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Patient-physician Communication on Medication Cost during Glaucoma Visits

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Abstract

Significance—This paper is the first to investigate the nature of medication cost discussions between ophthalmologists and glaucoma patients. Only 87 of the 275 office visits analyzed had a discussion of medication cost. Providers should consider discussing medication cost with patients to identify potential cost related barriers to medication use.

Purpose—Glaucoma is an incurable chronic eye disease affecting a growing portion of the aging population. Some of the most commonly utilized treatments require life-long use, requiring high patient adherence to ensure effectiveness. There are numerous barriers to glaucoma treatment adherence in the literature, including cost. The aim of this secondary analysis was to describe the frequency and nature of patient-physician communication regarding medication cost during glaucoma office visits. **Methods:** This was a mixed methods secondary analysis of video recorded participant office visits (n=275) from a larger observational study of glaucoma communication. We analyzed medical information, demographic characteristics, and interviewer-administrated questionnaires, as well as verbatim transcripts of interviews.

Results—Only 87 participants discussed medication cost during their glaucoma office visit. The majority of the subjects that discussed cost had mild disease severity (51%), took one glaucoma medication (63%) and had Medicare (49%) as well as a form of prescription insurance (78%). The majority of glaucoma office visits did not discuss medication cost and providers often did not ask about cost problems. Of the few conversations related to cost, most focused on providers offering potential solutions (n=50), medical and prescription service coverage (n=41), and brand or generic medication choices (n=41).

Conclusions—Our findings are similar to previous studies showing few patients have conversations with providers about the cost of glaucoma medications. Providers should consider

bringing up medication cost during glaucoma office visits to prompt a discussion of potential cost related barriers to medication use.

Keywords

medication cost; communication; generic drugs; medication adherence; barriers

Glaucoma is an incurable chronic eye disease affecting over 2 million people in the United States.¹ With a growing aging population, glaucoma is projected to affect 3 million people by 2020. Since there is no cure for glaucoma, treatment has focused on delaying progression. Intraocular pressure (IOP)-lowering medication eye drops are typically prescribed for life-long use to slow the progression of the disease; however, the effectiveness of this treatment heavily depends on patient adherence to the regimen.²⁻⁴ There are numerous barriers to glaucoma treatment adherence noted in the literature, including medication side effects, eye drop administration, literacy levels, and the complexity of medication regimens.^{3, 5-8}

The cost of glaucoma medications has been cited as a significant barrier to adherence. Schmier and coworkers found that increased costs were associated with increased severity or lack of control over IOP, allowing glaucoma to progress to more severe stages.⁸ In a study by Patel and Spaeth, interviews with 100 glaucoma patients identified unaffordability to be a significant reason for non-adherence to glaucoma eye drops.⁹ Another study surveyed 324 glaucoma patients taking at least 2 glaucoma medications to examine problems associated with medication adherence; difficulty paying for medications was the second most commonly cited problem identified as contributing to glaucoma medication non-adherence.⁷ The researchers also found that patients who paid more out-of-pocket per month and who did not have prescription drug insurance reported greater difficulty paying for their medications.⁷ One of the avenues pursued to better understanding the impact of cost on glaucoma treatment adherence is patient-provider communication, and how these conversations might be shaped or impact adherence. Blumberg and coworkers investigated the effect of Medicare Part D implementation on rates of cost-related nonadherence and cost-reduction strategies. The authors found that cost-saving measures decreased with Medicare Part D implementation but patients' failure to fill prescriptions because of cost remained the same.²

The literature base is expanding in the area of patient-physician communication and its relationship to medication adherence in the glaucoma patient population.¹¹⁻¹³ However, the literature is sparse when investigating patient-physician communication about medication cost and its relationship to medication adherence.¹⁴ Although there is a paucity of cost-related communication studies in glaucoma, other disease states, such as rheumatoid arthritis and diabetes, have investigated this relationship thoroughly.^{15,16} Expanding patient-provider discussions to include the cost of glaucoma medications may help physicians and the health care community understand the role of cost in adherence and help identify strategies to overcome cost and financial barriers. The aim of this secondary analysis was to describe the frequency and nature of patient-physician communication regarding medication cost during glaucoma office visits.

