

# THE ETHICAL EDUCATION OF OPHTHALMOLOGY RESIDENTS: AN EXPERIMENT

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## ABSTRACT

*Purpose:* To demonstrate the effect of ethics education on a resident's ability to answer questions that relate to moral dilemmas and on the clinical evaluations of residents by faculty.

*Methods:* The curriculum for the ethics education that was used for this study was designed by the author and consisted of 10 lectures of 1.5 hours each. Five residencies were included in the project. One residency received one lecture, two residencies received three lectures, and two residencies received 10 lectures. To evaluate the moral skills of the residents at the beginning of the course and at the end, the residents were given the Defining Issues Test (DIT-2) developed by James Rest, which involves answering standardized questions about four moral dilemmas. Faculty evaluations were completed before and after the ethics lectures were given. At the beginning of the ethics course, each resident was given a social survey that was designed to assess participation in community, religious, political, and societal activities as well as attitudes about these activities. All residents were also asked demographic information, including their age, gender, and year of residency.

*Results:* The results of the DIT-2 taken before and after the ethics lectures were compared. No correlations were found in faculty evaluations of clinical performance of the residents before and after the course ( $P = .052$ ). Associations between DIT-2 scores and questions on community and religion in the social survey were noted.

*Conclusion:* The finding that the effect of an ethics course on residents' ability to answer moral dilemmas did not achieve statistical significance should be accepted with the understanding that this was a first attempt at standardization of many variables, especially the format of the curriculum and materials used. The use of faculty evaluations to assess clinical performance needs to be standardized, and the faculty members need additional training to ensure validity of the results. The social survey was also the first attempt to assess an association between a resident's response to moral dilemmas, attending evaluations, and residents' opinions that relate to community, society, politics, and religion.

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## INTRODUCTION

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The Accreditation Council of Graduate Medical Education (ACGME) requires that medical residency programs teach ethics.<sup>1</sup> In order to optimize this, it will be necessary to determine what teaching methods to use and how to assess those methods. The ACGME has "tool boxes" to help develop standard methods to teach and to test residents.<sup>1</sup> This project is a nascent attempt to assess a method of evaluating moral skills of ophthalmology residents using the Defining Issues Test (DIT) developed by James Rest and to deliver an ethics curriculum that will improve the ability of residents to resolve moral dilemmas.<sup>2-5</sup>

## BACKGROUND

There are several definitions of ethics to consider. Beauchamp and Childress state: "Ethics is a generic term for various ways of understanding and examining the moral life."<sup>6(p1)</sup> Under this definition, morality uses norms that are generally socially acceptable to define right and wrong behavior.<sup>6(pp2,3)</sup> Thus, moral issues are raised in order to examine behavior and to "...ask normative questions about the rights and welfare of persons and about the character of the agent, in particular, about the kinds of persons we should strive to become."<sup>7</sup> A fundamental aspect of ethics is the need to deal with moral dilemmas. Dilemmas exist where two values (eg, life versus law) cannot be satisfied in a single solution. Thus, there may exist more than one correct form of ethical behavior. Therefore, ethical norms, values, and principles may be in conflict with one another, and the solution may favor one norm, value, or principle over another.<sup>8</sup>

The history of moral evaluation started with Emile Durkheim, Jean Piaget, and Lawrence Kohlberg, who linked morality with social development.<sup>9</sup> Piaget and Kohlberg specifically attempted to gain insights into how children<sup>10</sup> and young adults<sup>11(pp1-19)</sup> develop moral skills. Kohlberg and his colleagues developed the Standard Issue Moral Judgment Interview and Scoring System, which posed standardized moral dilemmas for which responses could be scored. The test was tape-recorded and required that the person giving it be trained in interview methods. The answers were then compared to standardized answers and rated for level and stage of moral judgment. The results allowed for moral development to be described in three levels that included six stages. The levels are preconventional (stages 1 and 2), conventional (stages 3 and 4), and postconventional (stages 5 and 6). The stages are as follows: stage 1, obedience (a concrete perspective); stage 2, individualism (acting in one's own best interest); stage 3, member-of-society perspective (understands rules and need for mutual relationships); stage 4, social order (understands individual point of view in relation to a societal point of view, wants to maintain a moral system for society); stage 5, social contract (takes a prior to society

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perspective, that is, awareness of basic human rights and values that should exist prior to social attachments and contracts); stage 6, universal principles (principles that would be needed to start a moral society, rational belief in universal principles such as justice, equality of human rights, and respect for human dignity).<sup>11(pp1-19),12</sup>

James Rest and his colleagues subsequently designed the DIT, which was shorter and easier to administer because it was given to a group and was scored by computer. The current DIT (DIT-2) has four components; it scores moral sensitivity, moral judgment, moral motivation, and moral character.<sup>12(p9)</sup> It has been used extensively and has become a standard in the field of moral education.

## PROJECT GOALS

The major goals of the current investigation were based on the hypothesis that the skills needed to evaluate moral dilemmas could be taught, and that this teaching effort would result in improved clinical performance evaluations. Secondary goals were to determine if a critical number of ethics lectures would result in improved scores on the updated DIT, the DIT-2,<sup>4</sup> and whether or not there was any association between the residents' answers to questions about moral dilemmas and the clinical performance evaluations of residents by faculty.

Recent literature has demonstrated that ethics education results in improved clinical performance (and fewer malpractice events).<sup>12(p9),13-23</sup> Similar works in the fields of dentistry, nursing, and orthopedics have demonstrated the positive effects of ethics education on clinical behavior.<sup>24</sup> The research that has come to these conclusions has evolved from indirect and subjective studies to those that are direct and statistically validated. The former is seen with the correlation observed between orthopedic surgeons having fewer malpractice claims when being rated as "virtuous." Adamson and associates<sup>13</sup> define the "virtuous" orthopedist as one who spent time with patients to explain the disease, answer questions, and establish rapport. The time spent with patients also correlated with fewer malpractice claims. Rowley and coworkers<sup>15,16</sup> found those values most associated with professionalism to be integrity, trustworthiness, reliability, and accountability. They also noted the need to develop a teaching program and an environment where these values are more likely to be aspired to. More recently a more scientific approach can be seen in the works of Self and colleagues.<sup>17-23</sup> They clarify the need for specific techniques and a minimum number of hours to teach ethics in order to have an objective effect as well as a subjective effect. The objective assessment of moral evaluation skills using the DIT-2, which has a social justice and a moral obligation basis, needs to be combined with a character/virtue-based assessment of professionalism. That is, both the learning and assessment of the norms, values, and principles of ethics, as well as the education and assessment of character (virtue ethics), are needed to fully evaluate the ethics education of a physician.<sup>25(p48),26(pp147,148)</sup>

Research on the effects of teaching ethics is a recent endeavor, and teaching techniques, teaching materials, standardized curricula, and competent ethics teachers are needed. However, the current social awareness of the importance of ethics in professions has called more attention to this problem. The support for a standard ethics curriculum can also be found in the clinical literature on medical ethics, the codes of medical ethics, and the journals and texts that publish ethics cases and ethics issues. The purpose of this study was to see if a more direct association could be made between ethics education and professional behavior. Rest states "...that several hundred studies have addressed this...however, the linkage is not strong."<sup>3</sup> Therefore, it is not surprising that the early efforts with orthopedists are not consistent. The study by Adamson and associates<sup>13</sup> indicates that ethics education may have been a factor that decreased malpractice claims, whereas Baldwin and Bunch<sup>14</sup> found significant heterogeneity in the DIT-2 scores of orthopedic surgeons. It seems likely that, as is discussed in the work of Bebeau,<sup>24</sup> it will take perhaps decades and considerable resources for ethics education to effect moral actions (professionalism). Bebeau concludes that "our ongoing outcomes studies (of dentists) have done much to dispel the popular belief that ethics can't be taught and that faculty without formal ethics training are not equipped to teach."<sup>24</sup> The ultimate aim of this research is to have ethics education as an integrated part of the curriculum for ophthalmology residents.

## METHODS

The study group consisted of residents from five local area residencies that were chosen because the location was convenient for the author. This study was approved by the institutional review board of North Shore University Hospital (#01-099). No residents were excluded from the study, which started with 55 eligible participants. One program had 19 residents, one had 12 residents, two programs had nine residents each, and one had six residents. One resident refused to sign the informed consent, and two left their residency. Each resident was assigned a code number to ensure that all results were partially anonymous. The code number included specific digits to identify the institution (first digit), the year of residency (last digit), and the individual (second and third digit). The investigator was masked to avoid tracing the results to a particular resident.

Residents completed the assessment of moral evaluation skills assessment (DIT-2) before the ethics education intervention program began and again at the completion of the academic year. A voluntary social survey was distributed by mail to all residents at the start of the ethics course.

