primary Care Physicians in Underserved Communities

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### Abstract

**Background**—Research has demonstrated that communication and care coordination improve cancer patient outcomes. To improve communication and care coordination, it is important to understand Primary Care Providers' (PCPs') perceptions of communication with oncologists as well as PCPs' communication needs.

**Methods**—A mixed methods approach was utilized in the present study. In the qualitative phase of the study, 18 PCPs practicing in underserved, minority communities were interviewed about their experiences communicating with oncologists. In the quantitative phase of the study, 128 PCPs completed an online survey about their preferences, experiences, and satisfaction with communication with oncologists.

**Results**—Results indicated a PCP-oncologist gap in communication occurred between diagnosis and treatment. PCPs wanted more communication with oncologists, updates on their patients' prognosis throughout treatment, to be contacted via telephone or email, and saw their role as crucial in providing supportive care for their patients.

**Conclusions**—Although PCPs recognize that they play a critical, pro-active role in supporting patients throughout the continuum of their cancer care experience, existing norms regarding post-referral engagement and oncologist-PCP communication often hinder activation of this role among PCPs. Expected standards regarding the method, frequency, and quality of post-referral

communication should be jointly articulated and made accountable between PCPs and oncologists to help improve cancer patients' quality of care, particularly in minority communities.

## Keywords

Cancer; communication; PCP; oncologist; health disparities

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## Introduction

With an increasing number of cancer survivors but a growing shortage of oncologists,<sup>1</sup> primary care providers (PCPs) play a crucial role in managing the care of cancer patients and survivors.<sup>2</sup> It is essential that PCPs be well-informed by oncologists of their patients' diagnoses, treatments, and survivorship needs. Thus, it is important to understand how PCPs experience communication with oncologists and how they prefer oncologists to communicate with them in order to improve coordination of care.

Given the wide scope of optimal cancer care,<sup>3</sup> PCPs are crucial to the health care team in treating and following up with cancer patients and survivors.<sup>2</sup> Because PCPs are typically involved in patients' health care prior to the cancer diagnosis, they are often the best choice for providing follow-up care.<sup>4</sup> PCPs can often provide "easier access, less traveling time, and more personalized care" to patients than oncologists.<sup>4</sup> Moreover, receiving follow-up care from a PCP has been shown to improve cancer survivors' likelihood of receiving preventive interventions targeted at non-cancer conditions.<sup>5</sup> Additionally, patients favor PCPs providing follow-up care. In one study of 183 cancer patients, the vast majority (80%) reported that as part of their follow-up cancer care, they wanted guidance from their PCPs.<sup>6</sup>

Despite the significant role PCPs can have and patients' desire for PCPs' involvement in cancer care, cancer patients' follow-up care may suffer from limited communication and care coordination between PCPs and oncologists.<sup>3</sup> For example, a recent study found that only 28% of breast cancer survivors reported that their PCPs and oncologists communicated well.<sup>7</sup> Only 60% of cancer patients in another study reported feeling that their PCPs were aware of their current problems.<sup>8</sup> PCPs have also reported these issues, indicating that poor information exchange between providers is a large contributor to communication breakdowns in cancer care.<sup>9</sup> In fact, PCPs have reported needing to correct for information deficits from oncologists in providing survivorship care to their patients.<sup>10</sup> Communication between PCPs and oncologists may suffer the most during active treatment. Whereas 57% of cancer patients reported their PCP was involved in the diagnosis of the disease and 43% reported their PCPs were involved in their follow-up, only 27% reported their PCPs were involved in their medical care during the time they received treatment for their disease.<sup>8</sup>

Improving communication and coordination of care between oncologists and PCPs has been linked not only to better quality of cancer patients' follow-up care but also with greater satisfaction with this care.<sup>11-16</sup> Shared care has been promoted as the ideal way to maximize both PCP and oncologist care of patients.<sup>17</sup> Moreover, the coordination of the health care workforce in providing cancer care was recently highlighted by the Institute of Medicine as necessary to target in order to improve the cancer care delivery "system in crisis."<sup>18</sup> Recent research has noted that improving coordination of care may help address

the growing shortage of oncologists and help ensure that survivors receive the best follow-up care.<sup>19</sup> As such, examining PCPs' perceptions of communication with oncologists as well as PCPs' communication needs is critical to improving patient care.