METHODS

Procedure

Participants (n = 275) in this mixed methods secondary analysis were drawn from a larger observational study of glaucoma communication and patient outcomes of English-speaking adult glaucoma patients (n = 279) and ophthalmologists (n = 15) from 6 ophthalmology clinics located in 4 states from 2009–2012.¹⁷ Patients were eligible for the primary study if they were ≥ 18 years of age, had a diagnosis of glaucoma, were mentally competent to participate and were not blind in both eyes (no light perception). Provider and patient consents were obtained for the primary investigation after the study was explained. The institutional review boards (IRBs) at the University of North Carolina at Chapel Hill, Duke University, Emory University, and the University of Utah approved this study, and the study followed the tenets of the Declaration of Helsinki.

Measurement

We collected demographic data during the baseline visits via interviewer-administered questionnaires and from medical record abstractions. We also assessed patients' chronic comorbid conditions by dichotomizing their responses (yes or no) and included the following: diabetes, high blood pressure, high cholesterol, arthritis, hypothyroidism, heart disease, and depression. We assessed glaucoma severity using the visual field staging system presented by Mills et al (2006).¹⁸ The four stages are: stage 1 (early glaucoma), stage 2 (moderate glaucoma), stage 3 (advanced glaucoma), and stage 4 (severe glaucoma). In the analysis, severity was evaluated both as a categorical variable and dichotomized variable. The dichotomized variable was defined as early versus moderate to severe glaucoma. For patients with glaucoma in both eyes, the severity variable was determined based on the worse eye. Medication information was extracted from the patients' medical records. We assessed if patients were newly prescribed glaucoma medication at the baseline visit or if they were currently prescribed medication. We also assessed patients' household income levels, health insurance, prescription insurance, and difficulty in paying for glaucoma medications using an interviewer-administrated questionnaire.

To examine patient-provider communication of cost and financial pressures, we analyzed the baseline transcripts from the larger study of patient ophthalmology visits. The ophthalmology visits were video-recorded by a research assistant and transcribed verbatim with identifiers removed. A detail coding tool was developed over 1 year with expert input from communication experts and ophthalmologists on the study team. This study focuses on the patient-provider communication data collected during the baseline office visit.

We also administered several questionnaires during the baseline visit, including the Rapid Estimate of Adult Literacy in Medicine (REALM). The REALM is a validated, rapid screening instrument designed to identify patients who have difficulty reading common medical and lay terms used in patient education materials.¹⁹ In the analysis, the REALM was dichotomized to eighth grade and below (REALM score of 0–60) or ninth grade and above reading level (REALM score of 61–66) since patients reading below ninth grade have

trouble reading most patient education materials. Physician demographics and characteristics were also obtained at baseline visits with a questionnaire.

Analysis of the verbatim transcripts of the video recordings were conducted by two independent readers using the developed coding instrument, referred to as the supplemental coding instrument. The coding instrument and source, range, and reliability of each of the variables are presented in Appendix 1 and Appendix Table A1. The supplemental coding instrument broke communication down into seven sections: 1) cost discussion and discussion initiator (patient or physician), 2) overall medication and other cost discussions, 3) provider behavior regarding cost discussions, 4) patient behavior regarding cost discussions, 5) insurance and drug cost, 6) samples, and 7) medication discussion. The inter-coder reliability ranged from 0.77 to 1.00 for the 35 transcripts coded by the two independent coders.

Statistical Analysis

Descriptive analyses were conducted using IBM SPSS version 21, with statistical significance set at $p < 0.05$. Chi-square tests for categorical variables, or t-tests for continuous variables, were used to assess demographic differences in whether cost discussions occurred. Patient, medication and financial characteristics are presented as percentages. The frequency of medication cost discussions are presented as a percentage, with visits having medication cost discussions as the numerator and total glaucoma office visits as the denominator. The initiator of cost discussions was calculated as a percentage of patients initiating discussions and percentage of physicians initiating discussions. The number of glaucoma office visits in which a patient indicated cost was a problem was recorded as the percentage of total visits and visits in which cost was discussed. We describe the nature of patient-physician communication regarding medication cost using the communication variables in Appendix Table A1 (available at [LWW insert link]). The second coder was used to assess the inter-coder reliability. Both coders were masked to patient demographics and the second coder was masked to the analysis hypothesis that cost would not be discussed during the baseline visit. Verifying the themes occurred throughout the data analysis process to assure methodological rigor. After the transcripts were double coded, the inter-coder reliability was assessed using an intra-class correlation coefficient (ICC). A two-way mixed ICC with consistency was used where coder effects are random and measures effects are fixed. Single measures ICC was recorded because only a portion of the transcripts was coded by two coders. Appendix Table A1 (available at [LWW insert link]) includes information on the inter-coder reliability for each of the communication variables.