As was the routine at all institutions, faculty evaluations were completed at the end of the academic year. The staff at each institution was asked to copy each evaluation, make the evaluations anonymous, and forward them to the author at the end of the year.

## DEFINING ISSUES TEST

The DIT-2 developed by James Rest was used to assess competency in resolving moral dilemmas (Table 1).<sup>3</sup> This test involved using paper and pencil to answer standardized questions that relate to four moral dilemmas. The answer sheets were mailed to the Center for

the Study of Ethical Development at the University of Minnesota,<sup>4</sup> where they were scored using a system that has been validated by criteria and reliability studies (see “Discussion” section).<sup>5</sup>

**TABLE 1. DILEMMAS POSED BY THE DIT-2**

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<b>DILEMMA 1.</b>	Famine Story: Should a father whose family is near starvation steal food from someone who is hoarding some food?
<b>DILEMMA 2.</b>	Reporter Story: Should a reporter write about information regarding a political candidate that relates to something that happened 20 years ago?
<b>DILEMMA 3.</b>	School Board Story: Should a School Board Chairman cancel the second open meeting about closing a school in the district because the first meeting was a disaster?
<b>DILEMMA 4.</b>	Doctor Dilemma: Should a doctor give an increased dosage of medication to relieve the pain of a patient in the last stages of cancer because the patient requested it and realizes that this may hasten death?

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All of the dilemmas are followed by 12 questions that relate to specific ethical issues in the story and are then ranked within each issue as to importance.

DIT-2 = Defining Issues Test.

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In this project, the DIT-2 was given at the beginning and end of the ethics education course. Five residency programs were included in the research. One residency program received one ethics lecture, two residency programs received three ethics lectures, and two residency programs received 10 ethics lectures. The results are expressed in number of lectures attended and by residency.

Results are expressed as P scores (P is not italicized when referring to scores in order to differentiate it from the probability *P* value) and N2 scores. The P score “is the weighted sum of ranks for the ‘post-conventional’ items,” which are “items representing postconventional thinking.” These items “do not only reflect a Rawlsian view, a libertarian view, and other forms of postconventionality—but they all have in common an appeal to a sharable ideal that is open to scrutiny.”<sup>27(p96)</sup> The importance of this amalgam of theories and norms deserves further explanation. The two theories that are combined are the utilitarian theory first described by Jeremy Bentham and John Stuart Mills and the deontological theory of Immanuel Kant. The former views human ethics as having good or bad consequences, whereas the deontological approach favors judging actions as right or wrong. John Rawls developed a theory of morality that is deontological but is more consistent with principles of social justice. Thus, it represents a more balanced theoretical approach to the issues of autonomy and distributive justice. A libertarian theory of distributive justice favors minimal government involvement in the affairs of its citizens and more reliance on the free interactions of people to resolve issues of distribution of social goods, such as health care. The N2 attempts a slightly more sophisticated scoring of the responses to the moral dilemmas. It assumes that developmental advancement is obtained “by the acquisition of new high stage items and also by discriminating high from low.” Both parts of the N2 index together (ranking postconventional items and also the degree to which ratings of stages 5 and 6 items are discriminated from ratings of stages 2 and 3 items) seem to act synergistically.<sup>28</sup>

## **CURRICULUM**

The curriculum included the 10 topics listed in Table 2 (see Appendix A for reading list), and the investigator gave all lectures. Each lecture lasted approximately 1.5 hours, including discussion time. After each lecture, the residents were asked to complete a questionnaire that asked the following questions:

1. Did the lecturer make you aware of new issues?
2. Do you think that the material presented will help you?
3. How would you improve the lecture?
4. Were the subjects presented fairly?
5. Comments?

The curriculum for residency programs 1 and 2 included all 10 lectures (Table 2), residency programs 3 and 4 had three lectures (4, 5, and 8), and residency program 5 had one lecture (lecture 1).

## **FACULTY EVALUATIONS OF PROFESSIONALISM**

The ACGME requires that residents be evaluated twice a year. The American Board of Ophthalmology (ABO) has only recently suggested standardized forms for this process that are similar to those of the American Board of Internal Medicine (ABIM). In a 2002 mailing, the ABO suggested two possible forms, a short form and a long form. The ABIM created and validated a standardized physician rating form (see Appendix B) for faculty evaluation of residents,<sup>29-31</sup> and this form was used for evaluations in residency program 1.<sup>29-32</sup> Because all residency programs have not adopted the same evaluation form, we attempted to collate criteria where possible (Table 3). The new forms from the ACGME will require validation similar to the ABIM forms for Professional Peer Evaluation.<sup>30,31</sup>

**TABLE 2. CURRICULUM FOR MEDICAL ETHICS COURSE**

<b>LECTURE NO. AND TOPIC</b>	
1.	Introduction to Medical Ethics
2.	Informed Consent
3.	New Technology—Learning Curve Issues
4.	Advertising
5.	Commercial Relationships—Comanagement
6.	Resource Allocation
7.	Communication Skills—The Doctor-Patient Relationship
8.	Managed Care
9.	Disparities in Health Care—Gender and Race Issues in Medical Care
10.	Profession of Medicine

### **SOCIAL SURVEY**

The social survey, consisting of 48 questions, was developed to assess the residents' activities and opinions about community, society, politics, and religion (Appendix C). We also asked residents for demographic information. The aim of the survey was to address the concern that those responsible for educating physicians have a responsibility to address the ethical concerns of society. The answers are not judged as better or worse, but rather are descriptors of activities. In the sociological analysis, we are looking for associations and correlations between social activities and other variables, such as performance on a test of moral evaluation skills or a peer evaluation. The areas of politics, religion, community, and society were chosen from the works of Rest and associates,<sup>2-5</sup> Putnam,<sup>33</sup> and from the more extensive social survey of the Roper Center for Public Opinion Research (provided by the Roper Center at the University of Connecticut). Questions were found to be invalid after testing when there was little or no variation in the responses.

This survey was designed with the help of Dr Dean Savage of the Department of Sociology at Queens College, Queens, New York, and Dr Johnny Tang (ophthalmology resident at North Shore University Hospital, Manhasset, New York).

### **STATISTICAL ANALYSIS**

The Center for the Study of Ethical Development at the University of Minnesota analyzed results from the DIT-2 tests. Its reports were then converted to statistical analysis system (SAS) files for statistical analysis by the Biostatistics Unit at the North Shore Long Island Jewish Research Institute.<sup>34</sup> The social survey data from Dr Savage was converted from Statistical Program for the Social Sciences (SPSS) files to SAS files. All files were merged prior to analysis. Changes from preintervention to postintervention P scores and N2 scores were computed as the difference between "after" and "before." Changes in scores for preintervention to postintervention were assessed using the paired *t* test. Analysis of variance (ANOVA) was used to compare means across residency programs, and regression analysis was used to evaluate the association between changes in P scores and N2 scores with the number of lectures attended. For the paired *t* tests, a *P* value of <.05 was the threshold for statistical significance. Pearson correlation was computed to assess the association between preintervention P scores and the four social survey variables. Nonparametric approaches (eg, Wilcoxon signed rank test, Kruskal-Wallis test, Spearman correlation) to the above analyses revealed qualitatively similar results; thus, parametric analyses are reported.

### **RESULTS**

#### **DEFINING ISSUES TEST**

The DIT-2 was administered before and after the year-long course in medical ethics. This course included between one and 10 lectures. As shown in Table 4, attendance ranged from zero to 10 residents. Although there was no control group, the eight residents who attended no lectures had DIT-2 scores that did not differ statistically from those residents who attended more lectures. Of the 57 residents in the original pool, only 38 completed the DIT-2 test before and after the course. Two residents (No. 1 and 16) left their programs, the results from five residents (No. 9, 11, 28, 29, 39) were purged, one resident (No. 51) refused consent, and one (No. 54) did not complete either the preintervention or the postintervention DIT-2. In addition, 10 did not complete both the preintervention and the postintervention DIT-2.

**TABLE 3A. ATTENDING EVALUATIONS: AVERAGE SCORES\* BEFORE (PRE) AND AFTER (POST) ETHICS COURSE FOR RESIDENCY PROGRAM NO. 1**

RESIDENT CODE	CATEGORY†											
	1	2	3	4	5	6	7	8	9	10	11	12
pre1053	8	8	5	6	8	8	6.5	8	8	7	6	7
post1053	8	8	6	7	8	7	6	8	7	7	6	6
pre1063	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
post1063	7	7	8	8	8	8	7	8	8	8	8	8

\*Best score = 9, worst score = 1.

†Categories are as follows: 1. Responsiveness to Patients, 2. Respect, 3. Medical Knowledge, 4. Ambulatory Care Skills, 5. Integrity, 6. Psychosocial Aspects of Illness, 7. Management of Multiple Complex Problems, 8. Compassion, 9. Responsibility, 10. Management of Hospitalized Patients, 11. Problem Solving, 12. Overall Clinical Skills.

