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Discussing Health Care Expenses in the Oncology Clinic: Analysis of Cost Conversations in Outpatient Encounters

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QUESTION ASKED: The objective of this study is to determine the frequency, duration, and content of patient-oncologist discussions about health care costs in breast cancer clinic visits.

SUMMARY ANSWER: Cost conversations occurred in 22% of visits, had a median duration of 33 seconds, and were initiated more often by oncologists than by patients. Although oncologists most frequently brought up costs of antineoplastic therapies (eg, endocrine therapies, targeted agents, and chemotherapy), patients most commonly brought up costs of diagnostic tests. Thirty-eight percent of cost conversations mentioned cost-reducing strategies, which most commonly sought to lower patient costs for endocrine therapies and symptom-alleviating treatments (eg, opioid analgesics, antiemetics). The three most commonly discussed cost-reducing strategies were: switching to a lower-cost therapy/diagnostic, changing logistics of the intervention, and facilitating copay assistance.

WHAT WE DID: We performed mixed-methods content analysis of transcribed dialogue from 677 outpatient appointments for breast cancer management. Encounters featured 677 patients with breast cancer visiting 56 oncologists nationwide from 2010 to 2013.

BIAS, CONFOUNDING FACTOR(S): The study sample limits the generalizability of our findings because it was composed entirely of breast oncology visits. Cost conversations in this setting may not be representative of those in other oncology settings. Also, we had access to only one recording per patient; accordingly, it is unknown whether cost was discussed in visits before or after the one recorded. Because earlier cost conversations may obviate the need for future ones, our analysis may have underestimated cost conversation incidence. Furthermore, although we sampled patients across a broad range of geographic regions, and assessed insurance coverage, we did not evaluate patients' incomes. Last, we did not have access to follow-up data and could not assess the impact of cost conversations on actual costs, adherence, or clinical outcomes.

REAL-LIFE IMPLICATIONS: Altogether, these data evidence the willingness and capability of oncologists and their patients to engage in cost conversations despite time pressure and price opacity. Moreover, they are aware of a wide variety of potential cost-saving solutions and mention them in more than one third of cost conversations. By illuminating categories of cost-reducing strategies and providing example quotes, we highlight potential solutions to patient cost problems that could directly inform clinical practice. **JOP**

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ASSOCIATED CONTENT



Appendix available online

Abstract

Purpose

ASCO identified oncologist-patient conversations about cancer costs as an important component of high-quality care. However, limited data exist characterizing the content of these conversations. We sought to provide novel insight into oncologist-patient cost conversations by determining the content of cost conversations in breast cancer clinic visits.

Methods

We performed content analysis of transcribed dialogue from 677 outpatient appointments for breast cancer management. Encounters featured 677 patients with breast cancer visiting 56 oncologists nationwide from 2010 to 2013.

Results

Cost conversations were identified in 22% of visits (95% CI, 19 to 25) and had a median duration of 33 seconds (interquartile range, 19 to 62). Fifty-nine percent of cost conversations were initiated by oncologists (95% CI, 51 to 67), who most commonly brought up costs for antineoplastic agents. By contrast, patients most frequently brought up costs for diagnostic tests. Thirty-eight percent of cost conversations mentioned cost-reducing strategies (95% CI, 30 to 46), which most commonly sought to lower patient costs for endocrine therapies and symptom-alleviating treatments. The three most commonly discussed cost-reducing strategies were: switching to a lower-cost therapy/diagnostic, changing logistics of the intervention, and facilitating copay assistance.

Conclusion

We identified cost conversations in approximately one in five breast cancer visits. Cost conversations were mostly oncologist initiated, lasted < 1 minute, and dealt with a wide range of health care expenses. Cost-reducing strategies were mentioned in more than one third of cost conversations and often involved switching antineoplastic agents for lower-cost alternatives or altering logistics of diagnostic tests.

INTRODUCTION

Health care–related financial distress remains prevalent in the United States, despite policy efforts to contain costs

and increase insurance enrollment. In 2014, more than one quarter of Americans reported having difficulty paying their medical bills.¹⁻³ This hardship is



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disproportionately common and severe in patients with cancer, who face significantly greater out-of-pocket costs than those without cancer who are healthy or chronically ill with conditions such as diabetes, cardiovascular disease, or mental illness.^{4,5} Health care–related financial distress is not just an economic concern but has also been associated with worse quality of life, lower adherence, and excess mortality.^{6–11}

Given the high financial burden associated with cancer diagnosis and treatment, ASCO released a statement in 2009 that affirmed a critical role for oncologists in addressing out-of-pocket costs with their patients. Calling for greater integration of cost considerations into decision-making efforts, ASCO recommended oncologist-patient communication about cancer costs as a key component of high-quality care.¹² Recognizing the paucity of data on this issue, as well as the centrality of oncologist-patient communication for out-of-pocket cost management, ASCO recommended cost communication as a primary target for future research.

