

PATIENT COMPLIANCE WITH OCULAR MEDICATIONS

**CHRIS SMITH
SENIOR PROJECT
APRIL 5, 1999**

Dr. [Signature]
Dear Mr. Hartwig,
Enclosed for
Mr. [Name]

INTRODUCTION

It can be frustrating from a doctor's perspective when medications are prescribed and the patient doesn't comply with the regimen. After all, the patient is taking the time to be evaluated, so why not follow the directions to improve their condition? Patient compliance is not a subject that is frequently observed or studied in regards to ocular medications. In fact there has not been any neutral (i.e. non-company sponsored) compliance studies published in an ophthalmic journal. Why is that? Are the answers already known? Is it not important?

This study has been performed to try and answer questions about compliance from the patient's point of view. The answers from this study will hopefully assist eye care providers in improving patient care.

PATIENTS AND METHODS

The patients for this survey were randomly selected from the patient base at the Garrett Eye Center in Iron Mountain, Michigan. Some patients were selected by random search through the paper filing system, and others were found on the computer database. Only patients seen and prescribed an ocular medication from January 1, 1998 up to August 1, 1998 were allowed into the survey.

Garrett Eye Center (GEC) is a primary and secondary eye care practice with a general ophthalmologist (Dr. Garrett) and an optometrist (Dr. Hartwig). Due to the skewed patient base at Garret Eye Center, it was determined that the number of patients surveyed would somewhat reflect this patient base. Therefore out of the 300 patients surveyed, 100 would be glaucoma patients. The post surgery, iritis, and blepharitis categories were given 50 surveys each. The last 50 surveys consisted of a minority of patients and included: dry eye, infections, and other.

Three hundred surveys and self-addressed stamped envelopes were sent to the randomly selected GEC patients. The categories of patients were color coded to best organize them based on their condition. The color coding was as follows:

- Glaucoma (WHITE)
- Post-surgery (BLUE)
- Iritis (GREEN)
- Blepharitis (YELLOW)
- Dry eye, infection, & Other (TAN)

Some patients were afflicted with multiple eye problems, but were organized by primary diagnosis for the purpose of the survey.

The surveys were mailed on August 28, 1998 and were labeled with a deadline of October 1, 1998. This gave the patient over one month to respond. Surveys were still accepted past the due date for any unseen circumstances that may have arisen.

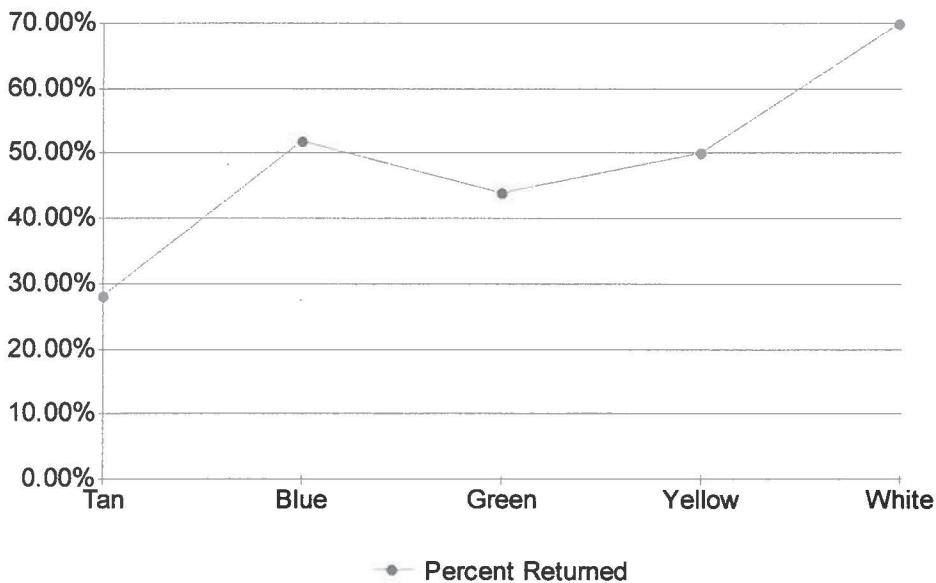
QUESTIONNAIRE

The questionnaire (Appendix A) was composed of questions about the primary eye care provider, the condition(s) being treated, and the drops currently or recently taken. The patient was then asked to estimate their compliance in taking the medications and rate the services provided to them. If the patient had any amount of non-compliance, they were to rate their reasons. Finally, their attitudes on surgery, self-medication, and importance ocular versus systemic medications were inquired upon. (Results are tabulated in Appendix B)

RESULTS

Of the 300 surveys sent out, 159 (53.0%) of them were returned to the GEC. Two surveys were returned with no responses other than "patient deceased." The response rate was moderate and provides some questions of compliance just by the number of returnees. The glaucoma patients had the highest percentage of returned surveys with 70%, while the infections, dry eye, and other category had the lowest with 28%. The number of returned surveys by condition is represented in Figure 1.

Figure 1: Percentage of Surveys Returned by Condition



Even though options were given in each question to express positive or negative opinions, or no opinion, some were still left without a response. Depending on the situation, these 'no responses' were deemed as either a no opinion, unknown, or a disagreement. The logic behind inferring what the patient meant by leaving it unanswered, is explained in each situation.

The patients own estimation of compliance is a large part of this study. It is referred to in many situations throughout the study and in itself is an enormous measure of compliance. Of the 157 surveys completed, 138 (87.9%) of the patients responded to this question. Figure 2 is a histogram illustrating the frequency of responses.