**TABLE 3B. ATTENDING EVALUATIONS: AVERAGE SCORES\* BEFORE (PRE) AND AFTER (POST) ETHICS COURSE FOR RESIDENCY PROGRAM NO. 2**

RESIDENT CODE	CATEGORY†										
	1	2	3	4	5	6	7	8	9	10	11
pre 2031	1	1	2	2	1	2	2	2	NA	1	1
post 2031	1	1	3	3	1	3	3	4	NA	1	1
pre 2042	1	1	2	2	1	2	2	3	NA	1	1
post 2042	1	1	2	2	1	2	2	2	NA	1	1
pre 2052	1	1	2	2	1	2	2	3	NA	1	1
post 2052	3	2	4	3	2	3	4	4	NA	2	2
pre 2063	1	1	1	1	1	1	1	1	1	1	1
post 2063	1	1	1	1	1	1	1	1	2	1	1
pre 2073	1	1	1	2	1	2	2	2	2	1	1
post 2073	1	1	1	1	1	1	1	2	1	1	1

NA = Not available.

\*Best score = 1, worst score = 5.

†Categories are as follows: 1. Industry and Responsibility, 2. Ethical Behavior, 3. Clinical Judgment and Decision Making, 4. History and Physical Examination, 5. Personality and Compassion, 6. Case Presentation, 7. Case Formulation, 8. Fund of Knowledge and Application, 9. Teaching Abilities, 10. Relationship With Peers and Staff, 11. Ability to Accept Criticism and Advice.

Table 5 compares DIT-2 P scores (and N2 scores) from before and after the ethics course. There was no significant change in P scores ( $P = .058$ ) or N2 scores ( $P = .572$ ). Table 6 shows the relationship between residency program and changes in DIT-2 scores. There were no residency program differences for P scores ( $P = .554$ ) or N2 scores ( $P = .240$ ).

No statistical relationship was found between the number of lectures attended and performance differences in DIT-2 scores before the course and after the course (ANOVA: P score,  $P = .304$ ; N2 score,  $P = .415$ ) (data not shown).

Table 7 compares the DIT-2 results of this study with the results of research with other groups. Of note, the mean DIT-2 score for the ophthalmology residents was 50.5, placing them in a score range with other professionals, such as lawyers, dentists, and nurses.

Table 8 shows the analysis of DIT-2 scores for gender. A comparison of DIT-2 P scores before and after ethics intervention failed to reveal any statistical difference between males and females ( $P = .187$  and  $.179$ , respectively). Similarly, there were no significant differences noted for N2 scores (males,  $P = .368$ , females  $P = .989$ ). There was no difference in P scores between males and females before the ethics intervention; the  $P$  value for the difference was not significant. Gender comparisons of postintervention P scores, N2

scores, and differences before and after ethics intervention were also not statistically significant (data not shown).

### CURRICULUM APPRAISAL BY RESIDENTS

The residents returned 95 completed evaluations. There were four questions and a request for comment. The first question asked was, How you would rate this lecture? The rating scale was as follows: (1) poor, (2) fair, (3) satisfactory, (4) very good, and (5) excellent. The average score for all lectures was 4.0.

Question 2 was, Did the lecture make you aware of new issues? Answer yes or no. Of the 36 first-year residents that responded, 35 responded yes and one had no response. Of the 35 second-year residents who responded, 33 said yes and two responded no. Of the 27 third-year residents who responded, 26 said yes and one did not respond.

**TABLE 3C. ATTENDING EVALUATIONS: AVERAGE SCORES\* BEFORE (PRE) AND AFTER (POST) ETHICS COURSE FOR RESIDENCY PROGRAM NO. 3**

RESIDENT CODE	CATEGORY†											
	1	2	3	4	5	6	7	8	9	10	11	12
pre3052	8.3	8.4	8.4	8.4	8.4	8.4	8.3	8.4	8.4	8.3	8.2	8.4
post3052	8	8	8	8	8	8	8	8	7	8	8	7.7
pre3062	6.5	7.5	6.8	6.5	8.3	7.3	7.2	7.5	7.8	7.7	7.2	7.2
post3062	7	6	4.3	5.8	6	6	5.3	6	5.3	6	5.3	5.7
pre3072	7.7	7.2	6.2	6.4	7.2	7	6.3	7.5	7.4	6.3	6.3	6.5
post3072	7	6.3	6.3	6.8	6.8	7.1	7.1	7	6.8	6	6.3	6.3
pre3082	8	8.5	7.4	8.2	8.4	8.4	7.3	8.6	8.2	8	8	8
post3082	7	7.7	7	7.6	7.6	7.6	7	7.6	7.6	7	7.8	7.6
pre3093	8	8.4	8	8.4	8.8	8.8	8.2	8.8	8.4	8.8	8.2	8.2
post3093	8	8	8	8.3	8	8	8	8.3	8.3	7.88	8	8.3
pre3103	6.5	6.2	6.5	6.8	8	6.4	6.8	5.5	7.8	7.3	7.2	6.8
post3103	2	3	5.6	5.3	8	3.4	6.3	4	6.8	6	6	5.3
pre3113	8.5	7.4	6	6.8	8	6.7	6.2	6.7	7.6	6.3	7.8	6.8
post3113	6	6.3	5.3	6	7	5.7	6	5.3	7.3	6	6	6
pre3123	9	8.1	7.1	7.2	8.4	7.6	5.8	7.8	8	7.3	7.6	7.8
post3123	4	6.3	5.3	6.7	6.3	6.3	6.7	6.8	6.7	6	5.7	6

\*Best score = 9, worst score = 1.

†Categories are as follows: 1. Responsiveness to Patients, 2. Respect, 3. Medical Knowledge, 4. Ambulatory Care Skills, 5. Integrity, 6. Psychosocial Aspects of Illness, 7. Management of Multiple Complex Problems, 8. Compassion, 9. Responsibility, 10. Management of Hospitalized Patients, 11. Problem Solving, 12. Overall Clinical Skills

Question 3 was, Did you think that the material presented will help you? Answer yes or no. Thirty-five of the 36 first-year residents responded yes and one did not answer. Of the 32 second-year residents, 29 responded yes and three responded no. Of the 27 third-year residents, 25 responded yes, one no, and one gave no answer.

Question 4 was, How would you improve the lecture? Question 5 asked, Was the subject presented fairly? Answer yes or no. For the first-year residents, 35 answered yes and one had no answer. Of the 32 second-year residents who answered, 31 said yes and one said no. Twenty-six of the 27 third-year residents responded yes and one no. The comments (Question 4) indicated the need for more cases and the need for more discussion time. Several complained that the lectures were too early in the morning (7 AM), and one wanted to waive the reading requirement. Several residents commented that in certain lectures the instructor was too opinionated, and others said that the course was too long. They suggested a 1-hour lecture. Residents also suggested the following topics for the curriculum: politics and ethics, business/economics of medicine, the place of medicine in society, profession versus trade, informed consent and the patient's perspective, language of ethics, doctors' relationship with society, social good, and health care policy.

### FACULTY EVALUATION OF PROFESSIONALISM

Although the rating system varied, being either a 1 to 5 Likert point-scale (low to high, worst to best) or a 1 to 9 Likert point-scale, it appears that there was uniformity in scoring (see Table 3). A Likert scale "...states the issue or opinion and obtains the respondents' degree of agreement or disagreement. This scale provides answers in the form of coded data that are comparable and can readily be manipulated."<sup>35</sup> Of the 20 residents who were given preintervention and postintervention attending evaluations, there were no categories that showed significant changes. This is a frequent problem and may require more education of the evaluators (faculty).<sup>36</sup> Four of the five residencies returned their faculties' evaluations for analysis.

**SOCIAL SURVEY**

The results of the social survey (Table 9) indicate a negative correlation between the P score and opinions that relate to community ( $r = -.046, P = .806$ ), politics ( $r = -.072, P = .691$ ), and religion ( $r = -.381, P = .028$ ). The association of P scores with religion is statistically significant. There was a positive association with “society” ( $r = +.132, P = .465$ ), but it did not achieve statistical significance.