Since that seminal report, several surveys have been published characterizing patient and oncologist preferences and experiences with cost communication. In general, results from these surveys suggest the following: the majority of patients want to discuss out-of-pocket costs with their oncologists,^{13,14} the majority of oncologists believe that it is important to help manage their patients' out-of-pocket costs,¹⁵ and oncologist-patient cost discussions occur infrequently, with more than two thirds of patients reporting rarely or never speaking with oncologists about their costs.^{7,13,16} Although these surveys have provided helpful information about attitudes and experiences with cost communication, few data exist describing the content of these discussions. To address this knowledge gap, we analyzed transcribed patient-physician dialogue from 677 outpatient breast oncology visits occurring across the United States.

METHODS

Sample Description

Visits were selected from the Verilogue Point-of-Practice database, an international corpus of audio-recorded and transcribed clinical encounters. We have described this database and our sample in detail elsewhere.^{17,18} Briefly, Verilogue recruited board-certified physicians and compensated them to audio-record full clinic visits with patients they were seeing for routine clinical care. Patients gave consent before

visits using a double opt-in method and were not compensated in any way.

We obtained from Verilogue the most recent 1,000 encounters for management of breast cancer. We excluded visits with nonphysician providers and those that occurred outside of the United States, leaving a final sample of 677 encounters, which occurred across 56 oncologists.

Analytic Approach

With no detailed or validated definition of cost conversation in the extant literature, we developed a novel, rigorous definition for our analyses. We defined cost conversation as any mention of the patient's out-of-pocket expenses or insurance coverage for a past, present, or potential health care service (example quotes in Results and Table 1). This definition is grounded in communication theory,^{19,20} informed by examples used in previous studies,^{21,22} and shaped by team members' clinical and research experience.^{7,23–26} This definition, as well as its underlying conceptual framework, has been described in detail in prior publications¹⁸ (Appendix, online only).^{17,27}

Visits were first reviewed to determine whether a cost conversation occurred. If a cost discussion was present, we identified who initiated the cost talk (defined as the party making the first explicit statement related to the patient's health care costs). In addition, we determined the total time spent discussing health care costs and identified strategies discussed to reduce the patient's costs.¹⁷

Furthermore, we determined which intervention the cost conversation was related to and categorized it in one of the following four groups: antineoplastic therapies, symptom or comorbidity management, diagnostic tests, ancillary services and supplies, and other. To minimize individual coder biases and mitigate error, transcripts were analyzed independently by at least two team members, and all decisions were assessed for agreement. In cases of agreement, the corresponding decision was assigned as final. When discrepant, the final coding decision was decided by group consensus.

Statistical Analysis

We used Pearson's χ^2 test and Fisher's exact test to compare code frequencies and calculated 95% CIs for all proportions using Clopper and Pearson's exact method.²⁸ Distributions of cost discussion durations were nonnormal, so nonparametric Kruskal-Wallis and Mann-Whitney *U* tests were used to compare cost discussion durations.

Table 1. Example Quotes for Cost-Reducing Strategies**Cost-Reducing Strategy**

Cost-reducing strategies involving care-plan changes

Switch to lower-cost alternative

Dr: So it looks you have pretty bad osteoporosis...you need to go on a medication called Zometa.

Pt: Does Medicare cover this? That's the only thing I have.

Dr: Yeah, it will be fully covered. Um, you only have Medicare, you don't have a secondary? So, you know, that's going to be a little problematic...I mean you're probably going to be responsible for 20%.

Pt: No, I have that with [everything]. Is [Zometa] expensive?

Dr: It is relatively expensive...We could find out the prices before you get it and [my staff] could call you up and let you know. Otherwise, you know the other alternative would be putting you on...Boniva...or Fosamax. Those medications are not cheap either. Probably from a cost spectrum analysis, it probably is going to be much more reasonable to get the infusion. (0:50)

Change dose or frequency of intervention

Dr: Now what are we doing for your overall general pain, aches and pains?

Pt: We decided last time I was here that we were going to go with 40 mg of OxyContin.

Dr: How many at a time, one or two?

Pt: One. We were going to do it three times a day instead of two, but that's not going to work for me.

Dr: What's going to work for you?

Pt: I have to spend \$200 on pain medication, that's how much those pills cost me.

Dr: For three a day?

Pt: Yep, \$198 for 120 of them. So, I'd rather just go back to the 80s.

Dr: Alright, so I'll write for the 80s every 12.