Understanding these communication patterns and needs is especially important among PCPs who provide care to underserved, minority populations. Racial and ethnic minorities are more at risk for disparities in cancer care, including lower access to state-of-the-art therapeutic and diagnostic therapies, fewer enrollments in cancer clinical trials, and higher mortality rates due to cancer.<sup>20,21</sup> Furthermore, racial and ethnic minorities who lack physician continuity on repeat clinic visits have reported less satisfaction with and trust in their physicians than Caucasians.<sup>22</sup> Thus, the continuity of care that PCPs provide may be particularly important among underserved, minority patient populations. The aims of the present study were to examine: (a) communication patterns between oncologists and PCPs who treat lower income minority patients, from the PCPs' perspectives, and (b) PCPs' preferred patterns of communication from oncologists. This research was part of a larger study that explored PCPs' experiences referring patients for cancer testing and treatment, as well as their understanding of and attitudes towards cancer clinical trials.

## Methods

The larger study was conducted in two phases. The first phase of the study was qualitative and exploratory; it focused, in part, on how satisfied a larger sample of PCPs were with their communication with oncologists as well as their preferred forms of communication. The second phase examined this same issue quantitatively, building on the results from the qualitative phase. The portion of the study discussed here utilizes a multi-stage, mixed methods approach, drawing on both phases of the larger study, in order to gain an in-depth understanding of how oncologists communicate with PCPs, from the PCP's perspective. Quantitative survey results indicated PCPs' preferences for communication, and qualitative results illuminated and expounded on these themes.

### Qualitative phase

**Participants and recruitment**—Participants were recruited to participate in a face-to-face or telephone interview about communication with patients and oncologists. Participants were recruited in the New York City metropolitan area, with a focus on PCPs who practice in predominantly underserved, minority communities, including those with recent immigrant groups. Recruitment targeted physicians who work for organizations that participate in the NYC Research and Improvement Networking Group (NYC RING), a large practice-based research network in the Bronx and Upper Manhattan that is organized by the Albert Einstein College of Medicine. PCPs were also recruited from the Institute for Family Health, a community health network with multiple locations, as well as from 14 Queens-Long Island Medical Group Offices. These interviews were conducted between June 2009 and April 2010. PCPs from these various organizations were recruited via flyers, phone calls, pagers, and email to assess their interest in the study. Interviews were conducted until thematic saturation was reached (i.e., no new information was being presented), which resulted in a

total of 18 PCPs being interviewed. Of those PCPs reached, 100% agreed to participate in the interview.

**Interview process**—As noted above, this study sought to explore the experiences of PCPs in sending their patients for testing and referring patients for cancer care, as well as discussions and knowledge about clinical trials. For the purposes of this paper, analyses focus primarily on the questions about communication with oncologists. Results for the clinical trials portion of this study are presented elsewhere.<sup>23</sup>

Participants were interviewed in person or over the telephone by a trained qualitative expert (MBS). Interviews followed a semi-structured format approved by all participating institutions' IRBs. The section of the interview guide focused on PCPs' experiences communicating with oncologists was designed to gather information on: PCPs' experiences communicating with oncologists, how diagnoses are communicated, degree of contact with oncologists during the course of patients' treatment, and preferred types of communication between PCPs and oncologists. The interview protocol initially consisted of 27 questions. Following the first five interviews, four more questions and several probes were added to the interview protocol. These changes to the protocol were discussed by the research team and resulted in a total of 31 semi-structured interview questions. Interviews were audio taped and transcribed. Physicians were offered \$75 for their participation.

**Analysis**—Interview transcripts were analyzed using inductive thematic text analysis.<sup>24</sup> In this approach, coding team members (TD, CB, NB) first read each transcript individually, highlighting significant content and noting personal reactions and reflections. Individual findings were recorded in an analysis template, which included sections corresponding to the study aims and space for supporting quotes. Next, coding team members met as a group to discuss interpretations, resolve discrepancies, and synthesize findings into a consensus document. Overarching and recurring thematic findings were then shared with the larger team as codes were refined and added. This iterative process was followed until thematic saturation was reached, at which point coding team members independently read remaining transcripts and met to discuss any additional findings.

