**The Use of a Standardized Patient Satisfaction Questionnaire to
Assess the Quality of Care Provided by Ophthalmology Residents**

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A Master's Paper submitted to the faculty of The University of North Carolina at
Chapel Hill in partial fulfillment of the requirements for the degree of Master of
Public Health in the Public Health Leadership Program

Chapel Hill

2003

Table of Contents

	Page
List of Tables	3
List of Figures	5
Abstract	6
Introduction	7
Materials and Methods	15
Results	22
Discussion	25
Conclusion	30
Acknowledgements	32
References	33
Tables	34
Figure	18

List of Tables

	Page
1. The ACGME General Competencies	34
2. Patient Demographic and Health Status Characteristics	37
3. Overall Score Distribution Characteristics of Subscale Scores	39
4. Distribution of Quality of Communication Skills Subscale Scores By Ophthalmology Resident	40
5. Distribution of Quality of Interpersonal Manner Skills Subscale Scores By Ophthalmology Resident	41
6. Distribution of Quality of Technical Quality Skills Subscale Scores By Ophthalmology Resident	42
7. Distribution of Quality of Professionalism Skills Subscale Scores By Ophthalmology Resident	43
8. Distribution of Quality of Communication Skills Subscale Scores By Race of Patient	44
9. Distribution of Quality of Interpersonal Manner Skills Subscale Scores By Race of Patient	45
10. Distribution of Quality of Technical Quality Skills Subscale Scores By Race of Patient	46
11. Distribution of Quality of Professionalism Skills Subscale Scores By Race of Patient	47
12. Distribution of Quality of Communication Skills Subscale Scores By Racial Congruence	48

13. Distribution of Quality of Interpersonal Manner Skills Subscale	49
Scores By Racial Congruence	
14. Distribution of Quality of Technical Quality Skills Subscale	50
Scores By Racial Congruence	
15. Distribution of Quality of Professionalism Skills Subscale	51
Scores By Racial Congruence	

List of Figures

	Page
1. Overview of Enrollment of Patients Into Study	18

Abstract

Purpose. To use a standardized patient satisfaction questionnaire to address 4 main study questions: (1) what is the overall level of satisfaction with resident care, (2) whether residents differ in the level of satisfaction patients have with their care, (3) whether the race of the patient affects level of satisfaction with residents, and (4) whether racial congruence (patients seeing resident providers of the same race) affects level of satisfaction.

Method. A total of 167 patients of five Duke University Ophthalmology residents completed a 31-item standardized patient satisfaction questionnaire developed at the Duke University Medical Center. The survey was administered at the Durham Veterans Administration Hospital Eye Clinic. The questionnaire assessed four areas of care: Interpersonal Manner, Communication, Technical Quality, and Professionalism. Overall scores were used to assess overall levels of satisfaction with care. Bivariate analysis was used to assess scores by resident, by race, and by racial congruence between patients and their resident providers.

Results. Mean scores on a 5-point scale were 4.46 for Interpersonal Manner, 4.46 for Communication, 4.27 for Technical Quality, and 4.63 for Professionalism. Analysis by resident yielded statistically significant differences in scores between residents on the Interpersonal Manner ($p=.02$) and Communication ($p=.03$) subscales, but not on the Technical Quality ($p=.84$) or Professionalism ($p=.40$) subscales. Analysis by race or racial congruence did not yield significant differences in any subscale.

Conclusion. The Accreditation Council for Graduate Medical Education (ACGME) has established six areas of patient care “general competencies” in which all residency programs are mandated to train and evaluate residents. With a mandate to measure specific competencies, new measurement tools must be developed. We used a modified version of a patient satisfaction survey developed at Duke University to measure 3 components of the general competencies. While more validation of this survey instrument is needed, we found a high level of quality of care, as measured by patient satisfaction, was provided by residents in this setting.

Introduction

In February 1999, the Accreditation Council for Graduate Medical Education (ACGME) established six areas of patient care termed the “general competencies” (descriptions of each are listed in Table 1). As a result of this, all residency programs are mandated to train and evaluate resident performance in these areas. The implementation of these competency objectives was to serve as the first step in a process that would put emphasis on specific outcomes in the educational progression of residents. By creating the system of “general competencies,” the ACGME proscribed not only the areas that residency programs were to stress, but also laid the groundwork for the ways in which residency programs would eventually be evaluated. In addition, the emphasis on these competencies would help shape the type of health care that residents would

provide during their training and the rest of their careers. As a result of this, the ability to assess the clinical performance of medical residents has become an important challenge for residency programs throughout the country.

The implementation of the six areas is planned as a 4-stage process that started in July 2001 and will extend through July 2011 and beyond.¹ We are currently at the beginning of Phase 2 of the implementation plan for the competencies. This phase lasts from July 2002 until June 2006, and is tasked to “sharpening the focus and definition of the competencies and assessment tools.”² Included in this phase is the critical need to “improve evaluation processes as needed to obtain accurate resident performance data.”³ Meanwhile, the accreditation arm of the ACGME will begin to “review evidence that programs are teaching and assessing the competencies.”⁴

There has yet to be a consensus, however, on how residency programs are to incorporate each of the competencies into their educational programs. In addition, there is no consensus on how residents are to be evaluated in each of the six areas. However, many methods of education and evaluation have been proposed, both by the ACGME as well as in institutions around the country. A summary of assessment methods recommended by the ACGME is given in Appendix A.⁵

In early 2003, the Duke Private Diagnostic Clinics in conjunction with researchers in the Duke Ophthalmology Department, developed and tested a standardized patient satisfaction questionnaire - the Duke Clinics Patient Satisfaction Questionnaire (DCPSQ) – for use in clinical settings.⁶ This

questionnaire was largely adapted from subsections of two standardized patient surveys that have been in use for some time: the Patient Satisfaction Questionnaire Short-Form (PSQ-18) developed by RAND and the Consumer Assessment of Health Plans Survey (CAHPS 2.0), originally commissioned by the Agency for Healthcare Research and Quality (AHRQ).