Pt: Yeah. (0:44)

Switch to generic

Dr: Now, the medicine you have now has gone generic. So are you still getting a lot of, a lot of copay?

Pt: Uh, no...not so far.

Dr: Oh. Ok. All right. I'll do a note, right now so the next prescription will make it all generic now. So it will definitely be cheaper.

Pt: Thank you.

Dr: All right.

Pt: I'm so glad. (0:23)

Cost-reducing strategies not involving care-plan changes

Changing logistics of intervention

Dr: We did the last scan in September; maybe do something in December or January, I don't know. Do you have to pay a new deductible in January?

Pt: I think we making, they changing some insurance -

Dr: So, it might be better to do another scan right before your deductible.

Pt: Right.

Dr: So, like end of December we do another scan... (0:24)

Facilitating copay assistance or charity care

Dr: If you need refills [of Femara] let me know.

Pt: I go on Medicare [soon] so I'm going to have to get my -

Dr: Oh, prescription plan. Well, now it's generic so it will be easier now, thank God.

Pt: Well, it's still kind of pricey though.

Dr: Oh, it is?

Pt: Yeah, that would put me in the donut hole so -

Dr: Well, if you, um, you know, our practice now has its own pharmacy and they can look for [assistance] programs for copayment and stuff like that.

Pt: Ok.

Dr: So, if you want, once you get into Medicare, let me know [and] I can call from our pharmacy. What they do is they look at the insurance and see how much, you know, and they will call you, tell you this is your responsibility. If it's something too much they can look and see what will be the best program for you and they will just forward it to them. And they have an [assistance] program... (0:53)

Free samples

Dr: So what's bothering you the most?

Pt: Well, it's the mucus hanging in, in my throat. It's not like my throat's sore but I get to coughing and hacking that stuff up. And I've tried, um, Nyquil Cough. It didn't, yeah, it didn't do nothing.

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Table 1. Example Quotes for Cost-Reducing Strategies (continued)**Cost-Reducing Strategy**

Dr: Okay, tell you what. I can give you Z-Pak. That'll clear your sinuses. This is not the best medication but because you're allergic to penicillin, we're kind of stuck with it, okay? Do you have prescription coverage?

Pt: Not right now. [The Z-Pak] is 80 bucks, isn't it or \$100?

Dr: Maybe more.

Pt: Yeah, and I have to go to my [primary care physician] today, so I was going to have him -

Dr: See if he's got any samples to give you because I have no samples of antibiotics. This is a different kind of office... (0:51)

Change or add insurance plans

Dr: Now do you need something for pain?

Pt: I hope not, but maybe.

Dr: I think I should have you just have something at home, right? What works for you?

Pt: Uh, the Percocet. I hope they're all -

Dr: They're already generic.

Pt: That \$10, \$15, \$75 was terrible.

Dr: Oh, my God. That's ridiculous. Have you recalled meeting with [our social worker] downstairs?

Cg: We did this week. Yes, we did. She thinks I ought to apply for social security disability.

Dr: Good, do that...that will help you with your copays and stuff like that.

Cg: I never, I never in my whole life ever heard of such copays.

Dr: And you know, things are only getting worse. Yeah, the way our insurance is set up, we have to, like, you know, meet a certain deductible. So we pay full price with everything. And they make sure that whatever the [deductible] amount is, you know, you will never meet it the whole year, so you'll be paying for all of your care anyway.

Pt: I had to write a \$600 check for my deductible the other day for them to do that biopsy.

Dr: Oh, my God... (1:13)

Multiple cost-reducing strategies**Free samples; changing logistics of intervention**

Pt: I have this stomach problem, because I haven't, um, purchased a medication yet because Medco wants \$100 for three months at one time. Okay? A hundred dollars for one time for me is not -

Dr: Is this [for] the Nexium?

Pt: It's for the Nexium. They said I could get it. But the thing is I want to find a pharmacist that will take it month -

Dr: Monthly. Okay...We actually have, we might be getting some samples of Dexilant.

Pt: I had it. It didn't work.

Dr: Because that's the only sample we're going to get.

Dr: Really? In fact, they say it's, like, better than the Nexium, so. But for you, only the Nexium works.

Pt: What I'm going to do is find a drug store...[where I] could get a 1-month supply, and then come back and get it. That's better for my pocket.

Dr: Um-hum. Is not easy.

Pt: I don't think a lot of pharmacies know that for a person to come up with \$100 all at once is hard. But if you break it down for them -

Dr: Correct. Correct... (1:04)

Facilitate copay assistance or charity care; change logistics of intervention

Dr: Uh, we have several medicines that, that can used in this situation. Um, I know we've been working with patient assistance program for Abraxane and Aranesp to help pay for your medicines. Um, with IV medication it's relatively easier to do. For oral medications, you do not have any additional prescription coverage other than Medicare part D, correct?