## Quantitative phase

**Participants and recruitment**—For the quantitative portion of this study, 621 PCPs were identified as potential participants in an online survey. The PCPs' names and email addresses were provided by three collaborating organizations: MetroPlus (a provider of Medicaid managed care in the New York City area, particularly the Bronx); the Montefiore Medical Groups (Bronx, NY); and the Urban Health Plan (Bronx, NY). Of the 621 providers, 8 were excluded for not being a primary care provider, leaving us with a total sample of 613 valid providers to approach.

**Procedures**—An invitation email was sent from the medical leader associated with each group to each member of his or her group. The invitation email briefly described the survey, stated that the leader supported the survey, assured the participant of confidentiality, and

noted the \$25 gift card provided for completion of the survey. Initial invitations were sent via email; four reminder emails were sent to those who had not completed the study.

**Survey**—PCPs were asked to complete a 65-item online survey developed in Qualtrics Survey Software.<sup>25</sup> This survey was developed based on: 1) data from the qualitative interviews that took place in the first phase of this study, 2) an up-to-date review of the relevant literature and instruments, 3) expert opinions, and 4) questionnaires that were tested in a national initiative led by one of the study investigators. The survey was developed and reviewed by all team members, including experts in the field and PCPs serving underserved populations. The survey was then pilot tested by four PCPs and was adapted for web delivery by an expert consultant on designing, implementing, and evaluating web-based surveys.

For the purposes of this study, we focused primarily on the questions regarding post-referral communication practices with oncologists. Five questions were developed to assess PCPs' attitudes toward and preference for communication with oncologists among a larger group of PCPs. These questions were based on emerging themes from the qualitative data about preferences for method, amount, and form of communication and were limited to five questions because this study was part of a larger survey. All data were collected between April 2011 and July 2011.

**Analysis**—Descriptive statistics were obtained for questions asking about PCPs' post-referral communication with oncologists. These descriptive statistics were interpreted by examining them in conjunction with the themes that emerged from the qualitative portion of this study.

## Results

Demographics and medical practice characteristics of providers from the qualitative phase ( $n=18$ ) are presented in Table 1. Of the 613 providers approached in the quantitative phase, 128 providers completed the survey, yielding a response rate of 21%. Demographics, medical practice characteristics, and cancer screening and referral practices of providers from the quantitative phase are presented in Table 2.

Five thematic areas about PCP-oncologist communication emerged from the data: (1) PCPs' perceptions of communication, (2) PCPs' satisfaction with communication, (3) PCPs' preferred form of communication, (4) PCPs' desired amount of communication, and (5) PCPs' desired role in communicating with oncologists. Quantitative data on these themes are presented in Table 3. These basic themes are elaborated upon with the qualitative findings. Exemplary quotations illustrating these themes are presented in Table 4. We discuss each theme in turn.

### PCPs' Perceptions of Communication with Oncologists

Survey results indicated that the majority of PCPs had "almost always" (33.6%) or "often" (22.1%) been informed by the oncologist of the diagnosis and/or outcome of their patient (see Table 3) after referring their patient for a diagnostic work-up. However, it should be

noted that 44% of the PCPs indicated that they “sometimes,” “rarely,” or “never” were informed of the diagnosis and/or outcome of their patient, indicating that this point in the disease trajectory often suffers from a lack of communication between oncologists and PCPs.

The qualitative findings illuminated this pattern of gap in communication that often occurs post-referral. Despite reported variation in how well oncologists communicated, most PCPs reported a similar pattern of timing of communication. In general, PCPs were informed of the patient’s diagnosis and then a gap in communication occurred during treatment. Communication returned once the patient finished treatment and was being referred back to the PCP’s care. One provider referred to this break in communication between diagnosis and the end of treatment as the “great void” (See Table 4). PCPs consistently reported that the most commonly occurring gap in communication was right after referring their patient to the oncologist. Then, there was a consistent pattern of not hearing about the patient until “all the treatment is done” (Table 4).