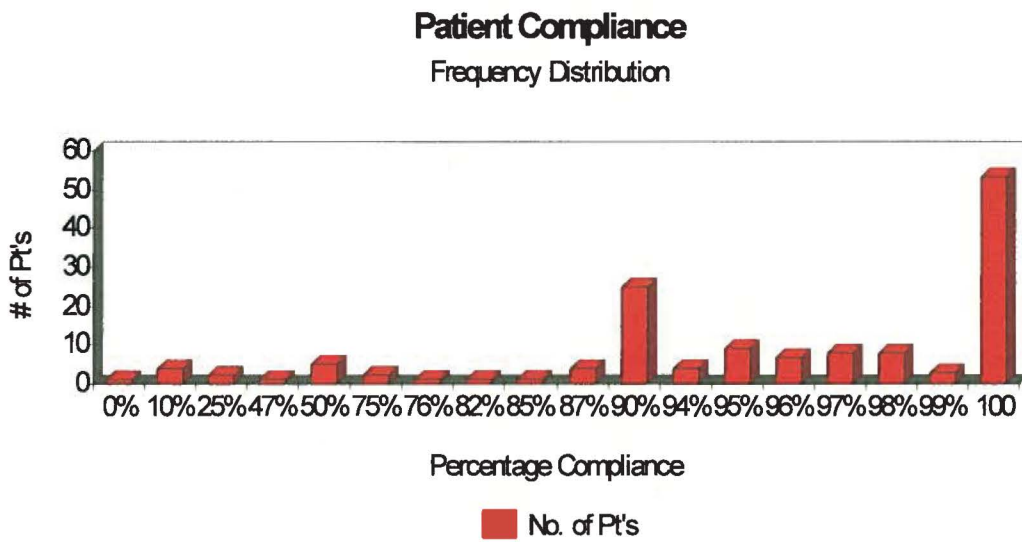


Figure 2: Frequency histogram of patient compliance.

The responses of the majority of the patients show very good compliance. The overall mean was 89.4% with a standard deviation of 24.6. This seems like a good compliance in this sample of patients but the prognosis is guarded since there were 141 patients who didn't respond to this survey at all. One could argue that those who took the time to complete the survey are more likely to be compliant than those who did not.

One could also argue that compliance may vary depending on the condition or eye care provider who is treating that condition. An analysis of these means, medians, and standard deviations are listed in table 1.

Table 1: Patient compliance

	Other	Iritis	P.O.	Bleph	Glauc	Overall Ave.
Garrett						
Mean (# pt's)	97.5 (4)	77 (6)	96.5 (24)	68.9 (13)	92.8 (32)	89.0 (79)
Median	100	82.5	97	90	97	
SD	5	22.6	6.2	35.5	17.8	
Hartwig						
Mean (# pt's)	100 (1)	0	0	91.6 (6)	96.3 (19)	95.4 (26)
Median	100	0	0	94	98	
SD	0	0	0	10.1	4.6	
Referring						
Mean (# pt's)	95 (2)	70 (2)	100 (2)	100 (1)	98.3 (3)	92.5 (10)
Median	95	70	100	100	100	
SD	3.6	28.3	7.1	0	0	
Garrett & Hartwig						
Mean (# pt's)	10 (1)	68.5 (2)	0	70 (3)	94.5 (10)	81.4 (16)
Median	10	68.5	0	100	98.5	
SD	0	26.2	0	52	8.3	
Garrett & Referring						
Mean (# pt's)	0	25 (1)	0	0	100 (1)	62.5 (2)
Median	0	25	0	0	100	
SD	0	0	0	0	0	
Unspecified						
Mean (# pt's)	90 (1)	0	0	95 (2)	95.5 (2)	94.2 (5)
Median	90	0	0	95	95.5	
SD	0	0	0	7.1	0.7	
Totals—mean	86.6	69.5	96.8	77.8	94.5	89.4
SD						24.6

Overall, the post-operative patients were the most compliant (96.8%) with the glaucoma population a close second (94.5%). It appears that the seriousness of compliance in each condition has set a standard for complying with their prescribed regimens. However, the iritis patients had the lowest compliance average, even though their condition can be serious and painful as well. There was modest compliance in both the blepharitis (77.8%) and other (86.6%) categories.

Dr. Hartwig had an excellent compliance in patients who list him as their primary provider (95.4%). The referring doctors were second with 92.5% and Dr. Garrett was third highest with 89.0%. Overall, these are excellent averages and provide a good analytical basis for the study.

Looking at the number of different drops the patient takes in a day, one could make a point for single drops ease of use or having multiple drops becoming a better reminder/part of the everyday routine. Does a single drug with one or two applications per day mean better compliance? Below is a table that shows the results of this cross referenced data:

Table 2: Applications and compliance

# of Applica.	Other		Iritis		PO		Bleph		Glau	
	1	2+	1	2+	1	2+	1	2+	1	2+
# of Pt's	9	0	9	2	13	13	19	6	45	23
Mean Compli.	86.6	0.0	71.3	61.0	96.3	97.2	67.8	96.0	94.2	95.1

Overall single medication average compliance: 86.4%

Overall multiple medication average compliance: 94.3%

If looking just at the comparison of overall results, it seems to contradict common opinions that one medication means better compliance than multiple ones. Pharmaceutical companies will focus campaigns on taking care of signs or symptoms with a single medication. Even patient's perception when receiving multiple medications is one of disapproval. Finck et al (1998) reported that 4% of the patients felt they were taking too much medication which resulted in compliance decreasing by 1.5-2.0X.¹ Why this population shows contradicting findings is unknown. The reasons for differences in compliance could be due to the perception of multiple bottles providing a greater awareness or more of a financial and time investment.