The DCPSQ yields an opportunity to measure quantitatively whether or not patients are satisfied with the quality of care of residents, at least within the areas of care that are within the survey's purview. Avedis Donabedian proposed that measuring quality of care involved measuring three major components: (1) the structure of the health care delivery system, (2) the process by which the health care is delivered, and (3) the outcomes of such care. Within this conceptual framework, the six competencies outlined by the ACGME straddle the lines between more structure-oriented competencies (medical knowledge, systems-based practice, practice-based learning and improvement) and process-oriented ones (patient care, interpersonal skills, and professionalism). Patient surveys are recommended by the ACGME as most appropriate at measuring the Patient Care, Interpersonal and Communication Skills, and Professionalism competencies – the three process-oriented competencies.⁷

The DCPSQ measures 4 different areas of patient care: Technical Quality, Interpersonal Manner, Communication, and Professionalism. These 4 areas correlate well with the 3 process-oriented general competencies: (1) the Technical Quality questions correlate with the Patient Care competency, (2) the Interpersonal Manner and Communication questions correlate with Interpersonal

and Communications Skills, and (3) the Professionalism question correlates with the Professionalism competency.

There are several studies of patient satisfaction using survey tools and with non-ophthalmology residents. Studies with internal medicine residents have shown mixed results. A 1999 study of medical interns (1st year medicine residents) in a walk-in clinic found similar patient satisfaction scores to those of attending physicians.⁸

A 2001 study of medicine residents and attending physicians, however, showed more subtle differences. The study was conducted in both a university and a VA hospital walk-in clinic (overall n=288) and found that the residents had lower satisfaction scores than attending physicians in the university setting, but not in the VA setting.⁹ In addition, while overall differences were not found in the VA setting, residents did score lower on particular questions. These questions included ones that pertain to personal manner and treating the patients with respect. However, on questions of technical skills and overall satisfaction with care, residents and attending physicians had no statistical differences in their scores. It is also notable that in the VA setting, patients gave residents the highest possible rating on approximately 46% of all questions on a 6-point scaled survey, and 53% of all questions on a 5-point scaled survey. (Note that these numbers were significantly lower in the university setting).

Studies of family medicine residents have tended to yield high rates of satisfaction, on par with that of more experienced family physicians. A 1995 study of the quality of care received in after-hours telephone calls to family

medicine residents found that overall patient satisfaction was high: 77% of patients were satisfied with how the residents handled their calls.¹⁰ A 1991 study of family medicine residents in a gynecology clinic found similar levels of satisfaction between residents and the faculty physician.¹¹

Previous studies involving residents in more invasive specialties have also tended to show high levels of satisfaction, similar to attending physicians. A 2000 study of residents performing flexible sigmoidoscopy found no significant difference between levels of satisfaction with residents and more experienced attending physicians.¹² Fully 91% of patients were considered to be “fully satisfied” with the care from residents. A 1997 study of plastic surgery residents found that satisfaction rates were similar to those of more experienced surgeons.¹³ 35% of patients gave the residents a perfect score of 10 on a 10-point satisfaction scale.

There have also been several papers that have examined the effect of race on patient satisfaction in general. A 2003 study using over 338,000 responses to the CAHPS survey found great variations in levels of satisfaction among whites, blacks, Hispanics, and Asians.¹⁴ In general, blacks rated their doctors and their care higher than whites, while Hispanics and Asians rated their care lower than whites. However, this study did look at responses from patients in 615 different types of health plans, and levels of satisfaction varied greatly from plan to plan. Nevertheless, the finding that blacks were more satisfied than whites, while Asians and Hispanics were less satisfied was an important finding. Another 2003 study looked at over 120,000 responses to the National Research Corporation

Healthcare Market Guide Study survey.¹⁵ This study tended to confirm the findings of the CAHPS review, finding Asian/Pacific Islanders and multiracial/other ethnicities to report lower levels of satisfaction with their medical care and health plans than whites, while African Americans gave comparable or higher ratings than whites.

Racial congruence between patients and their physicians may also play a role in patient satisfaction with their care. A 2002 study of African-Americans (Commonwealth Fund Minority Health Survey, n=745)¹⁶ showed that patients with African-American doctors reported higher levels of satisfaction with their physicians compared to African-Americans with primary physicians of other ethnicities.¹⁷ Another 2002 study (n=2720) found that within every category of ethnic group studied – Caucasians, African-Americans, Hispanic, and Asian-American – patients who had race concordant primary physicians reported higher levels of overall satisfaction with care.¹⁸

To this reviewer's knowledge, no previous published studies have examined general levels of patient satisfaction with care by ophthalmology residents. In addition, no previous published studies have used questions from the PSQ-18 as a measure for patient satisfaction with ophthalmology care provided by residents. Additionally, we found no published papers that use PSQ-18 questions to examine the effect of race on patient satisfaction, nor any that examine the effect of race on patient satisfaction specifically in ophthalmology clinics. In this study, I tested whether the DCPSQ standardized questionnaire

could be useful in evaluating the quality of care that residents provide to their patients. In particular, I addressed the following study questions:

- (1) What is the overall level of patient satisfaction with ophthalmology residents in the 4 quality of care components that this survey covers (Technical Quality, Interpersonal Manner, Communication, and Professionalism)?
- (2) Are there statistically significant differences in how ophthalmology residents score on the 4 quality of care components this survey covers?
- (3) Does the race of the patient play a role in the level of satisfaction with resident care?
- (4) Does racial congruence (patients seeing providers of the same race) affect the level of patient satisfaction with resident health care providers?

Previous work with other patient satisfaction surveys and other types of residents have tended to show relatively high levels of patient satisfaction with care, often to the level of more experienced physicians. Thus, it would seem reasonable to expect relatively high levels of satisfaction with this instrument as well. However, given that ophthalmology residents have not been evaluated in this manner before, and that questions from the PSQ-18 have not been used before to evaluate residents, the results from this project may effectively act as a new baseline measurement of patient satisfaction with ophthalmology residents.

The second primary study question was to determine if there are discernible differences among ophthalmology residents in the quality of care provided to their patients. Previous work suggested that patient satisfaction surveys could be useful in measuring the 3 process-oriented general competencies. It is these three – Patient Care, Interpersonal Manner and Communication, and Professionalism - that I aimed to assess residents in. The question of whether or not the tool would be able to discern differences between residents is tested in the course of the project. The null hypothesis was that there would be no discernible differences between residents on each of the areas of care.

In addition, the survey was used to examine two questions related to ethnicity. First, does the race of the patient play a role in the level of satisfaction with resident care? Although studies specific to residents or ophthalmology clinics have not been performed, the two very large survey analyses tend to support the idea that African-Americans tend to rate their satisfaction with medical care with similar or higher scores than whites, while Asian-Americans, Hispanics, and other/multiracial groups tend to be less satisfied. Thus, the hypothesis is that there will be a difference in levels of satisfaction for different ethnicities.