A minority of PCPs did report that they received follow-up notices throughout their patient’s treatment. In the quantitative surveys, PCPs reported that oncologists initiated written or verbal communication with them after a referred patient begins cancer treatment about as often as PCPs initiated written or verbal communication with oncologists (see Table 3). Thus, both PCPs and oncologists seem to initiate communication regarding patients.

### **PCPs’ Satisfaction with Oncologists’ Communication**

On the quantitative survey, the majority of PCPs indicated that they felt the amount of communication they had with oncologists who were treating their patients was “not enough” (59.8%; see Table 3). Qualitative findings elaborated on this finding, suggesting that PCPs were referring to the frequency and quality of communication not being enough. In their interviews, most PCPs reported a desire specifically to “be more closely informed of what’s happening, even though the patient is not coming to [them]” [Physician 109] (see Table 4). PCPs also reported, in their interviews, that the lack of communication between diagnosis and the end of treatment was not ideal because it created a discontinuity in treatment and caused their level of patient care to suffer. PCPs perceived this lack of communication to be an indication that oncologists did not view their role as vital to the cancer treatment process.

### **PCPs’ Preferred Form of Communication with Oncologists**

The quantitative survey of PCPs indicated that the majority of PCPs preferred to communicate with oncologists via telephone (35.0%) or email (45.0%) (see Table 3). A smaller number of PCPs preferred to communicate via mail (28.8%) or fax (16.3%). Finally, the smallest number of PCPs preferred to communicate through other methods, most of which were Electronic Medical Records (EMR) (12.5%). This variation in preference for method of communication, according to the qualitative interviews, seems to depend on how serious the patient’s issue was (see Table 4). For instance, if the patient is receiving a routine screening, then “paper communication is fine.” However, if the patient is really sick, “a phone call is much appreciated” [Physician 102].

### PCPs' Desired Amount of Communication with Oncologists

Qualitative interviews revealed that the majority of PCPs wanted updates on their patients throughout treatment in addition to receiving information at diagnosis and upon completion of treatment. Specifically, PCPs wanted regular updates on their patients' "condition, their treatment, the prognosis" [Physician 102]. Some PCPs even tried to see their patients throughout treatment as often as "every 6 weeks" [Physician 209] in order to maintain primary care of their patients during this time.

### PCPs' Desired Role in Communicating with Oncologists

PCPs viewed the time during cancer treatment as a transitional phase when they could play a supportive role. Whereas the oncologist provides the main care during cancer treatment, PCPs saw their role as giving patients "moral support and explaining things and managing medical issues that come up" [Physician 103] (see Table 4). Although oncologists may feel that PCPs are crucial only after treatment ends, most PCPs believe that they serve a critical role during the treatment of the disease as well. Namely, their role becomes more "supportive" [Physician 105]. Additionally, PCPs saw themselves as more accessible to their patients for answering questions about their symptoms. In order to provide the adequate support needed, however, PCPs felt that being informed of their patients' treatment options and prognosis was essential.

## Discussion

Using mixed methods, the present study examined communication patterns and needs between PCPs and oncologists from the PCPs' perspective among PCPs working with underserved, minority populations. Results of the present study indicated that the majority of these PCPs report being informed of their patients' diagnoses, but gaps in communication frequently occur between diagnoses and the end of treatment. This finding supports previous research showing that the discontinuity in care begins early, often just after a patient receives a cancer diagnosis.<sup>8</sup> Both the qualitative and quantitative data indicated that the majority of PCPs desire more communication with oncologists than they currently have. PCPs report a preference for receiving updates on their patients' care both at diagnosis and during treatment in order to provide better supportive care throughout the cancer care continuum. PCPs see themselves as more accessible than oncologists for answering patients' questions, supporting prior research that suggests PCPs might be more readily available to their patients than oncologists.<sup>4</sup>