RESULTS

Demographics and characteristics of the 275 participants are presented in Table 1. Approximately half (57.5%) of the participants were women and participants had an average age of 66.2 years. The majority of participants were White (58.1%) and had a literacy level of 9th grade or above (88.4%) according to the REALM. Over a quarter of participants had an annual household income greater than \$80,000 (26.7%). The majority of subjects had a

mild disease severity (60.7%). The two most common chronic comorbid diseases were high blood pressure (60.5%) and high cholesterol (53.5%). Most subjects had Medicare (57%) and the majority had some form of prescription insurance (89.7%). The majority of subjects only took one medication (72.4%) for their glaucoma.

Nature of Patient-Provider Communication during Glaucoma Office Visits

Table 2 presents a summary of the percentage and frequency of each of the communication variables discussed. Each of the communication variables are further discussed below with verbatim patient and physician statements from the glaucoma office visit transcripts.

Overall Medication and Other Cost Discussions

Eighty-seven of the 275 successfully videotaped office visits contained a medication cost discussion, whether initiated by the physician or the patient. Patients indicated that cost was a problem in 13 (4.7%) of the 275 participant visits examined. Patients indicated cost may be a problem for them, such as one patient asking, “How much does this cost, because I don’t have insurance?” Another patient stated: “Well I quit using the Xalatan because I didn’t have any insurance or anything to help me pay for it.”

There were two statistically significant differences between patients who indicated cost was a problem and those that did not. Among patients with no medical insurance, 2 (28.6%) indicated cost was a problem while only 11 (4.1%) of patients with medical insurance indicated cost was a problem (Pearson chi-square = 0.07; $p = .003$). The majority of patients (91.7%) who indicated cost was a problem were Non-African American (Pearson chi-square = 4.11; $p = .043$).

Provider Behavior

Physicians asked about medication cost potentially being a problem in 4 of the videotaped glaucoma office visits. Physicians asked questions such as: “Any problems affording them? You’re OK with that?” or “Any problems with cost?”

Physicians proposed a solution to a potential cost problem in 17.9% of the total visits analyzed. As one physician stated:

Now if you have trouble with that brand because of your pharmacy benefit plan just call the office and we’ll get you a different brand. There are three brands right now that are about the same. So if they don’t work well it depends on which company pays them off more.

Another solution proposed by physicians was to switch to a generic medication. Physicians proposed a solution to a potential cost problem in 22% of the visits where patients were taking one glaucoma medication, and during 10.1% of visits where patients were taking two or more glaucoma medications (Pearson chi-square = 5.76; $p = .016$). In addition, physicians proposed a solution to a potential cost problem in 14.7% of visits with prevalent glaucoma medication users and 33.3% of visits with patients starting glaucoma medications for the first time (Pearson chi-square = 9.66; $p = .002$).

Physicians recommended that patients work with their pharmacists to lower medication cost in three of the glaucoma office visits. The following is an example of how physicians suggested patients utilize their pharmacist to lower medication costs:

You can ask the pharmacy. Why don't you do this just ask your pharmacist what it would be for 3 months. Often it is not 3 times. You know they give you a little bit of a discount for getting sometimes.

Physicians asked the patient how much they were paying for their medications in 2.2% of the videotape recorded glaucoma office visits. As one physician asked, *"Do you know how much you're paying for it now?"* Another physician asked about copays: *"What are you paying for a copay? I'm just curious."*

Physicians recommended their glaucoma patients try a 3-month supply to reduce medication cost in 6 of the visits. As one physician stated:

Let's go back on that. Twice a day. And if I write a three months supply do you get a break with that? Is that how it works?

Another physician discussed administering a bulk supply to help with costs.

Patient Behavior

Patients discussed changing their medication regimen because of a cost problem in 6.1% of the 275 visits examined. The following example statement was made by a glaucoma patient where they discuss changing their medication regimen due to a cost problem:

Sometime maybe I forget purposely because they're so darn expensive I mean I figure if I use them half as much I'll only pay half the money.