The final study question asks whether racial congruence (patients seeing providers of the same race) affects the level of patient satisfaction with resident health care providers. Again, there have not been studies specific to residents nor ophthalmology clinics, but recent studies tend to indicate that patients who see

physicians of the same ethnicity as themselves are more satisfied with their care. Thus, the hypothesis is that there will be a difference in levels of satisfaction between patients who see residents of their same ethnicity and those who see residents of a different ethnicity.

Materials and Methods

Two primary study questions were addressed: (1) what is the general level of patient satisfaction with the quality of care provided by residents in the Durham VA Hospital Ophthalmology Clinic and (2) Is there variation in the quality of care provided by residents in the same setting? Two secondary study questions were addressed: (1) does race of the patient affect the level of satisfaction with residents in 4 different areas of care?; and (2) does racial congruence between patient and resident provider affect level of satisfaction in 4 different areas of care?

Patients were administered a 31-question self-administered multiple-choice survey - the Duke Eye Clinics Patient Satisfaction Questionnaire (DECPSQ) (see Appendix B). This is a modified version of the Duke Private Diagnostic Clinics Patient Satisfaction Survey¹⁹. The modifications were to make relevant references to the eye clinic setting. The survey includes questions adapted from the RAND Patient Satisfaction Questionnaire 18 (PSQ-18) and the Consumer Assessment of Health Plans Survey version 2.0 (CAHPS 2.0) as well as original questions designed at the Duke University Medical Center. Technical

Quality, Communication, and Interpersonal Manner subscales were constructed from PSQ-18 questions; a Professionalism subscale was constructed from an original question.

Subjects were enrolled from Sept. 4, 2003 to September 30, 2003.

Surveys were administered by a single survey administrator, and surveys were administered only on certain dates during the enrollment period (see Appendix C). Demographic or personal data was not collected on those patients who were seen by residents on days that the survey was not administered. The inclusion criteria were that patients must have been seen and given a full eye exam by a Duke Ophthalmology resident at the Durham, NC Veterans Administration Hospital Eye Clinic during the enrollment period, on the days the survey administrator was in clinic. . Exclusion criteria included: (1) if patients had already filled out the survey the DECPSQ in the Durham VA Eye Clinic during the enrollment period, and (2) if patients' primary eye exam at their visit was given by a non-resident.

The examining resident was recorded for each patient at the time of survey administration. Patients of 5 residents were surveyed in this study: three 1st-year Ophthalmology residents, one 2nd-year resident, and one 3rd-year resident. It should be noted that the Duke Ophthalmology training program has four residents in each of the three years, for a total of 12 residents.

An overview of the enrollment statistics is given in Figure 1. As noted, an unknown number of patients were eligible for enrollment, but seen in the clinic on days that surveys were not being administered. A total of 283 patients were found to be eligible for enrollment on the days surveys were administered during the

study period. A total of 182 patients (64%) were eligible to complete the survey; 101 (36%) were not enrolled because of the logistical restraints of having a single administrator; and 15 of the 182 patients enrolled (8.2%) refused to participate. Of the 167 that participated, 85 (51%) required assistance to complete the surveys. Demographic characteristics of the participating patients are given in Table 2.

Figure 1. Overview of Enrollment of Patients into Study

There was a single survey administrator for all surveys to all patients. The survey administrator gave each patient a standardized introductory description of the administrator and nature of the survey. Patients were informed that participation was voluntary, and responses would be completely anonymous. The project was exempted from IRB approval since no personal identifiers were collected. Patients were asked if assistance would be needed to complete the surveys; assistance consisted of reading each question and the answer choices aloud to the patient.

Answer choices were initially encoded numerically using Microsoft Excel. Non-numeric answers were encoded separately as a Microsoft Word file. Examining resident, patient race, and gender were treated as independent variables. Patient race was encoded using patients' responses to Question 29 (race) and classified as Caucasian, African-American, or Other. "Other" encompassed all other racial codings, including Hispanic, Asian, Native American, and Other. Gender was encoded using patients' responses to Question 22 (gender) and classified as Male or Female. Resident race was also encoded separately, and also classified as Caucasian, African-American, or Other.

The responses to the 9 questions covering Communication, Interpersonal Manner, Professionalism, and Technical Quality were scored between 1 and 5, as per standard scoring instructions for the PSQ-18.²⁰ Negatively worded questions (DECPSQ questions 2, 4, 7, and 9) were scored according to their original response value: "Strongly Agree" = 1, "Agree" = 2, etc. Positively worded

questions (DECPSQ questions 1, 3, 5, 6, and 8) had scored values transposed: “Strongly Agree” = 5, “Agree” = 4, etc, as per standard scoring instructions.

Four subscale scores were calculated according to standard scoring instructions for the PSQ-18, using the mean of the relevant subscale questions.²¹ Four questions (DECPSQ questions 6, 7, 8, and 9) comprised the Technical Quality subscale; two questions (DECPSQ questions 2 and 3) comprised the Interpersonal Manner subscale; and two questions (DECPSQ questions 1 and 4) comprised the Communication subscale. DECPSQ question 5 was an original question concerning Professionalism, and was scored separately as a Professionalism Subscale Score.

SAS v. 8.0101M0 was used to analyze the encoded data. First, a univariate analysis of scores to each question was conducted, yielding a frequency distribution for each answer choice for each question. Frequency distributions for each subscale score were also calculated. Means, medians, and standard deviations for the answers to DECPSQ questions 1 through 9, as well as all subscales, were also calculated.

A bivariate analysis was performed to assess subscale scores by resident provider to determine if there were significant differences in scores among residents. Given the skewed distribution of the scores, a rank sum test with no assumptions of normality was used to compare residents. To assess for differences among all 5 residents, a Kruskal-Wallis Test (rank sums for greater than two groups) was used to compare all 5 residents and yield a p-value. A p-value of .05 was set as the level of significance to reject the hypothesis. Means,

medians, and standard deviations for each of the subscales were also calculated for each of the 5 residents.

A bivariate analysis was performed to assess subscale scores by ethnicity of the patient. Patients were classified as Caucasian, African-American, or Other (for all other self-described races). Means, medians, and standard deviations were calculated for each subscale score for each race. Given the non-normality of the distribution of scores, a Kruskal-Wallis test was used to compare all 3 groups and to assess for the statistical significance of any detected differences. A p-value of .05 was set as the level of significance at which to reject the hypothesis.

Patients were then divided into two groups according to racial congruence with the resident who provided care. Racial congruence was defined as “same” if the patient had a resident provider of the same ethnic group or “different” if the patient and resident were of different ethnicities. Residents and patients were classified as Caucasian, African-American, or Other. A bivariate analysis was performed to assess subscale scores by racial congruence. Means, medians, and standard deviations were calculated for each subscale score for both groups. Subscale scores were compared by calculating rank sums and using a Wilcoxon test (rank sums for 2 groups) to yield a p-value. A p-value of .05 was set as the level of significance at which to reject the hypothesis.