For the patients who are on the most simplified regimen possible (one drop from one medication every day), one might expect the highest compliance. However, of the 47 patients who are on this regimen, there was a compliance average of 92.9%. This is just below the multiple dose regimen (94.3%), but significantly above the single medication compliance of 86.4%. Medications like Xalatan (98.5%), Inflamase (98.0%), and Timoptic (97.5%) scored extremely well.

How do patients feel about the explanations given of the different conditions being treated and the purpose of the medications they take? Is there a better understanding in some conditions as opposed to others? In question five of the survey the patient was to rank the

explanations provided by the doctor on a scale of 1-5 (1=displeased to 5=pleased). The ranking of the condition explanations are listed in Table 3.

Table 3-- Patient rating of the explanation of the condition being treated

<u>Category</u>	<u>Mean ranking (# of responses)</u>
Tan (others)	4.60 (10)
Yellow (blepharitis)	4.53 (19)
White (glaucoma)	4.53 (59)
Blue (P.O.)	4.41 (22)
Green (iritis)	4.36 (11)

Not only do patients need to know about their condition being treated, but they also need to know what the medications they are prescribed will do for them. Table 4 shows the rankings of these explanations in each condition.

Table 4-- Patient rating of the explanation of the purpose of eye medications

<u>Category</u>	<u>Mean ranking (# of responses)</u>
Yellow (blepharitis)	4.69 (23)
White (glaucoma)	4.50 (60)
Green (iritis)	4.40 (10)
Blue (P.O.)	4.36 (22)
Tan (others)	4.33 (9)

The patients responding to these questions are showing a high appreciation for the education of their conditions and medications. The mean scores were 4.50 and 4.49 respectively. The blepharitis and glaucoma patients consistently scored high in each category, while the post-operative and iritis patients were slightly below in both. The 'Others' category scored the highest in explanation of conditions, but the lowest in explanation of medication purposes. This is interesting, but there is no real explanation as to why that was.

McCormack, et al. (1997), assessed patient knowledge of prescribed drugs and found that both inpatients and outpatients, young or elderly, had poor awareness of their medications. While 88% of the outpatients knew the indications for their therapy, only 40% could name their medications.² Assuming the patients correctly identified medications when listing them, 25.5% of the patients left the space blank. This is somewhat misleading since some patients could have looked up their medications even though they didn't know them. Also, some patients who were not currently taking any medications may have just left this question unanswered.

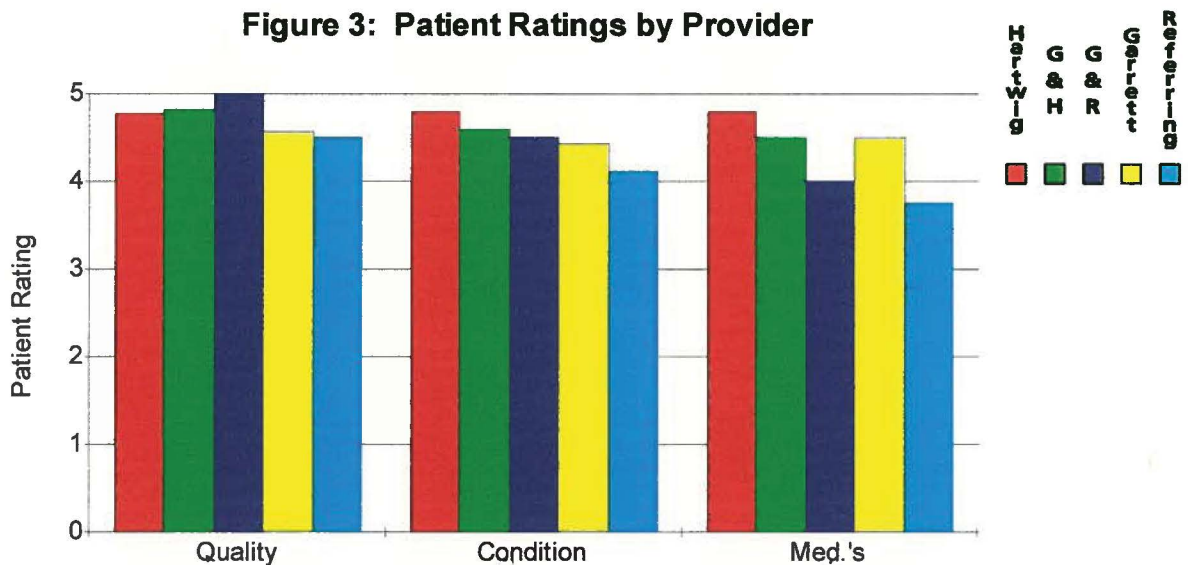
Another study was performed evaluating the effect of counseling on 165 patients who were discharged from the hospital. Counseled patients had one-third less medication errors than did the uncounseled patients. Memory aids were introduced to try to supplement counseling, but

only the tear-off daily calendar showed a modest improvement. MacDonald, et al. (1977), concluded that a staff member should spend about 15 minutes with each patient before discharging to ensure the drug regimen is understood, old tablets are destroyed, and other people's medications are not taken. ³

One may think that 15 minutes of counseling is on the high side, but what is the appropriate amount of time to spend discussing the regimen? In comparing patient ratings of quality of explanation between doctors, one factor to consider is length of time the patient is actually in contact with their eye care provider. On average Dr. Garrett schedules approximately 16-20 patients/hour, while Dr. Hartwig schedules approximately 4-5 patients/hour. Does this time discrepancy reflect the patient's opinions of education received? Does this reflect how the patient feels about the quality of the exam? Table 5 and figure 3 is a representation of patient ratings of explanations and exam quality based on the primary eye care provider.

