A Longitudinal Simulation-Based Ethical–Legal Curriculum for Otolaryngology Residents

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Objective: To develop, implement, and evaluate a longitudinal, simulation-based ethics and legal curriculum designed specifically for otolaryngology residents.

Methods: Otolaryngology residents were recruited to participate in a yearly half-day ethical–legal module, the curriculum of which spanned 4 years. Each module included: three simulated scenarios, small-group multisource feedback, and large-group debriefings. Scenarios involved encounters with standardized patients. Residents' ethical–legal knowledge was assessed pre- and postmodule with multiple-choice questions, and ethical reasoning was assessed by a variety of evaluators during the simulated scenario using a locally developed assessment tool. Participants completed an exit survey at the end of each module.

Results: Eighteen residents completed four modules from the academic years of 2008 to 2009 to 2011 to 2012. The first year was considered a pilot module, and data were collected for the following 3 years. Knowledge of legal issues improved significantly among residents (mean at pre = 3.40 and post = 4.60, $P < 0.05$). Residents' ethical reasoning skills also improved across years (mean 3.60/5 in 2009–2010, 3.76/5 in 2010–2011, and 4.33 in 2011–2012, $P < 0.05$). Survey results revealed a statistically significant self-perceived improvement in ethics reasoning skills (mean pre = 3.62, post = 4.86, $P < 0.05$). Participants reported that the curriculum was relevant to their practice (85%), that the debriefings were of high quality (83%), and that they would recommend this module to others (88%).

Conclusion: To our knowledge, this is the first study exploring a longitudinal simulation-based ethical–legal curriculum tailored to otolaryngology–head and neck surgery residents. This educational program resulted in a both objective and subjective improvement in legal and ethics knowledge and skills.

Key Words: Ethics curriculum, medical education, simulation, legal, standardized patient.

Level of Evidence: NA.

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INTRODUCTION

Ethics is broadly defined as the branch of philosophy which deals with moral principles that govern human behavior,[1] and medical ethics focuses primarily on issues arising out of the practice of medicine.[2] Over the years, medical ethics has become an integral part of resident teaching curriculums through formal competencies as defined by teaching authorities, such as the Royal College of Physicians and Surgeons of Canada (RCPSC)[3] and the Accreditation Council for Graduate Medical Education (ACGME)[4] in the United States. The

inclusion of formalized ethical training occurred in conjunction with the professionalism movement in the early 1980s.[5]

Multiple studies have concluded that the behavior trainees demonstrated during residency correlates well with future practice.[6–8] Over and above a thorough knowledge base, strong clinical skills, and expert surgical competence, a sound understanding of the principles of ethics is necessary for a well-rounded physician and surgeon.[3,4] Although knowledge of medical ethics principles could be considered as the formalized knowledge-base supporting behavior, it is crucial for training programs to include practice sessions in which this acquired knowledge can be applied to complex clinical scenarios.

Traditionally, ethical reasoning skills have been taught to residents through informal and often intermittent clinical bedside teaching.[9–11] In the last two decades, a shift in instructional strategies used has occurred, beginning with large group didactic sessions (through journaling, academic rounds, seminars and dedicated resident teachings)[12] to the more recent implementation of case-based, small group discussions.[13] This educational shift is supported by multiple advantages of active learning strategies (i.e., problem-based learning and small group discussions),[14–17] such as better recall and utilization of inductive reasoning strategies. Active

learning may better address the increasing complexity of clinical practice in which judgement, knowledge, and sound reasoning are all required; as such, active learning may be more effective for learning than classical didactic teaching for the development and refinement of these specific ethical and legal skills.[13–16]

Within medicine, one commonly used active learning approach is simulating medical scenarios, which has been shown to increase resident performance when faced with similar real-time events.[18,19] It allows for both active learning and experiential learning[20] in a controlled environment, with the added benefit of the opportunity for expert feedback. Simulated scenarios also provide a means of standardizing teaching because equitable educational experiences are an important component of accreditation requirements.[21] Regardless of the teaching method, many postgraduate training programs continue to dedicate little formalized curricular time to the area of medical ethics due to a perceived lack of resident interest and faculty expertise, and more commonly, competition for time.[22]

To our knowledge, few postgraduate training programs have implemented a formal longitudinal ethical–legal curriculum,[9,12] and no program to date has described a formal ethics curriculum tailored to surgeons.[10] Furthermore, the field of emergency medicine is the only discipline that has reported the use of simulation as an instructional strategy for teaching ethics to residents,[23] and none have documented the use of standardized patients. Therefore, to remedy this training gap, we sought to develop, implement, and evaluate a longitudinal, simulation-based, ethical–legal curriculum designed specifically for otolaryngology–head and neck surgery (OTL–HNS) residents using standardized patients.

MATERIALS AND METHODS

Approval from the institutional ethics review board at McGill University, Montreal, Quebec, Canada, was obtained prior to the start of this prospective study. For this study, the terms *ethics* and *ethical* refer to the value system of human reasoning, whereas the term *legal* refers to the law as a concrete code of conduct. Given that these two concepts often exist hand in hand, particularly when related to medicine, the term *ethical–legal* will frequently be utilized. An exception is with regard to reasoning skills. Only the term *ethical reasoning skills* will be utilized because *legal reasoning* is generally a term reserved for the analytical thinking process of lawyers and judges when deciphering a court case.