Results

Overall Quality of Care Scores. The overall score distribution characteristics for the 4 subscales (Communication, Interpersonal Manner, Technical Quality, and Professionalism) are presented in Table 3. The mean overall scores were 4.46 for Communication, 4.46 for Interpersonal Manner, 4.27 for Technical Quality, and 4.63 for Professionalism.

Quality of Care Scores By Resident. The results of the Communication subscale scores are classified by resident and summarized in Table 4. The mean scores on this subscale for each resident ranged from 4.23 to 4.73. A Kruskal-Wallis test for differences between residents' scores yielded a significant p-value of .0345.

The results of the Interpersonal Manner subscale scores are classified by resident and summarized in Table 5. The mean scores on this subscale ranged from 4.24 to 4.73 for each resident. A Kruskal-Wallis test for differences between residents yielded a significant p-value of .0218.

The results from the Technical Quality subscale scores are classified by resident and summarized in Table 6. The mean scores on this subscale ranged from 4.19 to 4.34. A Kruskal-Wallis test for differences between residents yielded a non-significant p-value of .8383.

The results from the Professionalism subscale scores are classified by resident and summarized in Table 7. The mean scores on this subscale ranged

from 4.49 to 4.75. A Kruskal-Wallis test for differences between residents yielded a non-significant p-value of .3956

Quality of Care Scores By Race of Patient. The results of the Communication subscale scores are classified by race of the patient and summarized in Table 8. The mean scores on this subscale ranged from 4.43 to 4.50 for the 3 classifications of race (Caucasian, African-American, and Other). A Kruskal-Wallis test for differences in scores between races yielded a non-significant p-value of .6975.

The results of the Interpersonal Manner subscale scores are classified by race of the patient and summarized in Table 9. The mean scores on this subscale ranged from 4.41 to 4.56 for the 3 classifications of race (Caucasian, African-American, and Other). A Kruskal-Wallis test for differences in scores between races yielded a non-significant p-value of .7627.

The results from the Technical Quality subscale scores are classified by race of the patient and summarized in Table 10. The mean scores on this subscale ranged from 4.26 to 4.31 for the 3 classifications of race (Caucasian, African-American, and Other). A Kruskal-Wallis test for differences in scores between races yielded a non-significant p-value of .8346.

The results from the Professionalism subscale scores are classified by race of the patient and summarized in Table 11. The mean scores on this subscale ranged from 4.38 to 4.63 for the 3 classifications of race (Caucasian, African-

American, and Other). A Kruskal-Wallis test for differences in scores between races yielded a non-significant p-value of .3088.

Quality of Care Scores By Racial Congruence Between Patients and Providers.

The results of the Communication subscale scores are classified by racial congruence and summarized in Table 12. Two groups are compared using a Wilcoxon rank sum test: patients who had care provided by residents of the same ethnicity, and those who had residents of a different ethnicity. The mean scores on this subscale were 4.54 for those patients with providers of the same race as themselves and 4.42 for those patients who received care from a provider of a different race. A Wilcoxon test for differences in scores between the two groups yielded a non-significant p-value of .2695.

The results of the Interpersonal Manner subscale scores are classified by racial congruence and summarized in Table 13. The mean scores on this subscale were 4.54 for those patients with providers of the same race as themselves and 4.40 for those patients who received care from a provider of a different race. A Wilcoxon test for differences in scores between the two groups yielded a non-significant p-value of .0902.

The results from the Technical Quality subscale scores are classified by whether the racial congruence and summarized in Table 14. The mean scores on this subscale were 4.37 for those patients with providers of the same race as themselves and 4.21 for those patients who received care from a provider of a

different race. A Wilcoxon test for differences in scores between the two groups yielded a non-significant p-value of .1236.

The results from the Professionalism subscale scores are classified by racial congruence and summarized in Table 15. The mean scores on this subscale were 4.68 for those patients with providers of the same race as themselves and 4.59 for those patients who received care from a provider of a different race. A Wilcoxon test for differences in scores between the two groups yielded a non-significant p-value of .3192.

Discussion

Each of the 4 subscales were scored on a 5-point scale, and the overall mean scores were high on all the subscales measured (Interpersonal Manner, Communication, Professionalism, and Technical Quality). When each of these subscale scores was assessed by resident, significant variation among residents was found on the Communication and Interpersonal Manner subscales, but not on the other two subscales. When the subscale scores were assessed by race of the patients, no statistically significant variations were found on any of the subscales when assessed by patient race nor by patient-provider race concordance.

The use of a patient satisfaction survey to assess physician performance can be useful in certain circumstances,. In fact, a large (n=1,003) study at the McGill University Department of Medicine looked specifically at the feasibility of using patient satisfaction studies to assess residents.²² This study averaged

12.2 collected ratings per resident, and found that patient satisfaction ratings could be useful in evaluating Internal Medicine residents' physician-patient relationship skills. They did note, however, that a large number of ratings may be necessary to give a reliable measure of the skill of each resident.

With the DECPSQ survey, complete subscales were used directly from RAND's PSQ-18, enabling the use of a standardized scoring algorithm and making this potentially comparable across care sites. Our survey allowed for the collection of an average of 33.4 surveys per resident. Because the DCPSQ is in use in other clinics at the Duke University Medical Center, future comparisons of scores between residents and faculty and across specialties may be possible.

The study was limited in part by the character of the survey, which was not designed specifically for the measurement of the components of the "general competencies." The DCPSQ was already in use, and in order to preserve the possibility of future comparisons between Duke Clinics, no significant changes were possible to improve or expand on the questions that were asked. Further, only about half of the questions on the survey were relevant to the aims of this study. However, since all patients were required to complete the entire survey, the number of surveys that could be administered and completed during the study enrollment period was hindered.

In addition, the use of a single administrator for all surveys placed logistical constraints on how many of the patients could be administered the survey during the enrollment period. As noted, 36% of eligible patients were not enrolled. There is no reason to expect that these patients differed from those that

were enrolled. However, due to the constraints of the IRB exemption received for this project, demographic or personal data on these patients could not be collected, and thus we cannot be certain whether there was any bias between patients who completed surveys and those who did not.

Finally, it is worth noting that because surveys were administered post-examination in the Eye Clinic, many patients were unable to see the surveys because of the routine dilation of their pupils. This may have inflated both the percentage who required assistance with the survey as well as the percentage who refused to participate. While this may not be true for other types of clinic settings, it is an important consideration for future use of patient surveys in Ophthalmology clinics.