**TABLE 3D. ATTENDING EVALUATIONS: AVERAGE SCORES\* BEFORE (PRE) AND AFTER (POST) ETHICS COURSE FOR RESIDENCY PROGRAM NO.**

RESIDENT CODE	CATEGORY†						
	1	2	3	4	5	6	7
pre 4013	8	8	8	8	8	8	8
post 4013	7	7	7	7	7	7	7
pre 4023	7	8	8	8	8	9	8
post 4023	5.5	5.5	5.5	6	6	7.5	8.5
pre 4033	6	6.5	7	6	6.5	6	6
post 4033	NA	6.5	NA	7.5	7.5	NA	NA
pre 4043	6	6	6	6	6	6	6
post 4043	NA	8	NA	8	8	NA	NA
pre 4052	6	6	7	6	6	7	7
post 4052	NA	8	NA	NA	NA	8.5	7
post 4062	NA	6	NA	6	6	NA	NA
pre 4072	6	6	6	5	6	6	6
post 4072	6	7	7	7	7	6	5
pre 4082	NA	NA	NA	NA	NA	NA	NA
post 4082	8	7.5	8	8	8	8	8
pre 4091	NA	5	NA	5	5	NA	NA
post 4091	NA	6	NA	6	6	NA	NA
pre 4101	7	7	7	6.5	6.5	8	7.5
post 4101	NA	7.5	NA	7.5	7.5	NA	NA
pre 4111	NA	7	NA	6	6	NA	NA
post 4111	NA	8	NA	7.5	7.5	NA	NA
pre 4121	NA	7.5	NA	7	7	NA	NA

NA = Not available

\*Best score = 9, worst score = 1.

†Categories (2 rating systems used). System A: 1. Medical Knowledge, 2. Medical Skills, 3. Medical Judgment, 4. Surgical Judgment, 5. Surgical Skills, 6. Personal Qualities Skills, 7. Attitudinal Qualities. System B: 1. Clinical Skills, 2. Medical Knowledge, 3. Surgical Skills, 4. Professionalism, 5. Practice-Based Learning, 6. Interpersonal and Communication, 7. System-Based Practice

Our social survey instrument was limited. Of the 48 questions, only six of the 15 social participation questions were considered valid for statistical analysis. Three of three were valid for religion, one of nine for politics, and two of nine for community. The three questions that relate to religion were the following: No. 34, I believe in God. Agree or disagree; No. 35, Religion is important. Agree or disagree; and No. 36, Number of times religious events attended in past 12 months (scored on a scale of 1 to 7, 1 = none, 7 = >52). Twelve questions concerned demographics, age, and gender. Future investigations should consider using more sophisticated and costly techniques.<sup>37,38</sup>

Table 10 shows that no statistically significant correlation was found between gender and the social survey ( $P = .204$ ). An analysis that clustered questions into the specific areas of community, society, politics, and religion also failed to reveal significant correlations.

TABLE 4. SUMMARY OF DIT-2 TEST SCORES

RESIDENT NO.	RESIDENT CODE	NO. OF LECTURES ATTENDED	PRECOURSE P SCORE	PRECOURSE N2 SCORE	POSTCOURSE P SCORE	POSTCOURSE N2 SCORE	PRE+POST DIT-2	ATT EVAL PRE ETHICS COURSE	ATT EVAL POST ETHICS COURSE
1	1021	6	56	61.99	46	51.8	1	NA	NA
2	1032	9	74	68.03	64	60.1	2	Y	NA
3	1042	10	58	63.56	38	46.9	3	Y	NA
4	1053	6	68	63.9	42	52.81	4	Y	Y
5	1063	8	NA	NA	52	59.68	NA	Y	Y
6	1013	5	NA	NA	36	28.23	NA	NA	NA
7	2011	8	70	70.49	50	51.24	5	NA	NA
8	2031	8	40	44.72	56	56.44	6	Y	Y
9	2052	10	66	56.97	56	52.25	7	Y	Y
10	2063	5	46	44.58	62	64.06	8	Y	Y
11	2073	1	28	28.22	32	25.91	9	Y	Y
12	3021	2	56	59.82	38	35.38	10	NA	Y
13	3031	2	60	61.29	68	67.26	11	NA	Y
14	3041	1	74	72.15	66	68.47	12	NA	Y
15	3052	3	46	46.56	42	49.3	13	Y	Y
16	3062	0	58	51.47	NA	NA	NA	Y	Y
17	3072	3	54	60.38	59	58.77	14	Y	Y
18	3082	3	76	71.43	66	64.89	15	Y	Y
19	3093	1	56	51.69	78	71.91	16	Y	Y
20	3103	3	37	24.95	18	18.51	17	Y	Y
21	3113	3	NA	NA	36	38.17	NA	Y	Y
22	3123	2	10	7.65	33	28.37	18	Y	Y
23	4033	1	54	52.17	40	39.63	19	Y	Y
24	4043	1	38	25.89	52	99.9	20	Y	Y
25	4052	1	42	47.08	32	37.68	21	Y	NA
26	4062	0	22	28.14	30	27.52	22	NA	Y
27	4072	0	26	24.88	42	33	23	Y	Y
28	4082	1	52	57.61	16	23.99	24	NA	Y
29	4091	1	52	53.6	56	57.07	25	Y	Y
30	4101	1	60	60.39	50	52.03	26	Y	Y

**TABLE 4(CONTINUED). SUMMARY OF DIT-2 TEST SCORES**

<b>RESIDENT NO.</b>	<b>RESIDENT CODE</b>	<b>NO. OF LECTURES ATTENDED</b>	<b>PRECOURSE P SCORE</b>	<b>PRECOURSE N2 SCORE</b>	<b>POSTCOURSE P SCORE</b>	<b>POSTCOURSE N2 SCORE</b>	<b>PRE+POST DIT-2</b>	<b>ATT EVAL PRE ETHICS COURSE</b>	<b>ATT EVAL POST ETHICS COURSE</b>
31	4111	1	24	22	36	38.66	27	Y	Y
32	5012	0	48	57.28	NA	NA	NA	NA	NA
33	5021	1	48	56.94	28	35.3	28	NA	NA
34	5033	1	48	49.06	38	41.95	29	NA	NA
35	5042	1	NA	NA	66	66.96	NA	NA	NA
36	5051	1	62	62.44	NA	NA	NA	NA	NA
37	5061	1	64	64.71	58	58.34	30	NA	NA
38	5072	0	42	34.93	56	48.49	31	NA	NA
39	5081	1	70	69.56	40	50.38	32	NA	NA
40	5091	1	62	50.79	62	53.53	33	NA	NA
41	5103	1	62	51.82	34	38.8	34	NA	NA
42	5112	1	28	37.07	24	33.63	35	NA	NA
43	5133	1	58	51.59	NA	NA	NA	NA	NA
44	5143	1	48	44.65	NA	NA	NA	NA	NA
45	5162	0	58	55.86	NA	NA	NA	NA	NA
46	5172	0	52	58.47	46	51.37	36	NA	NA
47	5183	0	64	54.49	56	51.64	37	NA	NA
48	5191	1	38	42.05	32	40.55	38	NA	NA

NA = not available; Y = Yes.

**TABLE 5. DIT-2/N2 RESULTS BEFORE (PRE) AND AFTER (POST) ETHICS INTERVENTION**

<b>VARIABLE</b>	<b>DIT-2 PRE P SCORE VS POST P SCORE</b>	<b>PRE N2 SCORE VS POST N2 SCORE</b>
Mean change	-4.76	-1.64
P value	.058	.572
N	38	38

DIT-2 = Defining Issues Test.

**TABLE 6. CHANGES IN DIT-2 SCORE BY RESIDENCY PROGRAM**

RESIDENCY	NO. OF RESIDENT	CHANGE IN P SCORE* (MEAN)	CHANGE IN N2 SCORE* (MEAN)
1	4	-16.50	-11.47
2	5	-1.20	+0.58
3	9	-0.11	+0.77
4	9	-1.78	+4.19
5	11	-9.45	-5.99
<i>P</i> value		.554	.240

DIT-2 = Defining Issues Test.

\*Calculated by analysis of variance (ANOVA).

**TABLE 7. COMPARISONS OF DIT-2 P SCORES FROM VARIOUS STUDIES**

GROUP	P SCORE
Moral philosophers and political science students	65.2
Liberal protestant seminarians	59.8
Law students	52.2
Medical students (Rest)	50.2
Medical students (Self & Olivarez)*	44.57 (year 1) 57.33 (year 2) 60.20 (year 3) 59.43 (year 4)
Practicing physicians	49.2
Residents (IM, Fam Med/Surg) and Attendings (J George)	44.9 (PGy 1) 43.6 (PGy 2) 47.4 (PGy 3) 42.5 (PGy 4) 46.5 (PGy 5) 50.98 (Attendings)
Dental students	47.6
Dentists (students and practitioners; Bebeau)†	Precourse: 39.38 Postcourse: 49.96
Staff nurses	46.3
Graduate students in business	42.8
College students in general	42.3
Navy enlisted men	41.6
Adults in general	40.0
Adults (Rest)	33.1 (initial) 39.6 (year 1) 47.0 (year 10)

**TABLE 7 (CONTINUED). COMPARISONS OF DIT-2 P SCORES FROM VARIOUS STUDIES**

<b>GROUP</b>	<b>P SCORE</b>
Senior high school students	31.8
Prison inmates	23.5
Junior high school students	21.9
Institutionalized delinquents	18.9
Residents	
Orthopedic residents (Baldwin & Bunch)	43.4
Pediatric residents US	32.6
Pediatric residents foreign	19.7
Ophthalmology residents (Packer)	50.5
Ophthalmology residents by gender (Packer)	M = 48.38 F = 55.75
<b>Education and gender (Rest)</b>	
Junior high	M = 19.1 F = 19.8
Senior high	M = 28.7 F = 30.4
College	M = 44.1 F = 45.9
Graduates	M = 61.0 F = 63.0
<b>Veterinary students (Self &amp; Olivarez)</b>	
Precourse	M = 39.4 F = 43.7
Postcourse	M = 36.7 F = 46.1

DIT-2 = Defining Issues Test; F = female; M = male.