These findings also corroborate prior research indicating that only a minority of cancer survivors report good communication between their PCPs and oncologists.<sup>7</sup> Lack of coordination of care is consistently reported as a barrier to high-quality cancer care,<sup>26</sup> and it has been shown to have particularly negative consequences for minority patients' trust and satisfaction with care.<sup>22</sup> Due to its importance in patient-centered care, continuity of care is recognized by both PCPs and oncologists as an issue that needs to be addressed. For example, a previous study in which medical oncologists, radiation oncologists, surgeons, nurses, and PCPs were interviewed found that a need for care coordination was one of the major unprompted themes that emerged.<sup>27</sup> Improving care coordination and communication

is important because it has been associated with a number of positive outcomes, including better quality of care for cancer patients.<sup>11–16</sup> Improvements in communication and care coordination may also reduce the redundancy of care that can occur. Duplication of follow-up services and care has been noted by oncologists, nurses, and PCPs as a negative consequence of a lack of coordination of care.<sup>27</sup>

The themes discussed in the present study are consistent with prior research among more general populations, but they seem more pronounced among the PCPs studied here, who provide care primarily to underserved populations. Because racial and ethnic minorities have more coordination of care issues than Caucasians,<sup>20,21,28</sup> improving this coordination is particularly critical among this population. The present study indicates that physicians working with these populations would like to play a larger role in patient care. Consequently, it may be feasible to enhance communication between PCPs and oncologists in order to create greater involvement of PCPs in patients' care among this population.

In summary, both the qualitative and quantitative phases of the present study affirm the significant role that PCPs serving underserved, minority populations can have in the continuum of patients' cancer care post-referral. Findings from the present study capture the desire among PCPs for a more expansive role in this area than what often occurs, highlighting how underutilized PCPs are. While this study articulates the challenges and deficiencies regarding the extent and quality of communication between PCPs and oncologists, it also identifies particular ways in which PCPs can actively offer patients supportive care and maintain continuity in the provision of other primary care services throughout and beyond patients' cancer treatment.

### Limitations and Directions for Future Research

Although the present study provides insight into the communication patterns and needs of PCPs and oncologists treating underserved communities, it does have some limitations, which suggest areas for potential future research. First, the current study is limited in generalizability because it had a relatively low response rate (21%) and studied physicians only in the NYC metropolitan area with an academic affiliation. Although this response rate is fairly low, it is consistent with low rates of response among PCPs to questionnaires assessing issues surrounding patients with cancer in past research.<sup>29</sup> Future research may be able to increase this common but low rate of recruitment by providing larger incentives for physicians or by recruiting physicians face-to-face in clinics. To address the limitation of generalizability, future research could include a broader, more nationally representative sample of PCPs who practice in underserved communities. For instance, PCPs in other areas of the country may already be more involved in patient care during treatment. One study of a nationally representative sample of 1,694 PCPs throughout the United States indicated that 90% of PCPs fulfilled general medical care roles for cancer patients such as managing comorbid conditions, chronic pain, establishing do-not-resuscitate-orders, and referring patients to hospice care.<sup>19</sup> However, 22% of this sample reported having no direct involvement in cancer care roles, indicating there is still an underutilization of PCPs in treating cancer-specific issues among a more representative U.S. sample.



A second limitation of the present study was that it examined only the PCPs' point of view. Future research should examine the attitudes oncologists have toward PCPs' involvement in cancer care as well as the barriers oncologists face in engaging in optimal communication with PCPs. For instance, a nationally representative study of 1,130 medical oncologists and 1,072 PCPs showed that compared to PCPs, medical oncologists were less likely to believe PCPs had the skills to conduct screenings for breast cancer recurrence or to care for the late effects of breast cancer.<sup>30</sup> As such, medical oncologists may avoid communicating too much information with PCPs for fear that they lack the adequate medical skills to provide proper care to patients during active treatment. Future studies could examine both the PCPs' and oncologists' perspectives by conducting focus groups, to ask physicians what questions they would like to ask physicians from the other specialty (PCP or oncology). Additionally, it could be beneficial to examine low-cost, effective ways to improve communication between PCPs and oncologists through venues such as professional organization or community organizations. Finally, it could be helpful to compare communication between PCPs and oncologists to communication between PCPs and other specialties to determine how their level of communication compares.