The setting of the project was the Eye Clinic in the Durham VA Hospital. This setting was chosen as it is principal location where Duke Ophthalmology residents act as primary caregivers to eye patients. Thus, patient scores could more easily be assumed to accurately reflect the abilities of the residents who treated the patients, as opposed to other clinics in the Duke Medical Center where faculty may act as caregivers in addition to residents during the same clinic visit. However, because of the VA setting, the patient population is not necessarily representative of other patient populations, even in other Ophthalmology clinics. For example, the patient population was 35% African-American and 98% male. Other clinic settings, and even other Ophthalmology clinic settings, may have very different types of patient populations.

The overall level of satisfaction with the residents tended to be fairly high. On a 5-point scale, the overall mean scores for all residents ranged from 4.27 to 4.63 on the 4 subscales that were measured. To this reviewer's knowledge, PSQ-18 questions have not been used before to assess residents, and ophthalmology residents have not been assessed in this manner with patient satisfaction surveys. However, these findings are generally consistent with findings from previous surveys in other specialties, which have found that patient satisfaction with resident care is often fairly high. These results could, however, be expanded with future research. Now that scores have been established for this fairly small sampling of Ophthalmology residents, future scores from other patients of other Ophthalmology residents can be compared to these. It would be useful to obtain and compare patient survey data from Ophthalmology faculty and attending physicians, in order to measure differences with the quality of residents' care.

Studies in other specialties have found that often – but not always – residents score similarly to faculty. This may be true for ophthalmology as well, but given the more specialized nature of the field compared to internal medicine or family medicine, it may turn out that more experienced physicians garner higher scores. Future studies need to compare the results of patient satisfaction survey in this setting between residents in different years of their training and more seasoned physicians. A larger sample of residents will be required than was available in this study.

When resident scores were compared, significant differences among residents were found on 2 of the 4 subscales. Although it is hard to generalize

from the relatively small sample of 5 residents, it is useful to know that this tool was able to successfully discriminate between residents on at least some of the subscales. With only 5 residents evaluated, however, it is possible that this group had similar levels of skills in the areas assessed, and that a larger sample of residents may show more variation. The best way to answer this would be to collect more data on more residents; comparing the results from other residents to the data collected in this study may better detail what type of variation in scores there may be between residents.

When subscale scores were assessed by race of the patient, African-American patients had a higher mean satisfaction score than Caucasians on each of the 4 subscales. None of these differences, however, were found to be statistically significant. Given that the differences between ethnicities emerged in two very large (330,000 patient and 120,000 patient) studies this year, it is possible that this study simply did not have sufficient power to detect relatively small differences in satisfaction between races. It is also possible that in ophthalmology clinics or for residents in particular, these differences don't exist. Further study of this question with larger numbers of respondents may show whether or not the small differences in scores in this study bear out to be significant.

Similarly, analysis of subscale scores by racial congruence between patient and resident showed that patients who have providers of a different race from themselves consistently gave lower satisfaction scores in all 4 subscales. Again, however, none of these differences were statistically significant (p-value

<.05). As with the previous question, further study of this question with larger numbers of respondents may show whether these small differences are real or not. Given the importance of treating minority populations in certain ophthalmologic settings – e.g. African-Americans who are at higher risk for glaucoma – understanding how best to treat different ethnicities is a question that could be important for the ophthalmology specialty to address in future studies.

It should also be noted that subscale scores were assessed by gender of the patient, in order to determine if gender affected patient satisfaction with residents. P-values of .009, .009, .36, and .29 were found on the Interpersonal Manner, Communication, Technical Quality, and Professionalism subscales, respectively. However, due to the fact that only 3 females completed the survey, these results may not carry much import, and the details of the analysis are not presented here.

Conclusion

In this study, we have used a standardized questionnaire to assess whether or not patients are satisfied with the level of care provided by residents, and to evaluate whether or not differences in the quality of care were discernible among residents. Even with the relatively limited numbers of this study, we have shown that overall levels of satisfaction are relatively high, and that at least in some instances, residents can be shown to engender different scores from their patients. Finally, we have seen that while ethnicity may play a role in patient satisfaction, it is likely that a larger study than this is needed to show such differences.

In many ways, answering these questions about the quality of care provided by residents is only the first step in the process of changing the way residents are trained and evaluated. First, we must have an established baseline of what the current state of resident care is. Next, accurate, useful, and easy-to-use assessment tools must be developed and tested. And finally, we must address the questions of what types of interventions may successfully and feasibly yield improvements in the level of care that residents deliver. Already, steps have begun to be taken in this direction. A study at Michigan State University attempted a randomized controlled intervention to improve the patient satisfaction scores of resident care.²³ They found that an intensive one-month psychosocial training program increased patient confidence in the residents who treated them as well as general satisfaction with care. While much more work needs to be done to determine what types of education and assessment are most appropriate for different types of residents, promising steps forward have already begun to appear in the literature.

The assessment and education of residents in the areas of the ACGME's general competencies will continue to be a challenge in the years to come. The overall goal, however, of improving the clinical skills of residents is one that we must all continue to strive towards. This study demonstrates that residents do provide a high level of quality of care in this setting. By improving the quality of care that residents provide to their patients, we may cause an impact that patients will appreciate for decades to come.

Acknowledgments

The author would like to sincerely thank the following individuals for their assistance with this project:

Dr. Pratap Challa in the Department of Ophthalmology at Duke, without whom this project would not have happened.

My advisor Dr. Vijaya Hogan, for her invaluable help and guidance in the editing and preparation of this paper.

Dr. Sandra Stinnett for her generous time and effort in guiding me through the woods of SAS and crunching the numbers for the statistical analyses in this report.