Table 5—Patient rating of exam quality and the explanation of condition and medications by provider

Primary Provider	Average Rating Quality of Exam	Average Rating Expl. of Condition	Average Rating Expl. of Medicaiton
Hartwig	4.77 (26)	4.80 (26)	4.80 (25)
G & H	4.81 (16)	4.60 (15)	4.50 (14)
G & R	5.00 (4)	4.50 (4)	4.00 (4)
Garrett	4.56 (71)	4.44 (66)	4.50 (70)
Referring	4.50 (8)	4.11 (9)	3.75 (8)



Communication and education does not seem to be a problem at the GEC. The grades given to all eye care providers is very satisfactory in all three categories. For Dr. Hartwig and Garrett, the numbers are consistent and high through all three [(H) 4.79 +/- 0.03, (G) 4.50 +/- 0.12]. The highest quality of exams is in the patients who have Dr. Garrett and the referring doctor listed as their providers (5.00: 4 patients). Close behind is the Dr. Garrett and Hartwig combination with a 4.81 average. Although the explanations were rated lower in each case, the patients were still very pleased. The referring doctors received the lowest ratings in all 3 categories. The fact that they referred the patient for secondary care and were uncertain of the diagnosis and treatment, could be reasons for the lower ratings.

What is the biggest reason for not complying with the prescribed regimen? Question 6 asks the patient's who miss taking medications, what their reasons are for doing so. The scale is again 1-5 (5 =agreement to a 1 =disagreement).

While some patients reported a non-compliant number in question 3, there were some who did not report any of the factors in question 6 as causing this non-compliance. Those who did not respond in all or some parts were considered as a disagreement. When analyzing the data from this question, it is best to look at the moderate to strong agreements (4-5 responses) for the most accurate representation of patient opinion.

Table 6: Results of question six.

Question 6	5 -agree	4	3 - no opinion	2	1 -disagree
(A) Cost	7	5	11	1	17
(B) Time	2	2	5	0	19
(C) Forget	48	9	5	1	8
(D) Help?	5	3	6	2	15
(E) Problem?	6	0	5	1	19
(F) Function?	7	3	9	2	15
(G) Unable	10	4	5	1	18
(H) Side Effects	3	1	3	0	24

Of the patients who reported reasons for non-compliance, the highest number of moderate to strong agreements was 'forgetfulness' with 57 (80.3%) of the 71 responses being in agreement. As far as forgetfulness by condition, one might expect asymptomatic problems to provide less of a reminder. This holds true as the glaucoma population reported moderate-total agreement (4-5) in 45.7% of the responses. Table 7 shows the results of each condition.

Table 7: Forgetfulness Among Conditions

Condition	Percentage	Pt's agree (4-5)/ Respondents
Glaucoma	45.7%	32/70
Blepharitis	32.0%	8/25
Post-operative	26.9%	7/26
Other	14.3%	2/14
Iritis	13.6%	3/22

The second most common reason for not complying was that the patient is not able to put the drops in (36.8% or 14/38 responses). This is somewhat of a surprise, but the majority of the patients at the GEC are elderly, and may have some agility/mobility problems. Increased education and demonstration may help with this problem, but pharmaceutical companies are also working to alleviate problems with applications. New designs in bottle and nozzle shape have allowed easier dispensing.

How often does cost become a factor in not taking drops? This question didn't show a large number of people (12 had indicated a moderate to strong agreement) being non-compliant because of the prices of the medications. The average compliance of these 12 patients was slightly reduced (87.9%) in comparison to those who responded with a no opinion to disagreement (91.7%). Although some medications may be pricey, patients tended not to ration/skip their drops because they couldn't afford it. Insurance coverage must also be considered when analyzing these statistics.

Do side effects of ocular medications play a role in reducing the patients compliance? A study published in the Journal of General Internal Medicine looked at drug compliance and side effects in overmedication. A survey was given to 1648 male veterans (1256 responded) with questions about medications taken, missed doses, adverse reactions, and opinions on the amount they are taking. The patients reported a 1.6-fold increase in prescription medications, a 5.8-fold increase in adverse effects, and an increase each of the seven measured symptoms. These numbers correspond well with the 1.5-2.0 fold decrease in compliance and that 4% of the patients felt they were taking too much medication. Fincke, et al. (1998), concluded that a decrease in compliance is related to the patient's perception of overmedication and the adverse drug reactions.¹

In another study by Tamblyn (1996), it is stated that there are several mechanisms for adverse effects from medications "...(1) increased sensitivity of diseased tissue to drug toxicity, (2) potential drug interactions, and (3) difficulties in patient compliance with an increasing number

of drugs.” Incorrect prescribing of unnecessary medications, and contraindicated medications and combinations are the fault of physicians. Tamblyn concluded that education of drug risks and benefits needs to be increased in both physicians and patients⁴.

The patient’s response to any burning, stinging, excessive watering, or blurred vision, were again graded (on a scale of 1-5). Of the 157 responses, only five (3.2%) of the patients reported a moderate or strong agreement (4 or 5) to the poor compliance. The average percentage of compliance in these patients was 93.0%. The high percentage compliance and the low number of patients who reported side effect problems indicates that although the drops may cause numerous side effects, they aren’t severe enough to significantly limit applications. Table 8 shows the medications indicated as causing side effects significant enough to poorly comply. No medications were indicated by more than one patient, and only Tobradex had a high percentage of indications (100%: 1 patient).