Developing the Ethics Curriculum

Through a multi-stage process, the ethical–legal curriculum was developed by a committee of experts in medical education, simulation, OTL–HNS surgery, medical ethics, medicolegal law in consultation with a patient representative, and OTL–HNS residents. The educational program was created using Kern's six-step approach to curriculum development.[24] The first step, problem identification, was identified by both the RCPSC and the ACGME as the need for formal ethical–legal training among residents.[3,4] A review of our institution's OTL–HNS curriculum revealed that a lack of explicit ethical–legal teaching, consisting of the second step, needs assessment. We therefore sought to develop a formal curriculum. Goals and objectives of

the curriculum, Kern's third step, were pulled directly from RCPSC and ACGME guidelines. The ethical–legal topics, summarized in Table IA, were chosen based on both the ACGME and the RCPSC guidelines, given that the courses were given at a Canadian site. The curriculum consisted of 4 yearly half-day courses covering three topics each; therefore, 12 main ethical–legal topics were covered in total across 4 years. Given that, as previously stated, ethical and legal topics are often tightly intertwined, legal concepts were incorporated into the curriculum. The fourth step, educational strategies, consisted mainly of implementing simulation to improve learning engagement. Kern's last step, consisting of evaluation and feedback, was accomplished through exit surveys. The program went through frequent re-evaluations and implemented changes as needed.

Each module began with a didactic lecture given by an invited guest speaker (lawyer or ethicist). The content of the lecture reflected concrete ethical and legal principles that the residents would encounter in the simulated scenarios to follow. Residents then rotated through three 10-minute simulated scenarios using standardized patients (SPs). Each scenario was followed by a 20-minute structured debriefing session in small group format. Each resident participated in one scenario, and observed their peers in two others. Lastly, residents and staff convened for a large-group, video-assisted discussion.

All residents from all levels of training (from postgraduate year [PGY]1 to PGY5) participated in the module every year. Therefore, a wide range of scenarios in terms of complexity was required for every module. Residents were matched to an ethical scenario corresponding to their level of training. As they progressed in residency, they were assigned scenarios with an increasing level of difficulty, representing the longitudinal nature of the curriculum.

Simulated Scenarios

For each of the 12 ethical–legal topics, two OTL–HNS staff created a clinically relevant simulated scenario to be used with standardized patients. Most of the simulated scenarios contained an ethical issue embedded within a clinical scenario. Few of the scenarios were more explicitly focused solely on ethics, for example, the scenario pertaining specifically to research ethics (see Tables (IA and 1B)). The SPs were actors trained by the Steinberg Center for Simulation and Interactive Learning (McGill University) to accurately and consistently recreate the parameters provided in a given medical scenario. Standardized patients were given the scripted scenarios in advance, which included detailed background information about the actors' roles and scenario objectives, as well as specific prompts that SPs could use to help direct the conversation with the participants. Faculty otolaryngologists met with all the SPs prior to each module to discuss scenarios and address any questions or concerns. Furthermore, role-playing with the SPs in the form of dry runs was undertaken to troubleshoot and provide feedback.

Study Setting and Participants

From the academic years of 2008 to 2009 to 2011 to 2012, all otolaryngology residents (PGYs 1–5) from a single academic institution were excused from clinical duty to attend the yearly half-day courses. At our institution, all clinical duties and instructions are provided in English; therefore, all residents are fluent in English. However, many residents speak English as a second language to either French (French Canadian origins) or Arabic (Arab Gulf origins). Each resident was invited to participate in the study and provided consent. Choosing not to participate in the research study to evaluate the quality of the