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Table 1: The ACGME General Competencies

(Source: ACGME General Competencies v. 1.3)

General Competency	Description
Patient Care	<p>Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:</p> <ul style="list-style-type: none"> • communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families • gather essential and accurate information about their patients • make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment • develop and carry out patient management plans • counsel and educate patients and their families • use information technology to support patient care decisions and patient education • perform competently all medical and invasive procedures considered essential for the area of practice • provide health care services aimed at preventing health problems or maintaining health • work with health care professionals, including those from other disciplines, to provide patient-focused care
Medical Knowledge	<p>Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care. Residents are expected to:</p> <ul style="list-style-type: none"> • demonstrate an investigatory and analytic thinking approach to clinical situations • know and apply the basic and clinically supportive sciences which are appropriate to their discipline
Practice-based learning and improvement	<p>Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Residents are expected to:</p> <ul style="list-style-type: none"> • analyze practice experience and perform practice-based improvement activities using a systematic methodology • locate, appraise, and assimilate evidence from scientific studies related to their patients' health

	<p>problems</p> <ul style="list-style-type: none"> • obtain and use information about their own population of patients and the larger population from which their patients are drawn • apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness • use information technology to manage information, access on-line medical information; and support their own education • facilitate the learning of students and other health care professionals
Interpersonal and communication skills	<p>Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates. Residents are expected to:</p> <ul style="list-style-type: none"> • create and sustain a therapeutic and ethically sound relationship with patients • use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills • work effectively with others as a member or leader of a health care team or other professional group
Professionalism	<p>Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Residents are expected to:</p> <ul style="list-style-type: none"> • demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supercedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development • demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices • demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities
Systems-based practice	<p>Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Residents are expected to:</p> <ul style="list-style-type: none"> • understand how their patient care and other professional practices affect other health care professionals, the health care organization, and

	<p>the larger society and how these elements of the system affect their own practice</p> <ul style="list-style-type: none"> • know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources • practice cost-effective health care and resource allocation that does not compromise quality of care • advocate for quality patient care and assist patients in dealing with system complexities • know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance
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Table 2. Patient Demographic and Health Status Characteristics.

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

Variable		Patients (%)
Ethnicity		
	Caucasian	60.00
	African-American	35.15
	Other	4.85
Gender		
	Male	98.18
	Female	1.82
Health Status		
	Poor	12.73
	Fair	33.94
	Good	33.94
	Very Good	15.15
	Excellent	4.24
Main Reason for Visit		
	New Patient	4.88
	Routine Checkup	48.17
	Problems/Unscheduled Visit	4.27
	Illness	5.49
	Injury	1.22
	Follow-Up Visit	32.32
	Other	3.66
Education Level (years of schooling)		
	0-11 years	31.10
	12 years	29.27
	13-15 years	24.39
	16 years	9.76
	17+ years	5.49
Age*		
	Mean	68.5 years
	<45 years old	2.42
	45-54 years old	9.70
	55-64 years old	22.42
	65-74 years old	26.06
	75-84 years old	37.58
	85+ years old	1.82

Primary Language		
	English	99.39
	Spanish	0.61

* As calculated by subtracting year of birth from 2003.

Table 3. Overall Score Distribution Characteristics of Subscale Scores

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

	Communication	Interpersonal Manner	Technical Quality	Professionalism
N	167	167	167	167
Mean	4.46	4.46	4.27	4.63
Median	4.50	4.50	4.25	5.00
SD	0.62	0.56	0.61	0.51
Observed Minimum	2.00	2.00	2.25	3.00
Observed Maximum	5.00	5.00	5.00	5.00

Table 4. Distribution of Quality of Communication Skills Subscale Scores By
Ophthalmology Resident

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

	Resident 1	Resident 2	Resident 3	Resident 4	Resident 5
N	37	52	59	11	8
Mean	4.23	4.55	4.47	4.73	4.56
Median	4.50	5.00	4.50	5.00	4.50
SD	0.65	0.66	0.58	0.41	0.42
Observed Minimum	2.50	2.00	3.00	4.00	4.00
Observed Maximum	5.00	5.00	5.00	5.00	5.00
Chi-Square (Kruskal- Wallis)	10.38 (4 deg. of freedom)				
p-value (Kruskal- Wallis)	0.0345				

Table 5. Distribution of Quality of Interpersonal Manner Skills Subscale Scores By
Ophthalmology Resident

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

	Resident 1	Resident 2	Resident 3	Resident 4	Resident 5
N	37	52	59	11	8
Mean	4.24	4.52	4.47	4.73	4.56
Median	4.50	4.50	4.50	5.00	4.50
SD	0.57	0.61	0.52	0.41	0.50
Observed Minimum	2.50	2.00	3.00	4.00	3.50
Observed Maximum	5.00	5.00	5.00	5.00	5.00
Chi-Square (Kruskal- Wallis)	11.46 (4 deg. of freedom)				
p-value (Kruskal- Wallis)	0.0218				

Table 6. Distribution of Quality of Technical Quality Skills Subscale Scores By
Ophthalmology Resident

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

	Resident 1	Resident 2	Resident 3	Resident 4	Resident 5
N	37	52	59	11	8
Mean	4.19	4.25	4.32	4.34	4.28
Median	4.25	4.25	4.25	4.25	4.13
SD	0.61	0.68	0.61	0.54	0.49
Observed Minimum	2.50	2.50	2.25	3.50	3.75
Observed Maximum	5.00	5.00	5.00	5.00	5.00
Chi-Square (Kruskal- Wallis)	1.44 (4 deg. of freedom)				
p-value (Kruskal- Wallis)	0.8383				

Table 7. Score Distribution of Quality of Professionalism Skills Subscale Scores By
Ophthalmology Resident

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

	Resident 1	Resident 2	Resident 3	Resident 4	Resident 5
N	37	52	59	11	8
Mean	4.49	4.67	4.64	4.73	4.75
Median	5.00	5.00	5.00	5.00	5.00
SD	0.56	0.51	0.48	0.47	0.46
Observed Minimum	3.00	3.00	4.00	4.00	4.00
Observed Maximum	5.00	5.00	5.00	5.00	5.00
Chi-Square (Kruskal- Wallis)	4.08 (4 deg. of freedom)				
p-value (Kruskal- Wallis)	0.3956				

Table 8. Score Distribution of Quality of Communication Skills Subscale Scores By Race of Patient

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

Patient Race:	Caucasian	African-American	Other
N	99	58	8
Mean	4.43	4.50	4.50
SD	0.63	0.61	0.60
Median	4.50	4.50	4.75
Observed Minimum	2.00	2.50	3.50
Observed Maximum	5.00	5.00	5.00
Chi-Square (Kruskal-Wallis)	0.7206 (2 degrees of freedom)		
p-value (Kruskal-Wallis)	.6975		

Table 9. Score Distribution of Quality of Interpersonal Manner Skills Subscale Scores
By Race of Patient

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

Patient Race:	Caucasian	African-American	Other
N	99	58	8
Mean	4.41	4.50	4.56
SD	0.61	0.49	0.50
Median	4.50	4.50	4.75
Observed Minimum	2.00	3.00	4.00
Observed Maximum	5.00	5.00	5.00
Chi-Square (Kruskal-Wallis)	0.5418 (2 degrees of freedom)		
p-value (Kruskal- Wallis)	.7627		