Additionally, given the lack of communication between PCPs and oncologists between diagnosis and end of life treatment, it would be helpful for future research to address the optimal level of communication to improve patient care during this period. Moreover, future research should also examine at which points in treatment it would be optimal for communication to take place (e.g., when a patient receives a treatment plan, if the treatment plan changes, if the patient is experiencing symptoms or other illnesses). Based on the results of this study, it appears that post-treatment is one point in time in which communication is needed. As such, future studies could examine how to transition from treatment plans into survivorship care plans, including how to best integrate the PCP into this process.

Finally, 7 out of 18 of the qualitative interviews were conducted in 2009, prior to the introduction of the Electronic Medical Records (EMRs). The introduction of EMR has led to improvements in inter-physician communication, yet the communication between PCPs and oncologists has been largely unaffected, due to the inability of providers to share EMR records cross-institutionally. As the emergence of EMR increases and this potentially changes, future research should consider the effect that EMR may have on PCP-oncologist communication. For instance, EMRs could lead to improvements in both the timeliness of communication as well as more detailed information on which physicians included certain notes in a patient's chart. This could lead to improvements in communication by both increasing the efficiency of receiving information about a patient's care as well as knowing which physicians to approach if any questions arise about the patients care. Currently, these benefits can only exist within an integrated delivery system.

## Conclusions

Although PCPs serving underserved, minority populations recognize that they can play a critical, pro-active role in supporting patients throughout the continuum of their cancer care experience, existing standards of practice regarding post-referral engagement and

oncologist-PCP communication often hinders full activation of this role among PCPs. Enhancing post-referral communication between oncologists and PCPs is likely to enhance the care experience and outcomes of cancer patients and survivors. Expected standards (which could be assessed by rating satisfaction with communication) regarding the method, frequency, and quality of post-referral communication should be jointly articulated and made accountable between PCPs and oncologists to improve cancer patients' quality of care.

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**Table 1**Demographic and medical practice characteristics of the qualitative phase ( $n=18$ ).

Variable	Percentage
<b>Primary Care Physician Demographics</b>	
Gender	
Male	55.6%
Female	44.4%
Ethnicity	
White	66.7%
Non-White	33.3%
Latino	5.6%
<b>Medical Practice Characteristics</b>	
Average years practicing medicine (SD)	16.58 (8.89)
Patient load per week	
Less than 50 patients per week	38.9%
50 patients or more per week	61.1%
Practices where at least 50% of patients have Medicare	38.9%
Practices where at least 50% of patients have Medicaid	22.2%

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**Table 2**Demographic and medical practice characteristics of the quantitative phase ( $n=128$ ).

Variable	Percentage
<b>Primary Care Physician Demographics</b>	
Average age (SD) ( $n=115$ )	45.7 years (10.62)
Gender ( $n=127$ )	
Male	51.2%
Female	48.8%
Medical school affiliation ( $n=127$ )	
Yes	74.0%
No	26.0%
Ethnicity ( $n=125$ )	
White	44.0%
Non-White	56.0%
Latino ( $n=125$ )	15.2%
<b>Medical Practice Characteristics</b>	
Practice borough	
Brooklyn	17.2%
Bronx	51.6%
Manhattan	17.2%
Queens	12.5%
Staten Island	1.6%
Practice type	
Family practice	18.8%
Internal medicine	64.1%
Geriatric medicine	5.5%
Obstetrics and gynecology	3.1%
Other	8.6%
Practice structure *	
Privately owned by you	1.6%
Privately owned by multiple physicians (i.e., group practice)	0.8%
Part of a multi-site practice that is corporate-owned	9.4%
A hospital-owned out-patient practice	64.8%
Federally Qualified Health Center (FQHC)	27.3%
Health and Hospitals Corporation	5.5%
<b>Patient Population Characteristics</b>	
Patient load per week ( $n=123$ )	
Less than 50 patients per week	41.5%
50 patients or more per week	58.5%
Practices where 50% or more of the patients are 50 years or older	11.8%
Practices where at least 50% of patients have Medicare	12.6%
Practices where at least 50% of patients have Medicaid	44.1%