Table 8 Ocular Medications Reported as Causing Significant Side Effects

Medication	SE Reported (total pt’s Rxed)	Percentage
Timoptic	1 (20)	5.0%
Pilocarpine	1 (13)	7.7%
Tobradex	1 (1)	100.0%
Unknown	2 (--)	--
OVERALL	5 (157)	3.2%

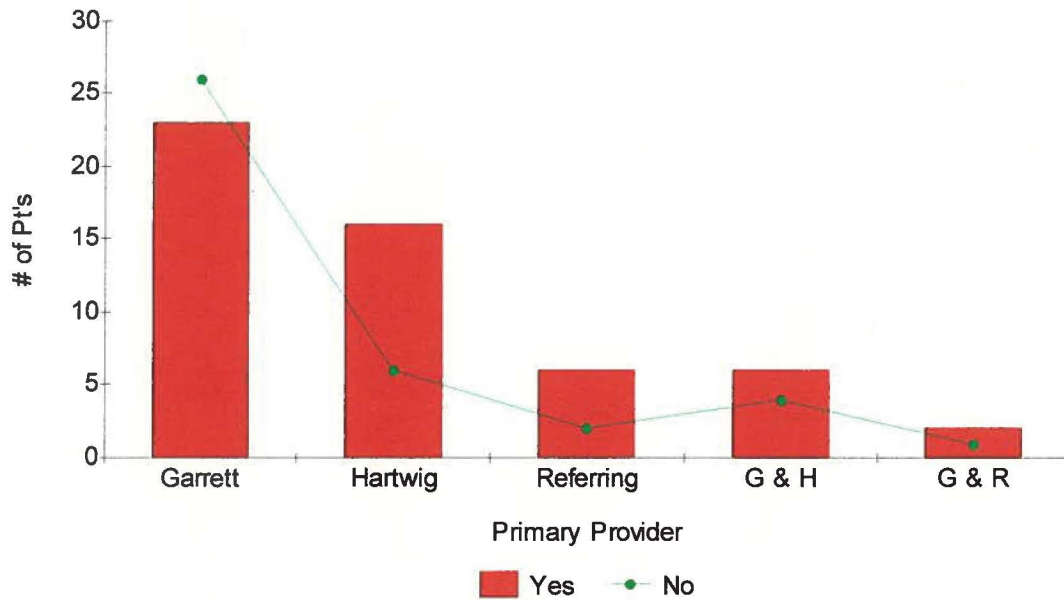
The patient was to comment on the relation of their compliance to the therapeutic effects of the drops, if there was a real problem, and the function of the medications. The agreements for these three questions (6 d, e, and f) were seen in only 8, 6, and 10 patients respectively. Apparently, the fact that the patients are well educated about their condition, as seen in question 5(d) and (e), has significantly lowered the non-compliance as a result of these causes.

Lastly, only 4 patients reported that a reason for their non-compliance was that they were too time consuming. This number seems about right, as it should only take a few seconds to apply the drops for those who are at least moderately agile. The correlation between being too time consuming and being unable, is that two of the four patients had agreements in both of these categories. Another correlation is the amount of drops the patients are taking. In three of the four patients, more than four drops were being taken every day. Multiple applications like this would at least seem time consuming.

If surgery could fix your condition, would you have it done? The basis behind this question dwells into several different variables. The responses incorporate a great deal of the patients

personal beliefs and courage, as well as taking into account the influence and trust in their primary eye care provider. Is one of the doctors pushing surgery more than the other? Does surgical education differ? Figure 4 represents the distribution of yes and no responses by primary eye care provider.

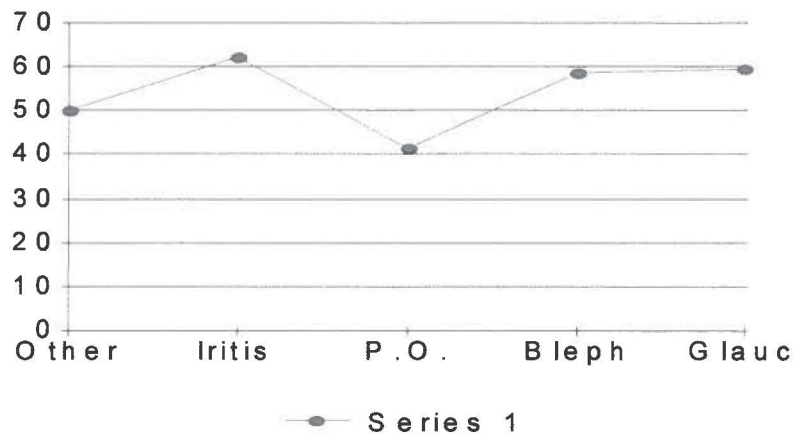
Figure 4: Surgery to Correct Condition?



The results from this question shows that a larger number of patients are hesitant to resolve to surgery in Dr. Garrett's patient base (46.9%) as opposed to the other groups. This contradicts some beliefs of medical doctors pushing surgery more that other professionals.

The trust of a quick fix in surgery is also evaluated with respect to the condition being treated. Are some conditions or their treatments bothersome enough to consider surgery to help alleviate the problem? The analysis of responses based on the affecting condition is represented in figure 5.