Table 10. Score Distribution of Quality of Technical Quality Skills Subscale Scores By Race of Patient

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

Patient Race:	Caucasian	African-American	Other
N	99	58	8
Mean	4.26	4.28	4.31
SD	0.59	0.67	0.59
Median	4.25	4.25	4.38
Observed Minimum	2.50	2.25	3.50
Observed Maximum	5.00	5.00	5.00
Chi-Square (Kruskal-Wallis)	0.3617 (2 degrees of freedom)		
p-value (Kruskal-Wallis)	.8346		

Table 11. Distribution of Quality of Professionalism Skills Subscale Scores By Race of Patient

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

Patient Race:	Caucasian	African-American	Other
N	99	58	8
Mean	4.63	4.66	4.38
SD	0.53	0.48	0.52
Median	5.00	5.00	4.00
Observed Minimum	3.00	4.00	4.00
Observed Maximum	5.00	5.00	5.00
Chi-Square (Kruskal-Wallis)	2.3502 (2 degrees of freedom)		
p-value (Kruskal-Wallis)	.3088		

Table 12. Distribution of Quality of Communication Skills Subscale Scores By Racial Congruence

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

	Pts. with Provider of Same Race	Pts. with Provider of Different Race
N	57	108
Mean	4.54	4.42
SD	0.57	0.64
Median	4.50	4.50
Observed Minimum	2.50	2.00
Observed Maximum	5.00	5.00
Chi-Square (Kruskal-Wallis)	1.2192 (1 degree of freedom)	
p-value (Kruskal-Wallis)	.2695	

Table 13. Distribution of Quality of Interpersonal Manner Skills Subscale Scores By Racial Congruence

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

	Pts. with Provider of Same Race	Pts. with Provider of Different Race
N	57	108
Mean	4.54	4.40
SD	0.53	0.58
Median	4.50	4.50
Observed Minimum	3.00	2.00
Observed Maximum	5.00	5.00
Chi-Square (Kruskal-Wallis)	2.8700 (1 degree of freedom)	
p-value (Kruskal-Wallis)	.0902	

Table 14. Distribution of Quality of Technical Quality Skills Subscale Scores By Racial Congruence

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

	Pts. with Provider of Same Race	Pts. with Provider of Different Race
N	57	108
Mean	4.37	4.21
SD	0.59	0.62
Median	4.25	4.25
Observed Minimum	2.50	2.25
Observed Maximum	5.00	5.00
Chi-Square (Kruskal-Wallis)	2.3706 (1 degree of freedom)	
p-value (Kruskal-Wallis)	.1236	

Table 15. Score Distribution of Quality of Professionalism Skills Subscale Scores By Racial Congruence

(Source: Duke Eye Clinic Patient Satisfaction Questionnaire, 2003. Durham, NC)

	Pts. with Provider of Same Race	Pts. with Provider of Different Race
N	57	108
Mean	4.68	4.59
SD	0.47	0.53
Median	5.00	5.00
Observed Minimum	4.00	3.00
Observed Maximum	5.00	5.00
Chi-Square (Kruskal-Wallis)	.9922 (1 degree of freedom)	
p-value (Kruskal-Wallis)	.3192	

Appendix A

Appendix A: Recommended Methods of Evaluation for the General Competencies.

(Source: The ACGME “Toolbox of Assessment Methods, Version 1.1,” Sept. 2000.)

Assessment Methods	Description
Record Review	Trained staff in an institution’s medical records department or clinical department perform a review of patients’ paper or electronic records. The patient record findings are summarized and compared to accepted patient care standards.
Chart-Stimulated Recall Oral Examination	Patient cases of the examinee (resident) are assessed in a standardized oral examination. The examiners probe for reasons behind the work-up, diagnoses, interpretation of clinical findings, and treatment plans.
Checklist Evaluation	Checklists consist of essential or desired specific behaviors, activities, or steps that make up a more complex competency or competency component. Standards need to be set to indicate what constitutes passing, failing, or gradations of performance.
Global Rating of Live or Recorded performance	With global rating forms, a rater judges general categories of ability, and the ratings are completed retrospectively based on general impressions collected over a period of time.
Standardized Patient Examination (SP)	Standardized patients (SPs) are well persons trained to simulate a medical condition in a standardized way or

	<p>actual patients who are trained to present their condition in a standardized way. Using a checklist or rating form, a physician observer or the SPs evaluate the resident's performance on appropriateness, correctness, and completeness of specific patient care tasks and expected behaviors. Performance criteria are set in advance.</p>
Observed Structured Clinical Examination (OSCE)	<p>In an OSCE, assessment tools are administered at 12 to 20 separate standardized patient encounter stations, each station lasting 10-15 minutes. Other assessment tools such as data interpretation exercises and clinical scenarios with mannequins can be used to assess technical skills.</p>
Simulations and Models	<p>Simulations used for assessment of clinical performance closely resemble reality and attempt to imitate but not duplicate real clinical problems. Simulation formats have been developed as paper-and-pencil branching problems, computerized versions called clinical case examinations, role-playing situations, anatomical models or mannequins, or a combination of all three formats.</p>
360-degree Evaluation Instrument	<p>Measurement tools completed by multiple people in a person's sphere of influence. Evaluators are usually</p>

	superiors, peers, subordinates, and patients and families.
Portfolios	A portfolio is a collection of products prepared by the resident that provides evidence of learning and achievement related to a learning plan. A portfolio typically contains written documents but can include video or audio-recordings, photographs, and other forms of information.
Written Examination (MCQ)	A written or computer-based MCQ examination is composed of multiple-choice questions (MCQ) selected to sample medical knowledge and understanding of a defined body of knowledge, not just factual or easily-recalled information. A typical half-day examination has 175 to 250 test questions.
Standardized Oral Examination	The standardized oral examination is a type of performance assessment using realistic patient cases with a trained physician examiner questioning the examinee. Exams last approximately 90 minutes to two and on-half hours with two to four separate 30 or 60-minute sessions.
Procedure, Operative, or Case Logs	Procedure, operative, or case logs document each patient encounter by medical conditions seen, surgical operation or procedures performed. Patient case logs

	involve recording of some number of consecutive cases in a designated time frame.
Patient Surveys	Surveys of patients to assess satisfaction with hospital, clinic, or office visits typically include questions about the physician's care. A typical patient survey asks patients to rate their satisfaction with care using rating categories. Each rating is given a value and a satisfaction score calculated.