Patients discussed coping strategies used in the past to deal with cost problems in 5 of the videotape recorded glaucoma office visits. As one patient stated:

I changed some other medications I got generic and some of blood pressure stuff and all. And uh, and so basically all my other medications are free.

Insurance and Drug Cost

Patients and physicians discussed health insurance or prescription drug coverage in 14.7% of the videotape recorded glaucoma office visits. The following example is a physician statement regarding health insurance and prescription drug coverage:

You know if you wanted to check and find out if that medicine is cheaper on your insurance plan, we're happy to switch you over.

A higher proportion of patients discussed health insurance or prescription drug insurance if they were starting glaucoma medications for the first time (29%) compared to patients already on glaucoma medications (12%) (Pearson chi-square = 10.38; $p = .001$). No other patient, medication, financial, or physician characteristics were significantly different between patients who discussed health insurance or prescription drug insurance and patients who did not.

Coinsurance or copayment was discussed in 11.1% of the 275 visits examined. As one patient asked and the physician responded:

Patient: *How expensive is this stuff?*

Physician: *Well, full price without insurance coverage it's pretty expensive, probably over one hundred dollars a bottle depending on the pharmacy.*

Medication assistance programs were discussed in six of the visits. As one physician stated:

So you have no insurance well we'll try to give it, we'll try to submit it to ____ (name of company) has an insurance plan one of these things for needy people. If not we'll try to supply it to you. How does that sound?

And another physician noted:

The other question is a card that for the rest of the year it would get you the prescription for only twenty-five dollars a bottle. So that should save you some money. I don't know about that only the instruction. You have to read it and register.

Four dollar generics were discussed in seven of the videotape recorded glaucoma office visits. The following example is a physician statement relating to four dollar generics.

Physician: *Okay I'm going to write down add Pilocarpine and I would go to Walmart or Target it's on the four dollar list, if it's not too much out of your way.*

Samples

There were no videotape recorded glaucoma office visits where a patient requested samples from a physician. Physicians discussed providing samples to their patients in 6.5% of the total visits examined. One physician stated:

That was Travatan so you switched to Lumigan and apparently you did better with Lumigan. So I guess what I would suggest is we try the Lumigan and let me just give you a sample to see if that works. OK?

There was a significant difference in the type of practice an ophthalmologist worked in and providing glaucoma medication samples. In private practices, 13% of glaucoma office visits had a discussion of physicians providing samples while in academic medical centers, 2.9% of glaucoma office visits had a discussion of physicians providing samples (Pearson chi-square = 10.70; $p = .001$). There were significant differences in the discussion of physicians providing samples and patients being new or existing glaucoma medication users. Ten patients (19.6%) on glaucoma medications for the first time had a physician discuss samples while eight (3.6%) existing glaucoma medication users had a physician discuss providing samples (Pearson chi-square = 17.47; $p < .0001$). Physicians discussed providing samples in 25% of visits with patients who did not have prescription drug insurance and 5.4% of visits with patients who did have prescription drug insurance (Pearson chi-square = 9.46; $p = .002$).

Physicians discussed being unable to provide samples in two of videotape recorded glaucoma office visits. As one physician noted:

They quit giving out samples because, because they're going to be out in a generic so, I don't have any samples to give you.

Medication Discussion

The term brand or generic was used in 19% of the visits. An example of one conversation is below:

Patient: *We have a question. Is there a generic?*

Physician: *So there is not a generic for Travatan but Travatan does have a cousin of a medicine called Xalatan. And that has just recently become generic a few months ago.*

There were no statistically significant patient, medication, financial, or physician characteristic differences between patients who had office visits where the term brand or generic were used and those that did not.

Physicians initiated a discussion of brand or generic glaucoma medications in 14.7% of videotape recorded glaucoma office visits. As one physician stated:

The drops you started is from a class of drugs that's usually our first choice when we treat glaucoma and there are no generic in that.

There were no statistically significant patient, medication, financial, or physician characteristic differences between patients that had a glaucoma office visit where the physician initiated the discussion of brand/generic and those that did not.

Physicians explained the difference between brand and generic medications in two of the videotape recorded glaucoma office visits. The example below is an explanation the physician gave regarding the differences between brand and generic medications:

Physician: *There is a generic formulation of it. ... So I can either write it as a brand name with alternatives allowed or we can just go ahead and start with the generic if you want to try the generic, which is Latanoprost, is the generic for Xalatan. It's a little bit different but the molecule is a little bit different from what I'm prescribing. It's basically a similar molecule. It's a pretty new generic so we don't have a lot of data yet on you know.*

Patients expressed confusion concerning brand versus generic medications in two of the videotape recorded glaucoma office visits.