Pt: Yeah...

Dr: Okay...After Abraxane doesn't work, I tend to use an oral drug that's called, uh, Xeloda. But it's relatively expensive. Its average monthly copay for most people, about \$400. I will check with, uh, [staff member], who is doing patient assistance drugs, to see what we can do for, for you to get patient assistance for Xeloda. Two, I will send prescription to a specialty pharmacy, we will see what they can do as well... (0:50)

Facilitate copay assistance or charity care; switch to lower-cost alternative

Pt: And so you think that the pills would be, do you think the pills would be the best route for me?

Dr: Yeah, that's, like you said, it's the best answer. It's an accepted -

Pt: I just -

Dr: Accepted first line treatment. We're supposed to offer it first.

Pt: Those drugs are expensive, aren't they?

Dr: It depends on your copay plans and all that.

Pt: I know. I saw them. I know these shots alone are \$5,000.00. Wow.

(continued on following page)

Table 1. Example Quotes for Cost-Reducing Strategies (continued)

Cost-Reducing Strategy

Dr: Okay, once I write prescriptions for you, you're going to pick up the prescription for the pill. You're going to take it to the pharmacy and see what the copay. If it's a little large you're not going to take the pills. You're going to go back to the social worker and arrange for the company assistance to get access, so you can access it with reasonable amount of money, and if you don't want to pay any copay we're going to go with the injectables. You just come back here instead of taking pills, and go on Taxotere, or maybe we'll give you Gemzar. There's plenty of options. There's just plenty of things. (1:05)

NOTE. Fillers (eg, "um," "you know") have been removed from dialogue for brevity, and punctuation has been added to improve readability. Duration is provided in parentheses for each cost conversation in the following format: (minutes:seconds).

Abbreviations: Cg, caregiver; Dr, physician; IV, intravenous; Pt, patient.

RESULTS

Study Population

A full description of patient, oncologist, and visit characteristics is presented in the online supplement (Appendix Table A1, online only). Most patients were 55 to 74 years old (54%), white (71%), and female (99%). Only three patients (< 1%) reported being uninsured, which is significantly lower than national estimates.²⁹ Oncologists were predominantly male (89% in our sample; 70% nationally),³⁰ and most had < 20 years of clinical experience (81%). Visits were located in 19 different states and occurred between June 2010 and August 2013 in community-based, private practice oncology clinics across the United States.

Frequency of Cost Conversations by Clinical Topic

Overall, 147 of 677 clinic visits (22%; 95% CI, 19 to 25) contained a cost conversation. Cost conversations occurred more commonly in encounters involving female oncologists (30%) than those involving male oncologists (21%; $P = .054$). Cost conversation frequency did not differ significantly across months of the year ($P = .90$) or by the year in which visits took place ($P = .14$). A significantly greater percentage of cost conversations were initiated by physicians than by patients (59% v 37%, respectively; $P < .001$; Fig 1). Patient caregivers or companions initiated 3% of cost conversations and nurses initiated 1%. Patient-initiated cost conversations occurred more frequently in visits involving white patients (12% of visits) than those involving black patients (3% of visits; $P = .001$).