Appendix B

DUKE EYE CLINIC PATIENT SATISFACTION QUESTIONNAIRE

SECTION 1: Below are some things people say about medical care. Please read each one carefully, keeping in mind the medical care you (*the patient*) are receiving now at the **Duke Eye clinic**. We are interested in your feelings, good and bad, about the medical care you (*the patient*) have received.

How strongly do you AGREE or DISAGREE with each of the following statements?

(Circle One Number on Each Line)

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1. My Duke Eye clinic doctor is good about explaining the reason for medical tests (PSQ-18. Q1)	1	2	3	4	5
2. My Duke Eye clinic doctor acts too businesslike and impersonal towards me (PSQ-18. Q10)	1	2	3	4	5
3. My Duke Eye clinic doctor treats me in a very friendly and courteous manner (PSQ-18. Q11)	1	2	3	4	5
4. My Duke Eye clinic doctor sometimes ignores what I tell them (PSQ-18. Q13)	1	2	3	4	5
5. My Duke Eye clinic doctor acts professional at all times (new question)	1	2	3	4	5
6. I think my Duke Eye doctor's office has everything needed to provide complete medical care (PSQ-18. Q2)	1	2	3	4	5
7. Sometimes Duke Eye clinic doctors make me wonder if their diagnosis is correct (PSQ-18. Q4)	1	2	3	4	5
8. When I go for medical care at the Duke Eye clinic , they are careful to check everything when treating and examining me (PSQ-18. Q6)	1	2	3	4	5
9. I have some doubts about the ability of the Duke Eye clinic doctors who treat me (PSQ-18. Q14)	1	2	3	4	5

(Continued on page 2)

SECTION 2: For the following section, consider the medical care you have received at the **Duke Eye clinic** in the last 12 months. Please answer all the questions by checking the box to the left of your answer.

10. In the last 12 months, when you called the **Duke Eye clinic** during regular office hours, how often did you get the help or advice you needed? (CAHPS ACQ. Q15)

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always
- ☐ I didn't call for help or advice during regular office hours in the last 12 months

11. In the last 12 months, how often did you get an appointment for regular or routine health care in the **Duke Eye clinic** as soon as you wanted? (CAHPS ACQ. Q17)

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always
- ☐ I didn't need an appointment for regular or routine care in the last 12 months

12. In the last 12 months, when you needed care right away for an illness or injury, how often did you get care in the **Duke Eye clinic** as soon as you wanted? (CAHPS ACQ. Q19)

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always
- ☐ I didn't need care right away for an illness or injury in the last 12 months

13. In the last 12 months, when you arrived for your appointment at the **Duke Eye clinic**, how often was it easy for you to locate the clinic

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ I didn't need to go to the clinic; it was a lab-only visit

If Never or Sometimes, I had trouble due to:

- ☐ Could not find parking space
- ☐ Directions to facility were unclear or confusing
- ☐ Inaccessible to handicapped patients
- ☐ Directions to appointment location were unclear
- ☐ Clinic has moved since the last time I was here
- ☐ Other _____

14. In the last 12 months, how often did you wait in the **Duke Eye clinic** more than 15 minutes past your appointment time to see the person you went to see? (CAHPS ACQ. Q24)

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always
- ☐ I had no visits in the last 12 months

15. In the last 12 months, how often did office staff at the **Duke Eye clinic** treat you with courtesy and respect? (CAHPS ACQ. Q25)

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always
- ☐ I had no visits in the last 12 months

If Never or Sometimes, please specify who did not treat you with courtesy and respect. Check all that apply:

- ☐ Service representative(s) at check in/check out
- ☐ Clinic financial representative
- ☐ Billing account representative
- ☐ Lab technician
- ☐ Nurse
- ☐ Provider
- ☐ Other _____

16. In the last 12 months, how often were office staff at the **Duke Eye clinic** as helpful as you thought they should be? (CAHPS ACQ. Q26)

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always
- ☐ I had no visits in the last 12 months

Overall the clinic staff (doctors, nurses, receptionist, etc.) seemed to work well together as a team.

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

17. In the last 12 months, how often did you feel valued and appreciated as a patient at **Duke Eye clinic**

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always
- ☐ I had no visits in the last 12 months

18. Would you return as a patient to the **Duke Eye clinic** should the need arise?

- ☐ Yes
- ☐ No
- ☐ Undecided

19. We want to know your rating of all your health care in the last 12 months from the **Duke Eye clinic**. Use any number from 0 to 10 where 0 is the worst health care possible, and 10 is the best health care possible. How would you rate all your health care? (CAHPS ACQ. Q31)

- ☐ 0 Worst health care possible
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10 Best health care possible
- ☐ I had no visits in the last 12 months

SECTION 3: Please answer the following questions about yourself and your health care by checking the box to the left of your answer. All questions apply to you (*the patient*).

20. Your overall rating of your own health

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very Good
- ☐ Excellent

21. Main reason for your visit today

- ☐ New Patient
- ☐ Routine Check-Up
- ☐ Problems / Unscheduled visit
- ☐ Illness
- ☐ Injury
- ☐ Follow-up Visit
- ☐ Pregnancy
- ☐ Other

22. Are you

- ☐ Male
- ☐ Female

23. Year you were born: ____ ____ ____ ____

24. Was this your first visit to this clinic?

- ☐ Yes
- ☐ No

25. The type of health insurance coverage that you have (*fill in all that apply*)

- ☐ Health insurance through employer, union, or purchased individually
- ☐ Medicaid or medical assistance
- ☐ Medicare
- ☐ Military/VA
- ☐ No health insurance

26. Are you enrolled in a managed care plan (HMO/PPO)

- ☐ Yes
- ☐ No
- ☐ Don't Know

27. The number of years of school you've completed:

(*please specify*): ____ ____

28. The primary language spoken in your home

- ☐ English
- ☐ Spanish
- ☐ French
- ☐ Russian
- ☐ Arabic
- ☐ Chinese
- ☐ Japanese
- ☐ Other

29. Your racial/ethnic group

- ☐ White
- ☐ African-American/Black
- ☐ Hispanic
- ☐ Asian
- ☐ Native American
- ☐ Arab
- ☐ Other

30. Was the doctor seen today

- ☐ Male
- ☐ Female

31. Was the doctor seen today your regular doctor?

- ☐ Yes
- ☐ No
- ☐ Don't Know

Appendix C

Appendix C: Dates of Administration of DECPSQ

Date of Administration
9/11/03
9/12/03
9/17/03
9/18/03
9/22/03
9/23/03
9/24/03
9/25/03
9/26/03
9/29/03
9/30/03