\*Ethics course given first part of first year.

†Students: 43 hours over 4 years; small-group instruction. Practitioners: 20 to 25 hours over several months.

**TABLE 8. DIT-2 AND GENDER**

<b>GENDER</b>	<b>NO.</b>	<b>CHANGE IN P SCORE</b>	<b>P VALUE</b>	<b>CHANGE IN N2 SCORE</b>	<b>P VALUE</b>
Males	26	-4.00	.187	-2.35	.368
Females	12	-6.42	.179	-.10	.989

DIT-2 = Defining Issues Test.

**TABLE 9. CORRELATION BETWEEN P SCORE AND SOCIAL SURVEY DATA\***

VARIABLE	OPINIONS RELATING TO			
	COMMUNITY	SOCIETY	POLITICS	RELIGION
Pre P score	-.046	.132	-.072	-.381
No. of responses	33	33	33	33
P value	.806	.465	.691	.028

\*See Appendix C.

**TABLE 10. GENDER AND SOCIAL SURVEY\***

VARIABLE	NO. OF RESPONSES	P SCORE	MEAN SCORE RELATING TO			
			COMMUNITY	SOCIETY	POLITICS	RELIGION
Male	24	50.41	2.21	5.34	0.78	1.57
Female	9	57.8	1.91	5.43	0.63	1.63
Difference		0.204	0.399	0.856	0.376	0.876
P value						

\*See Appendix C.

## DISCUSSION

### MORAL SKILLS ASSESSMENT TECHNIQUES

The Standard Issue Moral Judgment Interview and Scoring System that was developed by Kohlberg and his colleagues represents one of the earliest attempts to standardize testing for moral skills. Their assumptions were that being able to make moral judgments includes the ability to argue rationally.<sup>11(p1)</sup> They also sought to show moral development as a pattern of thought (structure) and that it not be specific to any one moral belief.<sup>11(pp2,4)</sup>

The major difficulty with Kohlberg's test was the amount of time involved; it required 1 to 1.5 hours to administer and about the same time to score for each evaluation. In addition, the scoring was based on interview judgments and was therefore problematic. The score for each answer was based on a conceptual analysis (discussed in the "Defining Issues Test" section under "Methods") of the moral dilemma.<sup>11(p40)</sup>

J. Habermas and others have criticized that conceptual analysis. Lind summarized Habermas's criticism as follows:

1. He questions the status of postconventional stages and whether they exist.
2. He "doubts the adequacy of a normative reference point in the face of the empirical regression phenomenon."<sup>39</sup> The finding of a regression in moral skills in postadolescent life may weaken the choice of norms and values that Kohlberg selected to try to measure in his moral evaluation test.<sup>39</sup>
3. He doubts "the problem of fitting relativists and value skeptics into the stage model."<sup>39</sup> This relates to Kohlberg's difficulty in fitting certain groups of individuals into his cognitive scheme of moral development that is the basis of his questions for his moral evaluation test. Hedonists and those skeptics who deny the importance of values or theories in making a moral judgment will not neatly or properly be tested using the Kohlberg methods.
4. He doubts "the necessity of including psychodynamic aspects of judgment formation within the structural theory of moral judgment."<sup>39</sup>

Both Habermas and Hartmann have extended and possibly redefined the work of Kohlberg,<sup>39</sup> which has been the basis for Lind to design an entirely new moral skills assessment called the Moral Judgment Test.<sup>40</sup>

Rest and colleagues<sup>12(pp32,33)</sup> have also summarized their criticisms of the Kohlberg approach to moral evaluation. They divide moral psychology to include a four-component process that evaluates moral behavior<sup>12(p10)</sup> and reduces Kohlberg's six stages into three basic schema.<sup>25(p36),12(p12)</sup> Rest and colleagues also address the validity and reliability of the DIT.<sup>27</sup> They examined the following seven areas for validation:

1. Differentiation of various age or education groups: Studies show that 30% to 50% of the variance of DIT scores is attributable to

level of education.

2. Longitudinal upward trends: A 10-year longitudinal study of men and women, college-attendees, and noncollege subjects from diverse walks of life shows gains. A review of a dozen studies of freshman to senior college students (>500) demonstrates that the gains in the DIT scores are one of the most dramatic effects of college.

3. Sensitivity to moral educational intervention: The DIT is sensitive to moral educational interventions. One review of over 50 intervention studies reports only moderate gains (0.41 effect size) for dilemma discussion interventions, whereas for comparison groups there was only little gain (0.09 effect size). Effect size is a form of meta-analysis that allows for a measure of correlation between an independent variable (DIT-2) and a dependent variable (moral education effort). The lack of differences between residencies and P score or N2 score may be due to the small sample size, large variations in scores within programs, or the lack of adequate discussion of dilemmas.

4. Developmental hierarchy: The DIT is significantly related to cognitive capacity measures of moral comprehension ( $r = 0.60s$ ), recall, and reconstruction of postconventional moral arguments, Kohlberg's interview measure, and (to a lesser degree) to other cognitive development measures.

5. Links to behavior: The DIT is significantly linked to many "prosocial" behaviors and to desired attributes of professional decision making. One review reports that 37 out of 47 correlations were statistically significant.

6. Links to political attitudes and choice: The DIT is significantly linked to political attitudes and political choices. In a review of several dozen correlates of political attitude, the DIT typically correlates in the range,  $r = 0.40$  to  $0.65$ . When coupled with measures of cultural ideology, the combination predicts up to two thirds of the variance of controversial public policy issues (such as abortion, religion in public schools, women's roles, rights of the accused, rights of homosexuals, free speech issues).

7. Reliability: Reliability is adequate. Cronbach  $\alpha$  is in the upper .70s to low .80s. Test-retest reliability is about the same. Furthermore, the DIT shows discriminant validity from verbal ability and general intelligence and from conservative or liberal political attitudes, that is, the information in a DIT score predicts to the seven validity criteria above and beyond that accounted for by verbal ability or political attitude. The DIT is equally valid for males and females. No other variable or other construct predicts the pattern of results on the seven validity criteria as well as moral judgment.<sup>27</sup>

It is important to understand the DIT in its broader context of morality in society and to see it as a tool that has its limits. In addition, there is a need for educational materials that are specific to each profession.<sup>2(p221)</sup> The current investigation of education in ethics for residents is an extension of similar efforts taking place in the fields of medicine, veterinary medicine, dentistry, and nursing, and should be considered preliminary. Other fields of health care have similarly used the DIT-2 to measure ability to discern moral dilemmas. Early works of T. J. Sheehan and D. J. Self and colleagues demonstrated a link between moral evaluation skills and assessment of clinical performance, and later studies confirmed their findings.<sup>41</sup> However, several investigators have demonstrated a paradoxical decrease in moral reasoning skill that they attribute to a possible inhibiting effect of medical education.<sup>20(pp151,154)</sup> This would be consistent with our finding (Table 5) that shows a decrease in mean P score and N2 scores when comparing scores before and after the ethics intervention, although this was not statistically significant. Several investigators have noted the variability in moral education efforts.<sup>2,3(p14)</sup> Additional variables have been studied, such as gender and educational background. In a compilation of 56 research papers, it was found that the level of education had a more significant positive correlation with performance on the DIT than did gender.<sup>27(pp65,66)</sup> Moral philosophy and political science graduate students did the best, with P scores of 65.2, whereas institutionalized delinquents did the worst, with P scores of 18.9. Medical students had P scores that averaged 50.2 (Table 7).<sup>20(p154)</sup> Gender differences existed at all levels of education, and women did better at all levels (Table 7).

The statistical analyses included both parametric and nonparametric analyses because there was no assurance a priori that the data would conform to a Gaussian distribution. The data were insufficient to assume a normal distribution, and the use of nonparametric analysis allowed a broad statistical view. Nonparametric statistics were favored because they are more conservative with the small sample size. The loss of power is recognized as the possibility of missing an effect when an effect does exist (type 2 error).