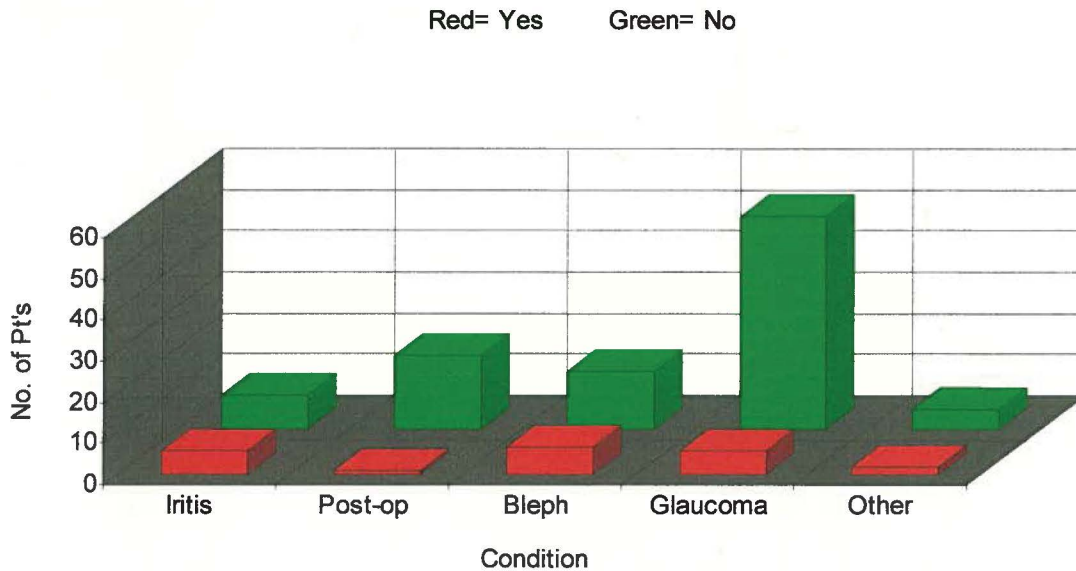
Figure 5: Percentage of patients choosing surgery to correct condition



How do eye medication's rate compared to other systemic medications? With all the correlation's between eye medications and conditions, a comparison between the efficiency of taking systemic and ocular drug compliance can give an evaluation of how serious the patient takes his therapeutic regimen. The majority of the 88 patients that were taking other systemic medications, reported that compliance was the same (62.5%) as systemic medications or better (18.2%) in ocular therapy. Higher compliance with systemic therapy was reported in 4.5% of the patients and 14.8% had no answer. The fact that 80.7% of the patients are more or equally efficient with ocular therapeutics, is a positive indication that patients take their conditions seriously.

Are some conditions more conducive to self-treatment than others? It is conceivable that conditions with painful/irritated eyes would have a higher percentage of self-medicating patients than those with generally asymptomatic conditions. By this reasoning, one could predict higher levels of self-treatment in the iritis, post-surgery, and blepharitis patients, while lower levels expected in the glaucoma patients. Figure 6 depicts the patients responses on self-medication in each condition.

Figure 6: Self-medication by Condition



As expected the iritis patients have a high percentage of self-medication (42.8%) responses. Also, the blepharitis (33.3%) and other (28.5%) categories were approximately as expected. Due to some of the after effects of surgery that can sometimes be bothersome or even painful, the post-surgery group (5.2%) seemed a little lower than some would expect. Lastly, the logic of "if one drop works, then two must work more..." could be the reason the glaucoma group had a 10.3% rate.

DISCUSSION

Is there an effort by doctors or pharmaceutical companies to increase patient compliance? Eye care providers must realize that above all else, education is the key to patient compliance. Whether is be from face to face discussions, pamphlets, videos, or other demonstrations, time must be set aside. Just what the correct amount of time or correct method of delivery is, has not yet been determined.

Extensive research revealed many studies looking at patient compliance, but none of them were specific to ocular medications. However, pharmaceutical companies will perform clinical trials on a specific drug and measure effectiveness, adverse reactions, and patient compliance. The

results and methods of these studies are supposed to be available upon request, but after requesting many, none were received.

A publication by Merck and Company, Inc. was sent to doctors currently treating glaucoma or ocular hypertension with its topical carbonic anhydrase inhibitor, Trusopt. This letter was in response to a recent advertisement from a competitor in which Merck wanted to clarify some misleading statements. Merck stated that clinical trials show: "Trusopt is generally well tolerated, with stinging reported in 11.6% of patients, ... has a low discontinuation rate (3.3%) due to ocular adverse events, ... and has a low incidence of blurred vision (1% to 5%)." However, despite being "generally well tolerated," one-third of the patients reported burning, stinging, or discomfort, 25% noted a bitter taste, 10-15% had superficial punctate keratitis, and 10% were having allergic reactions to the drop. The clinical trial only mentioned the discontinuation rate, which was somewhat favorable (3.3%), but compliance may have been better measured with the percentage of compliance.⁵

The Ciba Vision Corporation has a program called 'Partners in Sight' available to patients taking Betimol to treat glaucoma. The program is free and includes discounts on Betimol, an informative newsletter, and reminders on appointments and prescription status (**Appendix C**). The initial pamphlet has some frequently asked questions and answers on glaucoma, it's treatment, and compliance. The patient is enrolled simply by filling out and sending in the attached business reply card. This program is a good effort to increase compliance through education and monetary relief, and should provide a model for other companies to follow.⁶

These pharmaceutical companies are constantly trying to create new drugs or improve on the ones they currently produce, to make them more marketable. In making them more marketable, they are making them more efficient and user friendly. Goals of improved application ease, decreased applications, decreased side effects, or increased effectiveness are all small factors that set medications apart. When these goals are achieved, compliance is potentially improved as well.

CONCLUSION

This study was performed to get a feel for how the patient was complying with their ocular medications regimen. Surveys sent through the mail usually have poor responses, but with over half of the patients responding, the turnout was positive. Additionally, the patients who did respond, did so with an average compliance rate of 89.4%. When considering this rather high compliance and the very satisfactory ratings for the exams performed and explanations given during them, it reinforces quality time and education as the key to good compliance. Overall, it gave good insight into the thought processes and opinions of the patient and will hopefully be beneficial to future studies in this area.