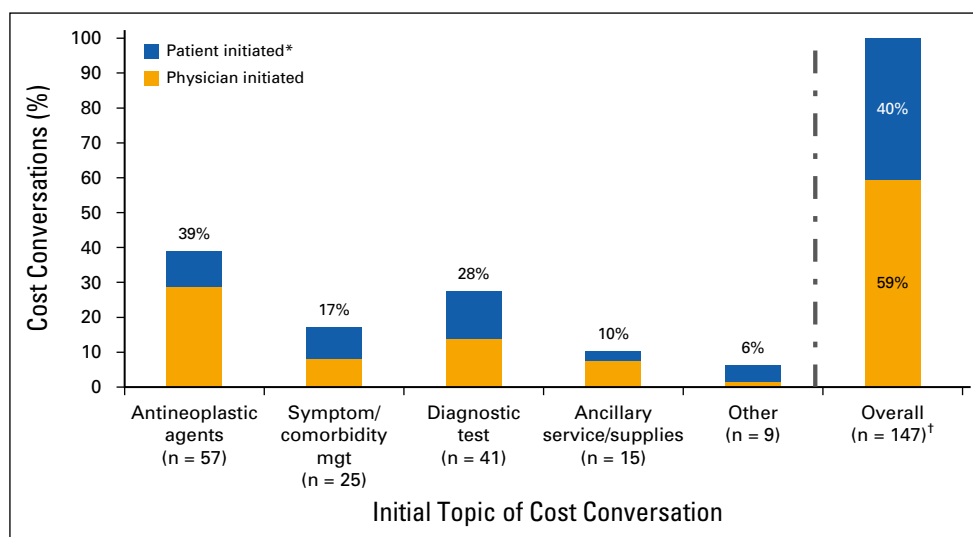


Fig 1. Cost conversation initial topics and initiators. Initial topics of cost conversations were classified into five mutually exclusive categories shown above, with relative frequencies displayed as percentages above each bar. Colors in each bar demonstrate who initiated each cost conversation. Topic percentages do not add to 100 because of rounding. (*) Patient-initiated category comprises 54 patient-initiated cost conversations and five initiated by caregiver/companions; these were combined into one category here to simplify data presentation. (†) Percentages do not sum to 100 because one cost conversation was nurse-initiated. MGT, management.

The most common cost conversation topic was antineoplastic therapy (39% of initial cost conversation topics). The second most common topic was diagnostic testing (27%), followed by symptom/comorbidity treatments (17%), ancillary services/supplies (10%), and various other interventions (6%). Among the antineoplastic therapies, the cost of endocrine therapies (eg, tamoxifen, letrozole, anastrozole) was most frequently discussed (14% of all clinical topics), followed by targeted agents (eg, trastuzumab, lapatinib; 11% of all clinical topics), chemotherapy (eg, docetaxel, carboplatin; 7%), and bone therapies (eg, zoledronic acid, denosumab; 7%). Among the diagnostic tests, the costs of staging/restaging scans were most commonly discussed (eg, positron emission tomography [PET] scan, computed tomography scan; 16% of all clinical topics), followed by laboratory tests (eg, blood counts, *BRCA* testing, *Oncotype DX*; 6%) and cardiac function tests (eg, echocardiography, multigated acquisition scan; 4%). The cost of surgical procedures, radiation therapy, and hospital visits was discussed in < 3% of cost conversations. Notably, 10% of cost conversations addressed two different clinical topics, and 2% mentioned three different clinical topics.

Oncologist-Initiated Versus Patient-Initiated Cost Conversation Topics

Oncologists and patients differed with respect to the initial cost conversation topics they brought up (Fig 1). The majority of oncologist-initiated cost conversations (62%) addressed

expenses for pharmacotherapy of some kind, whereas the majority of patient-initiated cost conversations (57%) were concerned with costs of nonpharmacologic interventions. A significantly greater percentage of patient-initiated cost conversations addressed other topics (a variety of infrequently discussed topics, such as physician office visits, cost of surgery, radiation therapy, and miscellaneous fees) than physician-initiated cost conversations (13% v 2%, respectively; $P = .03$)

Cost Conversation Duration

The median duration of cost conversations was 33 seconds (interquartile range, 19-62 seconds), out of a median appointment time of 12 minutes and 2 seconds (interquartile range, 6 minutes and 54 seconds–15 minutes and 57 seconds). No significant difference in cost conversation duration was observed between cost conversations initiated by physicians versus patients (median duration, 34 v 31 seconds, respectively; $P = .88$).

Cost conversation duration differed significantly by initial cost topic discussed ($P = .03$), with the longest cost conversations observed for discussions of bone therapies (median duration, 60 seconds) and endocrine therapies (median duration, 52 seconds) and the shortest cost conversations observed for symptom/comorbidity treatments (median duration, 29 seconds). In addition, cost conversations containing discussion of cost-reducing strategies were significantly longer than those without such discussions (median duration, 58 v 30 seconds, respectively; $P < .001$; selected quotes with durations in Table 2).

Table 2. Types and Frequencies of Cost-Reducing Strategies Discussed for Various Cost Topics in Breast Cancer Visits (N = 677)

Strategy	Antineoplastic (n = 64)	Symptom/Comorbidity Management (n = 28)	Diagnostic Test (n = 47)	Other (n = 30)	Total (N = 169)
Strategies requiring care-plan changes					
Switch to lower-cost alternative	9	7	5	0	21
Switch to generic	5	3	0	0	8
Change dosage/frequency or withhold	1	2	3	0	6
Strategies not requiring care-plan changes					
Change logistics	4	5	5	2	16
Copay assistance/coupons	8	1	1	0	10
Free samples	3	1	0	0	4
Change insurance, disability enrollment	2	1	0	1	4
Total	32	20	14	3	69

NOTE. No evidence was required that a cost-reducing strategy was pursued, only that it was discussed. N represents the total number of times each cost topic was discussed. Total number of cost topics discussed (N = 169) is greater than the total number of cost conversations (n = 147), because 14 cost conversations addressed two different cost topics, and four cost conversations addressed three different cost topics.