The studies listed in Table 7 that were used to compare DIT-2 P scores may not warrant comparison, because they used different methods to teach ethics. However, several trends are worth noting. These studies seem to validate that ethics courses increase the ability to answer questions that relate to ethical dilemmas.<sup>27(pp74,75)</sup> The data from Fleisher and associates<sup>42</sup> indicate that there is no difference in DIT scores when comparing first-year medical students to fourth-year medical students. The influence of gender and age also appear to be consistent. Therefore, statistical techniques such as multivariate analysis are needed in studies of larger numbers of subjects with a standardized ethics education curriculum.<sup>43-62</sup>

## **PLANNING AN ETHICS CURRICULUM**

E. D. Pellegrino outlined the objectives of an ethics curriculum as follows: "(1) to teach the skills of ethical analysis essential to making medical moral choices, (2) to raise sensitivities to ethical issues in everyday clinical practice, (3) to enhance critical reflection on one's personal values and obligations as a physician, and (4) to identify the substantive ethical assumptions underlying clinical decisions."<sup>63</sup> The ideal components of an ethics curriculum include an orientation program, communications skills training program, morning report, challenging-case conference, home visits, transition workshops, resident support groups, resident retreats, mentor program, praise/concern cards, learner-centered methods, faculty development, and relationship-centered administration.<sup>55,56,64</sup> The Herculean task will be to implement a uniform program for all residencies and select materials for a standardized curriculum. There is a plethora of topics from which to choose in planning an ethics curriculum.<sup>53-57,60-62</sup> A survey of ethics courses offered in ophthalmology residencies was conducted in the fall of 2002 under the aegis of the Association of University Professors. It is apparent

from the questions and responses outlined in Table 11 that there is a wide range in the content and amount of time given to ethics in the different curricula.

There are also many methods used to structure a program and to teach ethics. It has been noted that “small-group discussions generate cognitive dissonance when people functioning at different levels of moral reasoning are confronted with other levels. Students receive stimulation from classmates and faculty when different positions are held. The effect on moral reasoning skills appears to increase in proportion to the amount of small-group discussion, once the threshold of 20 hours has been reached.”<sup>23(p522)</sup> The program can be structured to include one or more instructors. M. Bebeau noted that “involvement of many faculty and practitioners ensures that the program isn’t the isolated theme of one instructor.”<sup>24(p122)</sup> The efforts that Bebeau and colleagues have made in teaching ethics to dentists have been extraordinary and may serve as a possible template.<sup>24</sup>

The major difficulties in creating an ethics education program may be in funding, gathering an appropriate faculty, and allocating time in the curriculum.<sup>20(p148),48,56,61,65-74</sup> As Self points out, “the unfortunate consequence of the overcrowded curriculum is that such material (ethics) is usually taught in a structured lecture format and at a single, often inappropriate, point in the curriculum.”<sup>20(p148)</sup> A possible solution might be to offer an ethics course online, which many medical schools currently do (see Appendix D). The American Academy of Ophthalmology offers three online ethics courses to meet recertification and relicensure needs. Course 1 covers commercial relationships and advertising. Course 2 covers informed consent, doctor-patient relationship, and delegation of services, and course 3 covers research, new technology, and collegiality. Most of these topics were covered in the curriculum (see Table 2).

The Physician and Society course at the Johns Hopkins School of Medicine exemplifies the enormous commitment of time (the course is given over 4 years), money, and faculty development in creating a program. The Johns Hopkins work also concluded “no satisfactory outcome study exists.”<sup>53</sup> D. J. Doukas points out that the “relative rarity in the peer-reviewed literature would lead one to suspect there is a twofold problem: lack of a common program and there is no guidebook to follow.”<sup>26(p152)</sup> In addition, changes in health care, such as commercialization, increased regulations, and managed care, will test the philosophical basis of the profession of medicine.<sup>75,76</sup>

It is possible that the methods used to structure and teach the ethics program that is the subject of this thesis may not have been sufficient. The author’s 15 years of teaching medical ethics may not have been adequate to overcome the need for a well-developed, more mature curriculum and for more standardized teaching materials. It is possible that there was not adequate time for discussion after each lecture and that a better-trained teacher might have been able to motivate more interactions among students. Also, the small number of subjects, the limited number of lectures, and having only one instructor may also have been negative factors. The predominant view, although contested by a few, is that ethics education is of value.<sup>27(p97),77</sup> It is now time to determine how to demonstrate that ethics has been taught and how to describe the clinical results. Once an acceptable program is in place, it will be the associations between teaching ethics and subsequent clinical performance of the residents that will require further research. The best methods for teaching and for measuring results are unknown. It is likely that methods of teaching ethics will vary from institution to institution and from teacher to teacher.

The ACGME suggests different methods for evaluation of each core competency.<sup>1</sup> The 360° global rating or objective structured clinical examination (OSCE), or both, were felt to be the most desirable methods for the evaluation of the competencies that relate to professionalism. These techniques may prove to be preferred with future research. The DIT-2 test was used for this study for the reasons discussed above. However, the DIT-2 uses the multiple-choice questions technique, and the ACGME did not feel that that technique would be the most desirable method for assessment of professionalism.<sup>1</sup>

## ASSESSMENT OF PROFESSIONALISM

According to the ABIM, the Core Competency for Interpersonal and Communication Skills defines professionalism as being respectful and altruistic; having an ethically sound practice; and being sensitive to culture, age, gender, and disability issues.<sup>1</sup> It includes creating therapeutic relationships with patients and developing listening skills that are appropriate in an ethics curriculum.<sup>1</sup>

The purpose of teaching ethics is to improve clinical behavior, and the research efforts of Self and colleagues,<sup>17-23</sup> Baldwin and Bunch,<sup>14</sup> Rowley and associates,<sup>15,16</sup> and Bebeau<sup>24</sup> demonstrated the positive effects of ethics education. The ABIM Professional Peer Evaluation (Appendix B) may be an effective tool to measure that improvement.<sup>29-32</sup>

Many methods of evaluating professionalism have been proposed. The preferred methods for ethics evaluation include the objective structured clinical examination (OSCE), patient surveys, 360° global rating, stimulation and models, chart-simulated recall oral examination, checklists, or written examinations. The DIT was chosen because it is easy to administer and because it uses standardized scoring techniques. The fact that it has been psychometrically evaluated also makes it more likely that DIT will be accepted into the scientific community.<sup>27(pp92-96)</sup>

The OSCE would be costly and remains unproven. The ABIM Professional Peer Evaluation (Appendix B) could serve as part of a 360° global review method, and perhaps this and the DIT-2 could serve to assess different teaching methods and curricula.<sup>30,31,27(pp74,75),42-62</sup>

Hemmer and associates<sup>54</sup> compared three methods of assessing medical student professionalism and found that “of the three methods studied, the face-to-face, formal evaluation sessions significantly improved the detection of unprofessional behavior.” Larkin reviewed the efforts in emergency medicine and concludes that there is “lack of time for implementation into an already overfilled curriculum.”<sup>78</sup> His suggestions for assessing professionalism are similar to the ABIM methods.

**TABLE 11. RESULTS OF SURVEY OF OPHTHALMOLOGY RESIDENCIES, 2002/2003**

<p><b>No. of ethics sessions/year</b>                  None: 3                  1 to 5: 37                  5 to 10: 13                  &gt;10: 10</p> <p><b>Hours/session</b>                  &lt;1 hr: 4                  1 hr: 40                  2 hr: 8                  3 hr: 5                  4 hr: 1</p> <p><b>Total hours/year</b>                  None: 2                  1 to 5 hr: 28                  6 to 10 hr: 20                  10 to 20 hr: 8                  &gt;20 hr: 0</p> <p><b>Attendance mandatory?</b>                  Yes: 55                  No: 1</p> <p><b>Is ethics in curriculum?</b>                  Yes: 39                  No: 14</p> <p><b>Topics</b>                  Informed consent: 28                  MD-patient relationship: 12                  Collegiality: 11                  Impaired MD: 11                  Code of ethics: 11                  Industry: 10                  Advertising: 9                  Comanagement: 9                  Patient rights: 8                  Communication skills: 7                  Conflicts of interest: 7                  Research: 7                  Professionalism: 4                  New technology: 3                  Charity work: 2                  Cases: 1                  Ethnic diversity: 1                  Euthanasia: 1</p> <p><b>Materials</b>                  The Ethical Primer: 38                  Handouts: 9                  Cases: 3                  AAO Web site: 1                  Beauchamp/Childress: 1                  OMIC: 1</p>	<p>(...continued)</p> <p><b>Source of speakers</b>                  Department: 46                  Medical school: 33                  AAO: 5                  Other: 5</p> <p><b>Person responsible for ethics</b>                  Program director: 26                  Other: 27</p> <p><b>Evaluation method</b>                  Nothing specific: 12                  Resident evaluates: 10                  Informal: 9                  Course evaluation: 8                  Attending evaluation: 7                  Presenter evaluation: 3                  Test residents: 3                  Discussion after talk: 1                  Lack of tomatoes: 1</p> <p><b>Suggestions for improvements</b>                  Standard curriculum: 19                  Videos: 6                  Evaluation method: 5                  More lectures: 4                  Speaker list: 4                  Cases: 3                  Interactive Web cases: 3                  Brochures: 2</p> <p><b>Role of AUPO or AAO</b>                  Provide curriculum: 11                  Evaluation tools: 5                  More programs: 4                  Continued Update Primer: 3</p> <p><b>Comments</b>                  Core competency issue, internet-based materials needed, residents not interested, AUPO enforce RRC ethics requirements, symposia needed</p>
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(continued...)