Physicians said that generic medications weren't available in nine of the videotape recorded glaucoma office visits. However, in one discussion a physician prescribed a medication that would become generic next year.

Physicians offered to write a prescription for a generic glaucoma medication in 8.6% of the videotape recorded glaucoma office visits. The following is an example of a physician statement:

Physician: *OK, the other thing we may have talked about this in the past and stop me if we have, but there's now a generic form of, well, it's a cousin of Travatan.*

So that's brought the price down for a lot of people. It used to be about eighty dollars without a copay now it's down to twenty something dollars. We can always switch you over to the generic now. It's only been since about March or April that it's been available so that's been really wonderful for a lot of my patients. Pretty much all of my patients have switched to the generic so it's a good thing to do. And the other two that you're on are available in a generic. They're still not you know nothing but at least they're better than if they were.

All 24 of the glaucoma office visits where a physician offered to write a prescription for a generic medication as an alternative to a brand medication took place at an academic medical center. Physicians who had practiced medicine longer were less likely to offer to write a prescription for a generic medication (t-test = -2.04; p = .05).

Physicians asked if the patient had a preference for brand versus generic glaucoma medications in 3.6% of the videotape recorded glaucoma office visits. One example of a physician asking if the patient had a preference for brand or generic medication is below:

Physician: And there's a generic form of the medications at night. Do you prefer the generic if do you want to give that a try or?

Patient: Uh, my insurance company would probably go to that anyways, well I would think.

Physician: It's possible. It's possible, so we'll try that and I haven't had any bad effects from that so.

Patients expressed a preference for generic glaucoma medications in 6.1% of the videotape recorded glaucoma office visits.

Patients expressed a preference for brand glaucoma medications in five of the videotape recorded glaucoma office visits. Patients that had a preference for brand glaucoma medications mentioned problems with the generic medication such as difficulty opening the bottle, problems with the flow of eyedrops and burning of the eyes.

DISCUSSION

In this secondary analysis we aimed to investigate the frequency and nature of patient-provider discussions of medication cost during glaucoma office visits. The majority of glaucoma office visits did not have a discussion of medication cost, which was consistent with previous studies looking at the extent of medication cost communication in other non-ophthalmic chronic diseases.¹⁵ Providers often did not ask if their patients had glaucoma medication cost problems. Discussions of medication cost ranged from physicians recommending patients work with a pharmacist to lower cost, to patients discussing coping strategies they use to deal with medication cost problems. The most common discussions relating to medication cost were providers proposing solutions to potential cost problems, discussion of health insurance or prescription drug coverage, and discussion of brand/generic medications. The few discussions of cost at the baseline ophthalmic visits leaves room for improvement for providers to discuss cost early on in order to improve adherence from the beginning of glaucoma treatment. The importance of patient-physician

communication for medication adherence in the glaucoma patient population has been demonstrated in several studies.^{12, 20, 21} Buller et al. investigated 100 glaucoma patients taking topical medication to lower IOP. They found that poor communication between providers and patients caused nearly one in five patients to use the wrong regimen.²⁰ According to the American Academy of Ophthalmology's Preferred Practice Patterns ophthalmologists should work collaboratively with patients and provide care that is cost effective without compromising accepted standards of quality.²² The guidelines specifically mention adjusting glaucoma therapy if the patient does not adhere due to cost.

Ophthalmologists rather than patients were more likely to initiate a discussion of medication cost compared to patients. This finding indicates that although patients may experience cost problems, often they do not bring it up to their physician. A recent study by Patel and Wheeler had similar findings when they investigated the extent of cost communication in asthma patients.⁹ Although seventy-two percent of the sample reported a preference to discuss cost with their health care provider, only thirty-nine percent reported actually having a conversation with their physician about cost. When discussing options for glaucoma medications, physicians may want to include a cost comparison since patients may want to weigh their options. Statements such as "Medication A is available as a cheaper generic while Medication B is not" or "What type of prescription insurance do you have because Medication A has a high out of pocket cost for many of my patients" could help patients when choosing between two glaucoma medications. Interestingly, physicians that had practiced medicine longer were less likely to offer to write a prescription for a generic medication than physicians who had practiced for fewer years. One possible explanation is that physicians that have practiced medicine longer may have developed a preference towards brand medications.