Discussion of Cost-Reducing Strategies

Thirty-eight percent of cost conversations contained discussion of cost-reducing strategies (95% CI, 30 to 46). Two main categories of cost-reducing strategies were identified: those that lowered patient costs by changing the care plan and those that reduced patient costs without changing the care plan. Overall, these two categories of cost-reducing strategies were discussed with nearly equal frequency: 51% of cost-reducing strategies involved care-plan changes, and 49% did not involve care-plan changes (Table 2). The greatest portion of cost-reducing strategies addressed antineoplastic therapies (46% of all cost-reducing strategies), followed by symptom/comorbidity management therapies (29% of cost-reducing strategies) and diagnostic tests (20% of cost-reducing strategies; $P = .004$; post hoc comparison between antineoplastics and diagnostics, $P = .002$). Specifically, cost-reducing strategies most commonly addressed endocrine therapies (26% of cost-reducing strategies) and symptom-alleviating treatments (22% of cost-reducing strategies).

Cost-reducing strategies involving care-plan changes

Overall, the most commonly discussed cost-reducing strategy was switching to a lower-cost intervention (Table 2). In the context of antineoplastic therapies, switching to lower-cost alternatives often involved transitioning from oral to intravenous therapies in the same class (eg, risidronate to zoledronic acid). For symptom/comorbidity management therapies, reducing costs commonly involved transitioning from sustained-release oxycodone to either short-acting oxycodone or long-acting morphine and switching from ondansetron (especially sublingual formulation) to less-expensive antiemetics like prochlorperazine. For diagnostic tests, switching to a lower-cost alternative commonly involved using computed tomography scans instead of PET scans.

The second most commonly discussed cost-reducing strategy involving care-plan changes was switching to a generic formulation of the medication in question. This strategy was particularly prominent for endocrine therapies, in which branded aromatase inhibitors were exchanged for their generics. For example, one patient who had experienced high copays was switched from Femara (Novartis; Basel, Switzerland) to its generic, letrozole. In the context of symptom management therapy, switching to generic was discussed to reduce patient costs for antiemetics, especially Zofran (GlaxoSmithKline; Bretford, United Kingdom) and over-the-counter analgesics.

The third most frequently discussed cost-reducing strategy involving care-plan changes was altering the dosage or frequency of an intervention. On several occasions, this strategy was discussed as a means of ensuring coverage for potentially high-cost interventions. In the context of diagnostic testing, this sometimes involved scheduling PET scans less frequently. This strategy was also used in several visits to reduce cost or ensure coverage for opiate analgesics.

Cost-reducing strategies not involving care-plan changes

The most commonly discussed cost-reducing strategy not involving care-plan changes was altering logistics of the intervention to reduce costs (ie, changing the timing, location, or source; Table 2). This strategy occurred commonly in the setting of diagnostic tests, with oncologists and patients scheduling potentially expensive diagnostics (especially PET scans) late in the calendar year, after the patient had met her deductible (Table 1). This strategy was also used to reduce patient costs for pharmacotherapy and supportive equipment, such as compression sleeves.

Facilitating copay assistance or coupons was the second most frequently discussed strategy to reduce patient costs without changing the care plan. This strategy was particularly prominent in the context of endocrine therapies, for which copay-assistance cards and charity care programs were discussed. This strategy was also discussed as a means to reduce patient costs for expensive oral chemotherapeutics (eg, Xeloda [Genentech; San Francisco, CA]), targeted agents (eg, Tykerb [Novartis; Basel, Switzerland]), and bone therapies (eg, Xgeva [Amgen; Thousand Oaks, CA]).

DISCUSSION

In a content analysis of transcribed dialogue from clinic visits, we found that oncologist-patient cost conversations occurred in approximately one in five visits, were mostly initiated by oncologists, typically lasted < 1 minute, most frequently addressed the cost of antineoplastic therapies, and commonly involved discussion of cost-saving strategies. To our knowledge, this represents the largest investigation of cost conversation dialogue in the oncology setting to date. Overall, our results suggest that oncologists and patients with breast cancer are willing and able to discuss patient costs during outpatient encounters, despite time pressure and price opacity. Importantly, our findings also highlight oncologist-patient resourcefulness and awareness in discussing a wide variety of different cost-saving strategies.

These results are important for several reasons. First, they counter previous survey findings on the incidence of cost conversations. In a prior survey conducted by Irwin et al,¹³ 14% of patients with breast cancer reported ever discussing costs with their oncologists. In a general oncology setting, Bestvina et al⁷ found that 19% of patients reported ever discussing costs with oncologists. By contrast, our study suggests that cost conversations are more common, occurring in approximately one in five visits. Notably, these cost conversations took place in relatively brief (median duration, 12 minutes 2 seconds) clinic visits with returning patients.