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GARRETT EYE CENTER

J. M. GARRETT, M.D., F.A.C.S.
G. RICHARD KESKEY, M.D., F.A.C.S.
DEAN L. HARTWIG, O.D.

Iron Mountain: (906) 774-1404
(800) 428-8149
FAX: (906) 774-8132
Escanaba: (906) 786-6705
FAX: (906) 786-9392
Manistique (906) 341-5492

The following is a voluntary questionnaire sponsored by the Garrett Eye Center and the Ciba Corporation. The goal of this survey is to give us a better understanding of the patient's point of view of eye medications. It will allow us to improve our overall patient care while keeping your status as a patient at the Garrett Eye Center in strict confidence. Please complete this survey and send it back to the Garrett Eye Center via the enclosed stamped envelope. Deadline for completion is October 1st. Thank you for your cooperation!

- Who is your primary eye care provider? Dr. Garrett Dr. Hartwig
 Referring doctor
- What eye condition(s) are you (or have you been) treated for at the Garrett Eye Center?

<input type="checkbox"/> Post surgery	<input type="checkbox"/> Glaucoma
<input type="checkbox"/> Iritis	<input type="checkbox"/> Infections
<input type="checkbox"/> Blepharitis	<input type="checkbox"/> Dry Eye
<input type="checkbox"/> Other	
- What is the name of the eye medications you are currently taking and how often are you supposed to be taking them?

_____	R / L eye	_____	times a day
_____	R / L eye	_____	times a day
_____	R / L eye	_____	times a day
_____	R / L eye	_____	times a day
- Estimate the percentage of time you actually take your eye medications:
(Place an X on the bar or circle the approximate amount)



J. M. GARRETT, M.D.
DEAN L. HARTWIG, O.D.G.
1301 Carpenter Ave.
Iron Mountain, MI 49801

G. RICHARD KESKEY, M.D., F.A.C.S.
524 Ludington
Escanaba, MI 49829

G. RICHARD KESKEY, M.D., F.A.C.S.
215 Cedar
Manistique, MI 49854

5. How do you rate the following: (On a scale of 1-5)

	<u>Pleased</u>		<u>Neutral</u>		<u>Displeased</u>
Price of the drops	5	4	3	2	1
Quality of the Exam	5	4	3	2	1
Effectiveness of the drops	5	4	3	2	1
Explanation of the condition being treated	5	4	3	2	1
Explanation of the use/purpose of the medications prescribed	5	4	3	2	1

6. If you miss taking your medications, what is the biggest reason for not doing so? (On a scale of 1-5)

	<u>Agree</u>		<u>No Opinion</u>		<u>Disagree</u>
Too costly	5	4	3	2	1
Too time consuming	5	4	3	2	1
Just forget	5	4	3	2	1
Do not feel they help	5	4	3	2	1
Do not believe there is a real problem	5	4	3	2	1
Not sure what they do	5	4	3	2	1
Unable to put drops in correctly or by yourself	5	4	3	2	1
Drops are uncomfortable or cause side effects	5	4	3	2	1

7. If there was a surgery that would allow you to discontinue your eye medications, would you be interested in having it performed? **YES / NO**

8. Are you taking other medications? **YES / NO**

If so, how would you compare your efficiency of taking other medications to the eye medications:

- Better with eye medications
- About the same with both
- Better with other medications

9. Do you use your eye medications if you feel the condition recurring, without seeing an eye care provider first? **YES / NO**

Pt.	1	2	3	4	5a	b	c	d	e	6a	b	c	d	e	f	g	h	7	8a	b	9	
#	Dr.	Cond	Drops	%	\$	Qual	Effect	Expl Cond	Expl Purp	\$	Time	Forgot	Help?	?Prob	Funct?	Unable	SE	Sx	Other Meds	Comp	Self Med	
53	G	P, G	Tim 2 B Pilo 2 B Xal 1 R Pred 4 R	98	5	5	5	5	5	1	1	5	1	1	1	1	1	N	N		N	
54	G	P, O	TBDX 2 R	90	3	4	3	4	3	3	3	5	3	3	3	5	5	N	N		N	
55	G	O	Inf 1 R	94	3																N	
56	G	P	? 4 R	90	3	4		4	4			5						N	N		Y	
57	R	O		100	2	5	3	4	4										Y	Same		
58	G	P	Pred 1 L	95	5					3									N			
59	G	G	? 4	90																		
60	G	P	Inf 4 Tom 4 Vol 4	94	5	4	5	5	1	3	5	1	1	1	1	1	1		Y	Same		
61	G	P, G, In	Inf 4 R Hom 2 R Tob 4 R	95	3		2	3	5										Y	Y	Same	N
62	G	P, O	Inf 4 Tom 4 Vol 4	96	5	5	5	5	5										Y	Same	N	

Post-Operative (10)