Prior research has found an association between lack of health insurance prescription coverage and medication nonadherence.^{6,23} Therefore, physicians should work to engage patients without prescription coverage since they are at a higher risk of nonadherence. Asking a simple question like, "Do you have any problems paying for your glaucoma medications?" may start a critical dialogue that reveals medication nonadherence due to cost problems. This could help patients and physicians brainstorm solutions together on lowering medication cost such as enrolling in drug assistance programs. Continuing the dialogue is important for physicians and patients in order to evaluate cost barriers leading to nonadherence. Physicians could use open-ended questions to engage their patients at follow-up visits such as: "*How much did you pay for your glaucoma medications the last time you picked them up?*" or "*Did you have any problems affording your glaucoma medications?*" or "*Is cost a problem? There may be a less expensive alternative for your glaucoma medications if cost is a problem for you.*"

There were some limitations to this analysis. First, the population used for the analyses was not racially diverse; the majority of subjects were Caucasian. This may impact our findings since we noted that the majority of patients that reported cost was a problem to their ophthalmologist were non-African American. It is important future studies have a more diverse sample of subjects to better understand potential demographic factors that may influence discussions related to glaucoma medication costs. The larger study from which

this data was drawn was not limited to newly diagnosed patients or new-to-physician patients. Therefore, we are unable to identify if cost was discussed during earlier visits. Further, this study does not capture discussions of cost that may have occurred with billing staff or technicians. Future studies should limit enrollment to newly diagnosed patients or have sufficient power to examine discussions of medication cost for these patients. Another limitation was the lack of diversity in terms of medical and prescription coverage; the majority of our patients (97.5%) reported having medical insurance. Future studies should investigate how cost discussions may be impacted by patients' lack of coverage. Additional limitations include the high patient annual household income and high level of health literacy in study participants. Since this was a secondary analysis and the data were not collected for this specific analysis, there are certain limitations that should be addressed in future studies, including the enrollment of a more diverse sample such as more participants at or below the national average wage and more participants with a literacy level of 8th grade and below to increase the generalizability of findings. Additionally, future research should examine the relationship between medication cost discussions and adherence to glaucoma medications.

As illustrated by this study, few patients initiate conversations with their providers regarding glaucoma medication costs. Therefore, physicians should consider bringing up medication cost during glaucoma office visits to prompt a discussion of potential cost related barriers to medication use. Medical schools and continuing medical education courses should include lessons on how to recognize and assist patients with cost issues. Physicians should receive training on how to talk with patients about the importance of not forgoing medications based on cost reasons and why long-term medication adherence is critical for glaucoma. Hospitals and clinics should have technologies that assist physicians with identifying the cost of various medications in order to best inform and assist patients.

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Appendix 1

Supplemental Coding Instrument.

Transcript #:	Date:	
Coder ID #:		
Cost Discussions	Yes	No
Cost Discussion 1 Occurred	Y	N
Cost Discussion 2 Occurred	Y	N