AAO = American Academy of Ophthalmology; AUPO = Association of University Professors of Ophthalmology; RRC = Residency Review Committee.

## SOCIAL SURVEY

The use of a social survey to make any kind of assessment of residents is a controversial subject. The issue here is whether or not it matters if the selection of candidates for medical school or for residency training is based on survey answers to questions about community, social issues, politics, or religion.<sup>9,11(p40),20(p151),52,58,73</sup> Our results do not agree with the work of others who found a correlation between performance on the DIT and answers to questions on a survey about religion.<sup>79(pp117-124)</sup> Sulmasy and associates<sup>80</sup> found a positive correlation between knowledge of medical ethics and a Jewish religious identity. The literature indicates controversy in the relationship between religious beliefs and the dilemmas presented on the DIT. A summary of the conclusions that the Rest group reached on the complex relationship that exists between religious teachings and questions about community is found in chapter 5 of their book *Postconventional Moral Thinking*.<sup>79</sup> They cite three reviews and 17 studies, with one of the conclusions being that performance on the DIT-2 differed depending on religious beliefs. For example, a significant difference was found between those with orthodox religious beliefs and those with progressive religious beliefs. The interaction between religious views and political views and DIT-2 performance was also discussed, and it was concluded that a very large study would be required to separate these two variables from each other and from other variables. Thus, a simplistic answer might be that the group evaluated here had more progressive religious views. Because the details required to assess religious views were not obtained, it was felt that further comment on the significance of a positive or negative association between the DIT-2 scores and religious views was inappropriate.

The relationship between the dilemmas presented on the DIT and community beliefs may also be complex and controversial, and therefore it is not a surprise that answers to the community questions on the survey had a negative correlation with results on the DIT.<sup>79</sup> Much of Kohlberg's staging was based on his understanding of social cooperation.<sup>79</sup> The importance of interaction with the community is also discussed as an essential part of an ethics curriculum.<sup>48,62,66,81</sup> Should we be concerned with the social behavior of our graduates? Do Chairs and Program Directors want to be responsible for the social behavior of their residents? The importance of participation in community activities and in other social and political activities has been shown to affect social well-being<sup>82</sup> and economic prosperity.<sup>83</sup> New social relationships have emerged in medicine, such as "managed care" and increased commercialization of research and education that have introduced new conflicts of interest for physicians. We must learn to remain loyal to our professional covenants and learn to work ethically within these new commercial relationships. Teaching ethics should result in practical knowledge that helps resolve new moral dilemmas. Not addressing this issue seems irresponsible, and because our license to practice the art of medicine is given to us by society, it might be prudent to pay attention to this difficult issue.

Society has seen recent cases of unethical behavior in other fields, such as politics,<sup>84</sup> religion,<sup>85</sup> and business.<sup>86</sup> The decline in social trust<sup>87</sup> within medicine<sup>88</sup> and in the general society<sup>83</sup> needs to be a concern. Medicine has professed to be more than a craft and has as its basis a trusting relationship.<sup>83,87-91</sup> Without that trust, the field of medicine could easily devolve into a trade and be less valued by society.<sup>92</sup> The purpose of that trust is critical to understanding the importance of ethics education.<sup>82,83,88-94</sup> The success of any attempt at ethics education will be measured through our relationship with our patients and with society.<sup>33,82,83,88-96</sup> Several programs involve medical students and/or residents in community activities as part of a professionalism and/or ethics course.<sup>48,49,62,97</sup> The decline in participation in community activities has been well documented by Putnam,<sup>33</sup> and although he expresses the hope that this may be only temporary, it seems responsible to educate physicians about the importance of social interactions, be they political, religious, social, or community. The probable link between trust building and these activities creates opportunities for medicine.

## GENERATIONAL CONCERNS

A critical issue related to teaching ethics is the role of generational differences and the impact that they may have on any effort to change clinical behavior.<sup>98</sup> It is implicit that generations will differ, but there is no implication that one generation is any more ethical than another. The important point is to understand any differences in order to be able to educate effectively. In a representative residency, the faculty consists of baby boomers and/or "veterans," whereas the residents are Gen-Xers. The boomers "may not have trusted anyone over 30, but the Xers don't trust anyone in the Fortune 500."<sup>98(p104)</sup> There are differences between generations in the understanding of community, of group, and of a profession that may be very important to the delivery of healthcare. A Gen-Xer uses the television series *Friends* as a model for being a team member, which is "a group of friends hanging together working and playing as a unit. It's a 'team' without the explicit 'boomer' rules or the 'veteran' sense of duty."<sup>98(p115)</sup> Also, the sense of loyalty in a Gen-Xer is very different from other generations. Gen-Xers expect to move around more, which raises the question of what effect a generation of Gen-Xer physicians will have on the doctor-patient relationship. The recently noted high turnover of program directors (Gen-Xers) in ophthalmology programs may be a reflection of this. This may be acceptable, because patients will also be more mobile. An ongoing survey compared responses of college students from 1967 through 2003 as to the question of whether developing a meaningful philosophy of life or being very well-off financially was essential or very important objectives. In 1967, 85% thought that developing a meaningful philosophy of life was essential or very important. In 2003, this fell to 39%. In 1967, 41% thought that being very well-off financially was essential or very important, by 2003 this figure rose to 75%.<sup>99</sup> The important point is that if there are values that serve as the basis of our profession, then we must develop ways of communicating them to the next generation.

## SUMMARY

This study presents new data on teaching ethics in ophthalmology that is consistent with analogous studies in other areas of medical education. It establishes benchmarks for ophthalmology residents with respect to moral evaluation skills (DIT-2, N2), opinions, and participation in areas of social concern (social survey) and assessments of professionalism by faculty. This effort showed no statistically significant effect on the evaluations of residents' clinical performance by ophthalmology faculty.

The inability of this study to demonstrate a positive effect of ethics education may be a result of the shortcomings of this attempt to create an ethics program, and the problems encountered are being addressed. The ACGME Outcomes Assessment Initiative will provide “tool boxes” to help devise methods to teach and assess ethics education. The result will be a mandatory and standardized ethics education within all residencies. It will be of tantamount importance that the ABO commit to ethics questions on all Board examinations. The Board has already committed to develop standardized ethics questions with the same psychometric validation as all questions that are asked during Board examinations. However, the difficulties of creating an ethics program may be in the broader problems of not having a standard ethics curriculum, a standard format for peer evaluation, or raters (faculty) who are educated specifically for ethics evaluation. It seems apparent that resident performance will improve when all of the entities engaged in resident education are aligned in their commitment to ethics education. This includes the residency review committee that functions under the ACGME, the ABO, and the American Academy of Ophthalmology.

Because there are many variables involved in ethics education and in the assessment of clinical performance, there is a need for studies that include large numbers of medical students, residents, and/or faculty. In addition, longitudinal studies starting with medical school and continuing through residency and into clinical practice would be desirable. The aggregate research within medicine will force the teaching of ethics to be integrated into the overall education of physicians. It is hoped that other efforts will follow this preliminary work and will result in more reliable methods of teaching and evaluating both ethics education and peer assessment.

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## APPENDIX A

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### READING LIST FOR MEDICAL ETHICS COURSE

(Asterisk indicates mandatory reading.)

#### Introduction

- \*Beauchamp TL, Childress JF. Moral and ethical theory. In: Beauchamp TL, Childress JF. *Principles of Biomedical Ethics*. 2nd ed. New York: Oxford University Press; 1983:3-18.
- Himmelfarb G. *One Nation, Two Cultures*. New York: Alfred A. Knopf; 1999.
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#### 1. Informed Consent

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#### 2. New Technology

- American Academy of Ophthalmology. Advisory Opinion of the Code of Ethics. Learning new techniques following residency. San Francisco, Calif: American Academy of Ophthalmology; 1997.
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- Prasad S. Phacoemulsification learning curve: experience of two junior trainee ophthalmologists. *J Cataract Refract Surg* 1998;24:73-77.

#### 3. Advertising

- Hoskins HD Jr. LASIK advertising is testing our profession. *Eyenet* June 2000:12-13.
- \*Packer S. Advertising. In: *The Ethical Ophthalmologist: A Primer*. San Francisco, Calif: American Academy of Ophthalmology; 1993: chap 10.