Second, our results counter prevailing opinions expressed by oncologists and patients about the utility of cost communication. One of the most commonly cited barriers to cost conversation is the perceived lack of viable solutions.^{14,24,31,32} Contrary to this notion, we found that cost-reducing strategies were discussed in more than one third of cost conversations, and that at least seven different subtypes of cost-reducing strategies were mentioned. This suggests that oncologists and patients are aware of myriad cost-saving strategies, and may be able to provide targeted solutions for patients' cost problems. This is in alignment with other results published by our group, showing that the majority of patients reported lower out-of-pocket costs as a result of cost discussions.³³ Altogether, these data may suggest potential utility of cost conversations; however, additional investigation is needed to verify a positive impact of cost conversations on economic and clinical outcomes.

Third, our study calls into question the frequently cited barrier of insufficient time by demonstrating that cost conversations have a median duration of 33 seconds in general and 58 seconds when involving cost-reducing strategies.^{14,24,31,32} Notably, some cost conversations lasted > 3 minutes, which could be prohibitive for some clinicians, especially in visits with medically complex patients. However, these relatively long cost conversations were rare (3% of all cost conversations) and often addressed critical problems of patient access and affordability. Per ASCO guidelines, addressing patient costs is a critical component of high-quality care¹²; with greater numbers of patients signing up for high-deductible health insurance plans,³⁴ persistently high rates of health care-related financial distress,¹⁻³ and myriad negative downstream effects of such financial distress,⁶⁻¹¹ some may argue that addressing patient costs is a critical task for clinicians even if it takes 3 to 5 minutes in an already time-pressured clinic visit.^{25,23,35-37} Nevertheless, our results

suggest that short, targeted cost conversations may be sufficient to assess for financial toxicity and deliver cost-saving measures directly, or indirectly by referring for financial counseling.

Although our data may suggest greater cost conversation incidence and more extensive knowledge of cost-saving solutions than previously expected, they do not suggest that cost conversations are occurring as often as needed or that cost conversations are as effective as possible when they do occur. On the contrary, we found several areas of cost communication in which oncologists may need improvement. For example, cost conversations sometimes lost focus, dwelling in patient and oncologist frustrations rather than pursuing solutions for cost or coverage.²⁷ On other occasions, oncologists did not fully address patient cost concerns or even ignored them. In addition, we observed an asymmetry between oncologist- and patient-initiated cost topics; whereas oncologists most often initiated cost conversations about antineoplastic therapies, patients most often initiated cost talk related to diagnostic tests. This discrepancy may reflect prevalent desire or unmet need among patients related to the costs of their diagnostic tests, which could potentially be addressed by greater physician-initiated conversation on this topic.

Notably, there were a few aspects of cost conversation in which oncologists demonstrated remarkable skill. For example, oncologists frequently reaffirmed commitment to their patients and built rapport in the midst of addressing difficult or frustrating cost/coverage barriers. In addition, some oncologists demonstrated detailed knowledge of drug prices, despite significant price opacity and substantial variation among patients. Last, some oncologists demonstrated deep knowledge of local and national resources with which to connect their patients for financial assistance.

This investigation has several limitations. First, the study sample limits the generalizability of our findings because it was composed entirely of breast oncology visits. Cost conversations in this setting may not represent those in other oncology settings, where treatments, prognosis, and patient demographics may differ. For example, cost conversations in surgical oncology visits may vary considerably from those observed in medical oncology visits, given differences in patient characteristics and interventions being offered. Second, we did not have access to data detailing patients' disease stage or previous therapies they received. Consequently, we could not assess how disease stage affected cost conversations. Third, although we sampled patients across a broad range of

geographic regions and assessed insurance coverage, we did not evaluate patients' incomes. Accordingly, our study sample may not be generalizable from a financial standpoint. Fourth, we had access to only one recording per patient; thus, it is unknown whether cost was discussed in visits before or after the one recorded. Because earlier cost conversations may obviate the need for future ones, our study may have underestimated cost conversation incidence. Fifth, we did not have access to follow-up data and could not determine the impact of cost conversations on actual cost, adherence, or clinical outcomes.