Variable	Percentage
<b>Cancer Screening and Referral Practices</b>	
Mean proportion of patients referred for further cancer diagnosis workup (SD)	5.8 (6.09)
PCP patient referral practices for oncologists*	
Personally recommends a specific oncologist or oncology practice	47.7%
Sends the patient to support staff for list of possible oncologists/practices	35.2%
Recommends the patient use their insurance company's referral system	11.7%
Other	20.3%

\* Indicates a category in which providers could check all that apply, so may total to more than 100%

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**Table 3**Descriptive statistics of the quantitative survey data ( $n=128$ ).

Variable	Percentage
“When you refer a patient for a diagnostic work-up, how often are you informed by the oncologist of the outcome and/or diagnosis?”	
Almost always	33.6%
Often	22.1%
Sometimes	26.7%
Rarely	11.5%
Never	6.1%
“Do you feel that the amount of communication you have with oncologists who are treating your patients is:”	
Too much	0.8%
Just right	39.4%
Not enough	59.8%
“What is your preferred method of communication with an oncologist who is treating your patient?”*	
Telephone	35.0%
Email	45.0%
Fax	16.3%
Mail	28.8%
Other (e.g., Electronic Medical Record)	12.5%
“How often do you initiate written or verbal communication with an oncologist after a patient you referred begins cancer treatment?”	
Almost always	23.3%
Often	21.1%
Sometimes	33.8%
Rarely	12.8%
Never	9.0%
“How often does the oncologist initiate written or verbal communication with you after a patient you referred begins cancer treatment?”	
Almost always	23.5%
Often	18.9%
Sometimes	31.8%
Rarely	14.4%
Never	11.4%

\* Indicates a category in which providers could check all that apply, so may total to more than 100%

Table 4

## Summary of qualitative results.

Theme	Summary of Themes	Exemplary Quotations
PCPs' perceptions of communication with oncologists	PCPs reported being informed of the patient's diagnosis and then a gap of communication occurred during treatment.	<p><i>"Yeah, well often times you'll hear that initially...what's going on, what they've done, and then, you know, often times, there's this great void of time, and you don't hear anything."</i> [108]</p> <p><i>"Often times you just get one letter when they're initially seen, with an initial plan of what's going to be done in terms of working it up, sometimes you get a call with 'oh they have this diagnosis' and then I don't hear after that, until the patient comes back to me a long time later, once all the treatment is done."</i> [102]</p>
PCPs' satisfaction with oncologists' communication	PCPs reported that a lack of communication with oncologists caused their level of patient care to suffer.	<p><i>"I would have liked to be more closely informed of what's happening, even though the patient is not coming to me."</i> [109]</p> <p><i>"...so it [the gap in communication] does create a disjointedness that is less than ideal."</i> [101]</p> <p><i>"And it's, I don't know if the word is embarrassing, but when you can't really explain to the patient what's going on, it doesn't really help their comfort level when their own doctor isn't really sure what's going on with them because you have not been in touch with the oncologist."</i> [305]</p>
PCPs' preferred form of communication with oncologists	The PCPs' preferred form of communication varied according to how serious the patient's issue was.	<i>"I think it depends on the seriousness of the patient issue. If a routine screening is done, I think paper communication letters is fine. If the patient is really sick and there is a particularly bad diagnosis, then a phone call is much appreciated."</i> [102]
PCPs' desired amount of communication with oncologists	PCPs reported desiring more communication with their oncologists throughout the patient's treatment.	<i>"I would like to get regular updates on their condition, their treatment, the prognosis."</i> [102]
PCPs' desired role in communicating with oncologists	PCPs wanted to play a more supportive role during patients' treatment.	<p><i>"Well, sometimes I might be...giving them [patients] moral support and explaining things and managing medical issues that come up."</i> [103]</p> <p><i>"My role becomes...more supportive. And it becomes more of...more of whatever it is that the patient will need..."</i> [105]</p>