#### 4. Commercial Relationships

- Jonsen AR. Medical ethics and the medical entrepreneur: Are they compatible? *Florida Med Assoc* 1987;74:594-598.
- \*Polansky JD. Commercial relationships. In: *The Ethical Ophthalmologist: A Primer*. San Francisco, Calif: American Academy of Ophthalmology; 1993: chap 8.

#### 5. Resource Allocation

- Beauchamp TL, Childress JF. *Principles of Biomedical Ethics*. 2nd ed. New York: Oxford University Press; 1983:183-220.



<b>Respect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Shows inadequate personal commitment to honoring the choices and rights of other persons, especially regarding their medical care.										Always shows exceptional personal commitment to honoring the choices and rights of other persons, especially regarding their medical care.
<b>Medical Knowledge</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Limited and fragmented.										Extensive and well-integrated.
<b>Ambulatory Care Skills</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Very poor ability to diagnose and treat patients and coordinate care in the outpatient setting.										Excellent ability to diagnose and treat patients and coordinate care in the out patient setting.
<b>Integrity</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Shows inadequate commitment to honesty and trustworthiness in evaluating and demonstrating own skills and abilities.										Always shows exceptional commitment to honesty and trustworthiness in evaluating and demonstrating own skills and abilities.
<b>Psychosocial Aspects of Illness</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Does not recognize or respond to psychosocial aspects of illness.										Recognizes and responds to psychosocial aspects of illness.
<b>Management of Multiple Complex Problems</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Very limited ability to manage patients with multiple complex medical problems.										Excellent ability to manage patients with multiple complex medical problems.
<b>Compassion</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Shows inadequate appreciation of patients' and families' special needs for comfort and help, or develops inappropriate emotional involvement.										Always appreciates patients' and families' special needs for comfort and help, but avoids inappropriate emotional involvement.
<b>Responsibility</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Does not accept responsibility for own actions and decisions; blames patients or other professionals.										Fully accepts responsibility for own actions and decisions.
<b>Management of Hospitalized Patients</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Very poor ability to diagnose and treat patients and coordinate care in the inpatient setting.										Excellent ability to diagnose and treat patients and coordinate care in the inpatient setting.

<b>Problem Solving</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Fails to critically assess information, risks, and benefits; does not identify major issues or make timely decisions.										
Critically assesses information, risks, and benefits; identifies major issues and makes timely decisions.										

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<b>Overall Clinical Skills</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>UA</b>
Very poor overall clinical skills										
Outstanding overall clinical skill										

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## APPENDIX C

### SOCIAL SURVEY

Please circle your answers to the following questions:

1. Have you contributed to an environmental or conservation organization in the last 3 years?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

2. I have worked on a community project in the last 3 years.

- 1 Zero times
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

3. How much do you enjoy your job?

- 1 A lot
- 2 A little
- 3 Not at all

4. I actively seek out information concerning other cultures.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

5. I prefer watching movies at home instead of going to the theater.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree

- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

6. How many times have you given blood in the last 5 years?

- 0 Never
- 1 Once
- 2 2 times
- 3 3 times
- 4 4 times
- 5 5 times
- 6 6 or more times

7. I would rather spend a quiet evening at home than go out to a party.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

8. Women are smarter than men.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

9. I told a lie in the last 12 months.

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

10. I am the kind of person who knows what I want to accomplish in life and how to achieve it.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

11. My friends often seek my advice regarding important decisions.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree

6 Definitely Agree

12. I would be content to live in the same community the rest of my life.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

13. I would rather go out with friends and family than spend a quiet evening at home.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

14. I am interested in politics.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

15. Generally speaking, would you consider yourself to be

- 1 Very Conservative
- 2 Moderately Conservative
- 3 Middle of the Road
- 4 Moderately Liberal
- 5 Very Liberal

16. What is your political affiliation?

- 1 Democrat
- 2 Republican
- 3 Some other party
- 4 No Party Affiliation

17. In the last year, how many times have you attended a public meeting on public affairs?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

18. In the last year, how many times have you attended a political rally?

- 1 None
- 2 1-4 times

- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

19. How many times have you written a letter to an editor of a magazine or newspaper in the last 12 months?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

20. In the last year, how many times have you been active in a political group or action committee?

- 1 Very Active
- 2 Moderately Active
- 3 Not Active

21. How many times have you contacted a public official in the last 12 months?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

22. How often have you attended club meetings in the last 12 months?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

23. How many times have you attended a sporting event in the last 12 months?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

24. I enjoy going to bars, clubs or discos

- 1 Very Much
- 2 Sometimes
- 3 Very Infrequently

4 Not At All

25. Have you read a book for leisure in the last 12 months?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

26. Have you played a team sport (basketball, softball, tennis, volleyball, etc.) in the last 12 months?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

27. How many times have you given or attended a dinner party in the last 12 months?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

28. I am interested in volunteering my time to the community.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

29. Have you made a contribution to a charity in the last year?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

30. Did you perform any volunteer work in the last year?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times

- 6 25-51 times
- 7 52+ times

31. How many times have you visited relatives in the last 12 months?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

32. How many times a week do you find yourself sitting down to dinner with most of your family?

- 1 A lot more
- 2 A little more
- 3 About the same
- 4 A little less
- 5 A lot less

33. Average weekday TV watching per day

- 0 Usually don't watch
- 1 15-30 minutes
- 2 30-60 minutes
- 3 1-2 hours
- 4 2-3 hours
- 5 3 hours or more

34. I believe in God.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

35. Religion is an important part of my life.

- 1 Definitely Disagree
- 2 Generally Disagree
- 3 Moderately Disagree
- 4 Moderately Agree
- 5 Generally Agree
- 6 Definitely Agree

36. How many times have you attended a place of worship in the last 12 months?

- 1 None
- 2 1-4 times
- 3 5-8 times
- 4 9-11 times
- 5 12-24 times
- 6 25-51 times
- 7 52+ times

37. What is your age?

- 1 20 – 25
- 2 26 – 30
- 3 31 – 35
- 4 36 – 40
- 5 41 – 50
- 6 51 and older

38. What is your sex?

- 1 Male
- 2 Female

39. What is your race?

- 1 Hispanic
- 2 Black
- 3 White
- 4 Asian/Pacific Islander
- 5 Other

40. What type of residence do you have?

- 1 House
- 2 Apartment
- 3 Mobile Home
- 4 Condominium
- 5 CO-OP
- 6 Other

41. What is your marital status?

- 1 Married
- 2 Widowed
- 3 Divorced
- 4 Separated
- 5 Single (Never Married)

42. What is the education level of your spouse?

- 1 Not Married
- 2 Attended Elem and/or High School
- 3 Grad High School
- 4 Attended College
- 5 Grad College
- 6 Post-Grad Educ

43. What is the employment status of your spouse?

- 1 Not Married
- 2 Full-time
- 3 Part-time
- 4 Not employed

44. How many children do you have living at home?

- 0 None
- 1 One
- 2 Two
- 3 Three
- 4 Four
- 5 Five or more

45. How many people are in your household, including yourself, your spouse, any children living at home with you, and any others living with you?

- 1 One
- 2 Two
- 3 Three
- 4 Four
- 5 Five
- 6 Six
- 7 Seven
- 8 Eight or more

46. Do you own a residence?

- 0 No
- 1 Yes

47. What is your total household income?

- 1 Under \$3,000
- 2 \$3,000 - \$9,999
- 4 \$10,000 - \$14,999
- 5 \$15,000 - \$19,999
- 6 \$20,000 - \$30,999
- 7 \$40,000 - \$50,999
- 8 \$60,000 - \$70,999
- 9 \$80,000 and up

48. Have you had any military service?

- 0 No
- 1 Yes

## **APPENDIX D**

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### **ADDITIONAL SOURCES FOR ONLINE ETHICS CURRICULA**

American Academy of Ophthalmology. The Ethical Ophthalmologist.

Available at: <http://www.aao.org/education/courses/ethics/index.cfm>. Accessed June 17, 2005.

American Medical Association. Virtual Mentor.

Available at: <http://www.ama-assn.org/ama/pub/category/3040.html>. Accessed June 17, 2005.

Royal College Physicians Surgeons Canada. Bioethics Education Project. Surgery Curriculum.

Available at: <http://rcpsc.medical.org/ethics/surgery/index.php>. Accessed June 17, 2005.

University of Illinois at Chicago, College of Medicine. Core Curriculum. Medical and Clinical Ethics Modules.

Available at: <http://www.uic.edu/classes/dme/gme/Home.html>. Accessed June 17, 2005.

University of Toronto Medical School. Undergraduate Medical Ethics. Lectures in Ethics.

Available at: [http://www.utoronto.ca/jcb/education/documents/msc\\_3002y.htm](http://www.utoronto.ca/jcb/education/documents/msc_3002y.htm). Accessed June 17, 2005.