Pt.	1	2	3	4	5a	b	c	d	e	6a	b	c	d	e	f	g	h	7	8a	b	9
#	Dr.	Cond	Drops	%	\$	Qual	Effect	Expl Cond	Expl Purp	\$	Time	Forgot	Help?	?Prob	Funct?	Unable	SE	Sx	Other Meds	Comp	Self Med
63		Ir	Inf 2 L	90	3	3	3	4	4	1	1	5	1	1	1	1	1	Y	Y	Other	Y
64	G,H	G		10	5	5	5	5	5	1	1	5	1	1	1	1	1	Y	Y	Same	N
65	G	P	Pred 1 L	98	5				5										N		
66	G	IF,D	AT	25		5	5	5	5			5							Y	Same	Y
67	H	O	AT	76			3											N	N		N
68	G	O,G	Pilo 4 Xal 1																		
			Inf 2	95		5	5	5	5											Same	N
69	G,H	G,Ir	Bet 2 B																Y		
			Fml 1 L	100	3	5	5	5	5									N	Y	Same	N
70	G	O	Pred 1 L	90	3	5	5	5	5	1	1	5	1	1	1	1	1	N	N		N
71	G	If	Inf 1 R	82																	
			? 1 R		1	5	3		5	5	3	3	5	5	3	5	3	N	Y	Eye	N
72	G	If		10		3		4	5										N		N
73	G	Ir	Pred 1 L	50	2	3	1	4	4	4	1	1	2	1	4	5	1	V	Y	Other	Y
74	G,H	P	Pred 1	100	5	5	5	5	5												
75	G	O,G	Tim 2 Pilo 4	99	3	5	5	5	5										Y	Y	Y
76	G	P,If	Flaxen	100															Y		N
77		Ir		100	5	5	4	5	5										Y	Same	Y
78	G	P,B,Ir		100	5	5	5	4	4										Y	Y	Y
79	H	If,Ir	Pred 2 R Vir 2 R																		
			Via 1 R	100	3	5	4	5	5	3		5							Y	N	N
80	G	B,O	Flaxen	10	3	5	5	5	5	4									Y	N	

Blepharitis (18)

Back To Welcome

Partners In Sight Overview

The chart below provides a visual overview of how the Partners In Sight program works.

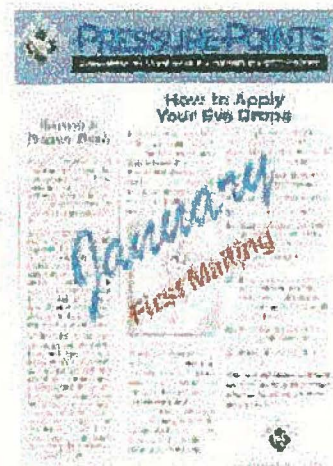
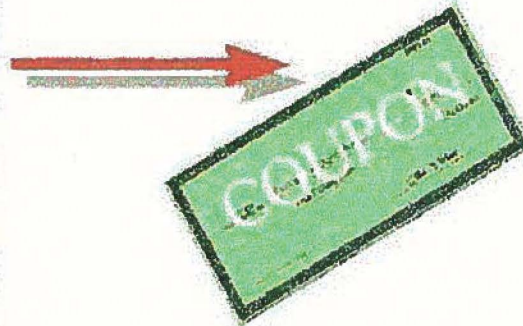
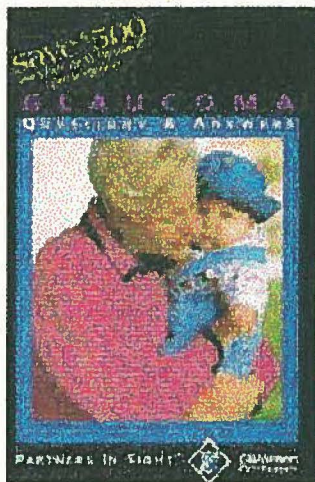
- A new enrollee sends in the Q&A business reply card (example assumes December)
- Patient receives their first mailing: \$5.00 coupon, Pressure Points newsletter, and Frequent Filler Card (After 3 Betimol re-fills, patients receives another \$5.00 coupon and a new Frequent Filler Card, and so on...)
- Patient receives two more "new enrollee" Pressure Point newsletters that focus primarily on compliance (a reminder magnet is also sent in the second mailing)
- After the first three mailings, patient is no longer considered a "new enrollee". Patients then receive quarterly Pressure Point newsletters (not included in this sales aid)



Partners In SightSM

Dedicated to:

- Enhancing Patient Compliance
- Educating Patients About Gl
- Providing A Service To Doctors
- Saving Patients Money



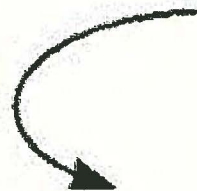
New Member Mailings

Months 2 & 3



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



Existing Member Mailings
Every Quarter

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Example Based on Patient Enrolling in December

Back To Welcome

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GARRETT EYE CENTER

J. M. GARRETT, M.D., F.A.C.S.
G. RICHARD KESKEY, M.D., F.A.C.S.
DEAN L. HARTWIG, O.D.

Iron Mountain: (906) 774-1404
(800) 428-8149
FAX: (906) 774-8132
Escanaba: (906) 786-6705
FAX: (906) 786-9392
Manistique (906) 341-5492

Abstract of senior paper Chris Smith

Through my exposure to optometric/ophthalmologic journals and the Medline databases, there appears to be a void in the areas of patient compliance in the eye care field. There has been some research in patient compliance with other areas of health care, but very little to do specifically with the eyes.

My senior project is going to be a survey to patients who are currently or have recently taken prescribed drops to treat glaucoma, infections, inflammation, or any other ocular condition.

The survey will touch on many aspects of optometric and ophthalmologic treatment and care. The subjects will be randomly selected from a list of patients currently being treated at the Garrett Eye Center in Iron Mountain, Michigan. The survey will inquire about how often patients actually take their drops, while also allowing them to explain their non-compliance, grade our services, and tell us how to improve their compliance.

The answers that I hope to receive from the survey will assist eye care providers in improving their methods as well as providing insight from the patient's point of view.

Dean L. Hartwig O.D.

J. M. GARRETT, M.D.
DEAN L. HARTWIG, O.D.
1301 Carpenter Ave.
Iron Mountain, MI 49801

G. RICHARD KESKEY, M.D., F.A.C.S.
524 Ludington
Escanaba, MI 49829

G. RICHARD KESKEY, M.D., F.A.C.S.
215 Cedar
Manistique, MI 49854