In conclusion, in what we believe is the largest analysis of cost conversation content in the oncology setting to date, we found that cost conversations are occurring in more than one in five clinic visits, are mostly initiated by physicians, and are relatively brief, typically lasting < 1 minute. Contrary to prior evidence, our results suggest that oncologists and patients with breast cancer are aware of a wide variety of potential cost-reducing solutions and mention them in more than one third of cost conversations. Altogether, these data may evidence the willingness and capability of oncologists and patients with breast cancer to engage in cost conversations despite time pressure and price opacity. Additional research is needed to determine the impact of cost conversations on salient clinical, economic, and patient-centered outcomes and investigate educational interventions to foster effective and efficient cost conversations along the spectrum of disease stage. **JOP**

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AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

Discussing Health Care Expenses in the Oncology Clinic: Analysis of Cost Conversations in Outpatient Encounters

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Appendix

Additional Details About the Study Sample

A total of 677 breast cancer visits were included in this study. Each visit featured a unique patient (n = 677), but oncologists (n = 56) contributed multiple records. Along with visit recordings, physicians submitted clinical and demographic data for patients and themselves. Neither party was aware of the specific research questions for which the data would be used. All protected health information was removed from visit transcripts and clinical data sets before our analysis. The Duke University Institutional Review Board approved this study.

Visit Locations

Visits were located in the United States in nine major geographic regions, 19 states, and 52 zip codes. Visit locations were classified as urbanized areas, urban clusters, or rural areas by matching zip codes with 2010 US Census population data and applying definitions in the Urban Area Criteria for the 2010 Census (Bureau of the Census: Federal Register 76;1-15, 2011). Less than 10% of visits occurred in rural areas (population < 2,500); > 90% occurred in urbanized areas or urban clusters (populations > 50,000, and 2,500 to 50,000, respectively).

Insurance Plans

Only three patients in our study sample reported being uninsured (< 1%). Among those with insurance, 51% were enrolled in public plans (eg, Medicare, Medicaid, Tricare, COBRA), and 49% were enrolled in private plans (eg, Aetna, Blue Cross Blue Shield; 49%).

Cost Conversation Definition Development

Briefly, we developed definitions of cost conversation phenomena using an inductive application of summative content analysis, which proceeded in several phases: review of published literature to identify extant definitions, immersion in the transcripts to create data-driven definitions of emerging concepts, and iterative rounds of inductive analysis to adjust, refine, merge, and split definitions. To enhance the breadth and depth of our analysis, these phases were carried out with a multidisciplinary group of undergraduate and graduate students (with training in health policy, consumer behavior, medicine, or linguistics), trained conversation analysts, and clinician investigators. This process and its theoretical underpinnings are discussed in detail in a recent publication from our group.¹⁸

Team members with clinical experience (P.A.U., W.G.H.) supervised coder training and discrepancy resolution to ensure proper interpretation of clinical matters. All coding was applied using NVivo software (Version 10, 2014; QSR International, Melbourne, Australia).

Cost Conversation Topic Categories: Descriptions and Examples

Five key cost conversation topic categories emerged from our content analysis. These are listed below, along with descriptions and specific examples.

- Antineoplastic therapies—all pharmacologic cancer treatments, such as endocrine therapy (eg, tamoxifen, anastrozole), chemotherapy (eg, docetaxel, carboplatin), targeted agents (eg, trastuzumab), and bone therapy (eg, zoledronic acid, denosumab).
 - Symptom or comorbidity management—analgesics (eg, oral or transdermal opiates, nonsteroidal anti-inflammatory agents), antiemetics (eg, ondansetron, promethazine), and bowel therapies such as stool softeners or laxatives.
 - Diagnostic tests—all imaging and laboratory tests (eg, positron emission tomography, *BRCA* testing, blood chemistries, *Oncotype DX*).
 - Ancillary services and supplies—dental care, nursing and wound care, physical therapy, podiatry, acupuncture, as well as medical equipment and supplies (eg, wheelchair, cane, home oxygen, positive airway pressure machine, wig).
 - Other—a variety of topics discussed infrequently, such as cost of surgery, radiation therapy, physician office visits, and other fees.
- Statistical analysis was performed using R software. All authors had full access to the data and take responsibility for its integrity.

Table A1. Patient, Oncologist, and Visit Characteristics

Characteristic	Measure
Patients	
No.	677
Age, years, %	
19-34	1
35-54	28
55-74	54
≥ 75	17
Sex, female, %	99
Race, %	
White	71
Black	19
Hispanic	6
Other	4
Insurance status, %	
Private	49
Public	51
Uninsured	0
Oncologists	
No.	56
Recorded visits, median (IQR)	9 (5-19)
Sex, male, %	89
Years in practice, %	
0-10	37
11-20	44
21-30	15
≥ 31	4
Visits	
No.	677
Dates	Jun 2010 to Aug 2013
Locations by US region,* %	
East North Central	14
East South Central	3
Middle Atlantic	8
Mountain	12
New England	6
Pacific	11
South Atlantic	33
West North Central	3
West South Central	9

NOTE. Values are percentages of total nonmissing observations unless otherwise indicated. Less than 1% of observations are missing. Percentage totals do not all sum to 100 because of rounding.

Abbreviation: IQR, interquartile range.