Cost Discussion 3 Occurred		Y	N	
Cost Discussion Initiator	Physician	Patient	Caregiver	Other
Initiator of Cost Discussion Segment 1 during the Baseline Visit	1	2	3	4
Initiator of Cost Discussion Segment 2 during the Baseline Visit	1	2	3	4
Initiator of Cost Discussion Segment 3 during the Baseline Visit	1	2	3	4
Key Communication Variables		Yes	No	
Medication Cost Discussed during the Baseline Visit		Y	N	
If YES, then continue coding:				
Patient Indicates that Cost is a Problem during the Baseline Visit		Y	N	
Provider Behavior		Yes	No	
Physician Asks About a Glaucoma Medication Cost Problem		Y	N	
Physician Proposes a Solution to a Potential Glaucoma-Related Cost Problem		Y	N	
Physician Recommends Patient work with Pharmacist to Lower Glaucoma Medication Cost		Y	N	
Physician Asks How Much Patient is Paying for Glaucoma Medications		Y	N	
Physician Recommends Patient Try 3-Month Supply of Glaucoma Medications to Reduce Cost		Y	N	
Patient Behavior		Yes	No	
Patient Changes Glaucoma Medication Regimen Due to Cost Problem		Y	N	
Patient Discusses Coping Strategies Used in the Past to Deal with Cost Problem		Y	N	
Insurance and Cost Discussed		Yes	No	
Patients Health Insurance or Prescription Drug Coverage is Discussed		Y	N	
Coinsurance or Copayment is Discussed		Y	N	
Medication Assistance Programs are Discussed		Y	N	
Four Dollar Generics are Discussed		Y	N	
Laser is Discussed as a Solution to a Medication Cost Problem		Y	N	
Samples		Yes	No	
Patient Requests Samples		Y	N	
Physician Provides Samples		Y	N	
Physician Discusses Being Unable to Provide Samples		Y	N	
Medication		Yes	No	
Term Brand or Generic Drug is Used		Y	N	
Physician Initiates Discussion of Brand or Generic		Y	N	
Physician Explains Difference Between Brand and Generic		Y	N	
Patient Expresses Confusion of Brand versus Generic		Y	N	
Physician says Generic isn't Available		Y	N	
Physician Offers to Write Prescription for Generic		Y	N	
Physician Asks if Patient has a Preference for Generic or Brand		Y	N	
Patient Expresses Preference for Generic		Y	N	

Patient Expresses Preference for Brand	Y	N
Physician Proposes a Solution to a Potential Cost Problem	Y Only	
If yes: what is discussed?		
Physician Recommends Patient work with Pharmacist to Lower Medication Cost	Y Only	
If yes: what is discussed?		
Patient Changes Medication Regimen due to Cost Problem	Y Only	
If yes: what is discussed?		
Patient Discusses Coping Strategies Used in the Past to Deal with Cost Problem	Y Only	
If yes: what is discussed?		
Medication Assistance Programs are Discussed	Y Only	
If yes: what is discussed?		
Patient Expresses Confusion of Brand vs. Generic	Y Only	
If yes: what is discussed?		

Table 1

Glaucoma Patient, Medication, and Financial Characteristics of Patients Who Discussed Medication Cost During Their Office Visit (N = 87).

Characteristics	Cost Discussion Occurred Percentage of Patients (N)
Women	57.5 (50)
Age, mean (range)	66.2 (38–93)
Race	
White/Caucasian	58.1 (50)
Asian	4.7 (4)
Black/African American	36.0 (31)
Native American	1.2 (1)
REALM Score	
9th grade and above	88.4 (76)
8th grade and below	11.6 (10)
Disease Severity for Worse Eye	
Moderate to severe disease	39.3 (33)
Mild disease severity	60.7 (51)
Other Chronic Diseases	
Diabetes	24.4 (21)
High Blood Pressure	60.5 (52)
High Cholesterol	53.5 (46)
Arthritis	37.2 (32)
Hypothyroidism	10.5 (9)
Heart Disease	16.3 (14)
Depression	11.6 (10)
Annual Income	
Less than \$20,000	10.5 (9)
\$20,000–\$39,999	18.6 (16)
\$40,000–\$59,999	10.4 (9)
\$60,000–\$79,999	9.3 (8)
Greater than \$80,000	26.7 (23)
Don't want to answer or don't know	24.4 (21)
Medical Insurance	
Medicaid	1.1 (1)
Medicare	56.3 (49)
Private	34.5 (30)
Other	3.5 (3)
No Medical Insurance	4.6 (4)
Patient Has Prescription Insurance	89.7 (78)
Total Number of Glaucoma Medications	

Characteristics	Cost Discussion Occurred Percentage of Patients (N)
One	72.4 (63)
Two	21.8 (19)
Three or more	5.7 (5)
Newly Prescribed Glaucoma Medications	26.4 (23)

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Table 2

Percentage and Number of Visits Where the Communication Variables Were Discussed (N=275).

Communication Variable	Percent (N) of Visits Where Variable was Discussed
Overall Medication and Other Cost Discussion	
Medication Cost Discussed During the Baseline Visit	31.6 (87)
Patient Indicates that Cost is a Problem during the Baseline Visit	4.7 (13)
Provider Behavior	
Physician Asks About a Glaucoma Medication Cost Problem	1.4 (4)
Physician Proposes a Solution to a Potential Glaucoma-Related Cost Problem	17.9 (50)
Physician Recommends Patient Work with Pharmacist to Lower Glaucoma Medication Cost	1.1 (3)
Physician Asks How Much Patient is Paying for Glaucoma Medications	2.2 (6)
Physician Recommends Patient Try a 3-Month Supply of Glaucoma Medications to Reduce Cost	2.2 (6)
Patient Behavior	
Patient had Changed Glaucoma Medication Regimen Due to Cost Problem	6.1 (17)
Patient Discusses Coping Strategies Used in the Past to Deal with Cost Problem	1.8 (5)
Insurance and Drug Cost	
Patients Health Insurance or Prescription Drug Coverage is Discussed	14.7 (41)
Coinsurance or Copayment is Discussed	11.1 (31)
Medication Assistance Programs are Discussed	2.2 (6)
Four Dollar Generics are Discussed	2.5 (7)
Laser is Discussed as a Solution to a Medication Cost Problem	0.4 (1)
Samples	
Patient Requests Samples	0.0 (0)
Physician Provides Samples	6.5 (18)
Physician Discusses Being Unable to Provide Samples	0.7 (2)
Medication Discussion	
Term Brand or Generic is Used	19.0 (53)
Physician Initiates Discussion of Brand or Generic	14.7 (41)
Physician Explains Difference Between Brand and Generic	0.7 (2)
Patient Expresses Confusion Concerning Brand versus Generic	0.7 (2)
Physician Says Generic isn't Available	3.2 (9)
Physician Offers to Write a Prescription for Generic	8.6 (24)
Physician Asks if Patient has a Preference for Generic or Brand	3.6 (10)
Patient Expresses Preference for Generic	6.1 (17)
Patient Expresses Preference for Brand	1.8 (5)

Appendix Table A1

Communication Variables, Source, Range, and Reliability.

Variable	Range	Reliability ICC
Cost Discussion and Initiator		
Cost Discussion Occurred	1=yes; 0=no	0.94
Initiator of Cost Discussion	1=Physician 2=Patient	1.0
Overall Medication and Other Cost Discussion		
Medication Cost Discussed	1=yes; 0=no	0.94
Patient Indicates Cost is a Problem	1=yes; 0=no	0.88
Provider Behavior		
Physician Asks about a Medication Cost Problem	1=yes; 0=no	1.0
Physician Proposes a Solution to Potential Cost Problem	1=yes; 0=no	0.77
Physician Recommends Patient Work with Pharmacist to Lower Medication Cost	1=yes; 0=no	1.0
Physician Asks How Much Patient is Paying for Medications	1=yes; 0=no	100% agreement *
Physician Recommends Patient Try 3-Month Supply to Reduce Cost	1=yes; 0=no	1.0
Patient Behavior		
Patient Changes Medication Regime due to Cost Problem	1=yes; 0=no	0.79
Patient Discusses Coping Strategies Used in the Past to Deal with Cost Problems	1=yes; 0=no	1.0
Insurance and Drug Cost		
Health and/or Prescription Drug Insurance Discussed	1=yes; 0=no	0.93
Coinurance and/or Copayment is Discussed	1=yes; 0=no	0.88
Medication Assistance Programs Discussed	1=yes; 0=no	1.0
Four Dollar Generics Discussed	1=yes; 0=no	1.0
Laser is Discussed as a Solution to a Medication Cost Problem	1=yes; 0=no	100% agreement *
Samples		
Patient Requests Samples	1=yes; 0=no	100% agreement *
Physician Provides Samples	1=yes; 0=no	0.91
Physician Discusses Being Unable to Provide Samples	1=yes; 0=no	100% agreement *
Medication Discussion		
Term Brand or Generic is Used	1=yes; 0=no	1.0
Physician Initiates Discussion of Brand or Generic	1=yes; 0=no	0.90
Physician Explains Difference Between Brand and Generic	1=yes; 0=no	0.79
Patient Expresses Confusion Concerning Brand versus Generic	1=yes; 0=no	1.0
Physician Says Generic isn't Available	1=yes; 0=no	0.79
Physician Offers to Write Prescription for Generic	1=yes; 0=no	0.85
Physician Asks if Patient has a Preference for Generic or Brand	1=yes; 0=no	1.0
Patient Expresses Preference for Generic	1=yes; 0=no	1.0
Patient Expresses Preference for Brand	1=yes; 0=no	1.0

* There was 100% agreement that the variable did not occur in the transcripts that were double-coded

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