Year	Ethics Topic	ACGME Guideline(s)	Simulated Scenario
2008	1. Substitute decision making: End-of-life measures	IV.A.5.a) (1) Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and promotion of health	DNR order without patient consent.
2008	2. Confidentiality: Inter-physician relations	IV.A.5.d) (2) Residents are expected to communicate effectively with physicians, other health professionals, and health related agencies.	Miscommunication leading to a patient undergoing the wrong surgery.
2008	3. End-of-life issues: Withholding/withdrawing care	IV.A.5.e) (3) Residents are expected to demonstrate respect for patient privacy and autonomy.	Family requesting to withhold resuscitation measures for a patient.
2009	1. End-of-life issues: Physician-assisted suicide	IV.A.5.e) (4) Residents are expected to demonstrate accountability to patients, society and the profession.	The resident must discuss an aggressive thyroid cancer diagnosis with the patient.
2009	2. Truth-telling and communication: Informed consent	IV.A.5.e) (3) Residents are expected to demonstrate respect for patient privacy and autonomy. IV.A.5.d) (1) Residents are expected to communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds IV.A.5.c) (8) Residents are expected to participate in the education of patients, families, students, residents and other health professionals	The resident must obtain informed consent for tympanomastoidectomy surgery.
2009	3. Professional obligations of surgeons: Surgical competence/impaired physician	IV.A.5.c) (1) Residents are expected to identify strengths, deficiencies, and limits in one's knowledge and expertise. IV.A.5.a) (2) Residents must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. *Residents and faculty members must demonstrate an understanding and acceptance of their personal role in the following:* VI.A.6.c) Assurance of their fitness for duty. VI.A.6.e) Recognition of impairment, including illness and fatigue, in themselves and in their peers.	A distracted surgeon is about to operate on the wrong ear. The resident is expected to intervene.
2010	1. Truth-telling and communication: Disclosure	IV.5.d) (1) Residents are expected to communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds	The resident must discuss an adverse event with a child's mother.
2010	2. Competition /conflict of interest: Resource allocation	*Residents are expected to*: IV.A.5.f) (3) Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate. IV.A.5.f) (4) Advocate for quality patient care and optimal patient care systems.	Patient with recurrent tonsillitis complains about the prolonged operative waiting list for his tonsillectomy.
2010	3. Substitute decision making: Incompetentpatient	IV.A.5.e) (3) Residents are expected to demonstrate respect for patient privacy and autonomy.	A patient who had previously signed a DNR form suddenly becomes unconscious. The resident must deal with his family who wish to resuscitate him.
2011	1. Confidentiality: Patient confidentiality	IV.A.5.e) (3) Residents are expected to demonstrate respect for patient privacy and autonomy.	The resident must deal with a very flirtatious patient.
2011	2. Competition/conflict of interest: Research ethics	IV.B.1 The curriculum must advance residents' knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care.	A research supervisor attempts to convince the resident to falsify data.
2011	3. Professional obligations of surgeons: Patient–physician relationship	IV.A.5.d) (1) Residents are expected to communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.	A bus driver becomes aggressive toward the resident when he is advised to refrain from driving following a new diagnosis of severe vertigo.

The scenarios developed were explicitly mapped to the RCPSC and ACGME educational objectives.
Citations for ACGME guidelines taken from the 2013 program descriptions[4]
DNR = do not resuscitate.

TABLE 1B.
Detailed Description of Simulated Scenarios.

	Ethics Topics	Simulated Scenario	Key Points in Feedback
2008	1. Substitute decision making: End of life measures	A 45-year-old female is asking for a DNR order to be written on her mother's chart without her mother's knowledge. Her mother has laryngeal cancer and has recently been admitted to hospital with shortness of breath and has been found to have metastases to her lungs.	Effective and compassionate communicate with both mother and daughter Knowledge of the law regarding DNR orders
2008	2. Confidentiality: Interphysician relations	A series of miscommunication events in the operating room lead to a 26-year-old male patient undergoing the wrong surgery. The resident must inform the patient.	Effective communication with patient and family Disclosure of events Avoids pointing blame
2008	3. End of life issues: Withholding/ withdrawing care	The children of a 65-year-old patient with metastatic head and neck cancer are requesting for the physician to withhold resuscitation measures for their mother.	Effective and compassionate communicate with both mother and daughter Knowledge of the law regarding DNR orders
2009	1. End of life issues: Physician assisted suicide	The resident must discuss a new diagnosis of aggressive thyroid cancer with a young 29-year-old female patient.	Effective, clear, and compassionate communication with patient while breaking bad news Use of nonmedical language Clarity of message delivered Appropriately addresses patient's questions and concerns
2009	2. Truth-telling and communication: Informed consent	A 22-year-old female fine arts student has had left-ear drainage for 6 months despite medical therapy. CT scan has revealed a cholesteatoma, which requires a tympano-mastoidectomy. The resident must obtain informed consent for her surgery 1 week preoperatively.	Structured and comprehensive content containing any alternatives, benefits of surgery, risks and complications, expected outcome, follow-up and recovery Use of nonmedical language Appropriately addresses patient's questions and concerns
2009	3. Professional obligations of surgeons: Surgical competence/impaired physician	A distracted surgeon is about to operate on the wrong ear. The resident is expected to intervene.	Collegial interaction with attending staff Clearly and politely explains problem without minimizing gravity of situation
2010	1. Truth-telling and communication: Disclosure	The resident perforates a young boy's tympanic membrane while trying to clean his ears in the clinic while his mother is watching. The resident must discuss the event with the boy's mother.	Provides a clear description of events to family without falsifying or omitting events Apologizes Avoids pointing blame Explains likely prognosis and follow-up plan
2010	2. Competition /Conflict of interest:Resource allocation	A young 22-year-old man with recurrent tonsillitis complains about the prolonged operative waiting list for his tonsillectomy.	Compassionate about patient's situation Does not succumb to patient's request or bribe to be moved up on the waiting list Provides the necessary medical treatment to treat infections and alleviate pain while waiting for procedure
2010	3. Substitute decision making: Incompetentpatient	An elderly 77-year-old male patient who had previously signed a DNR form suddenly becomes unconscious. The resident must deal with his family who wish to resuscitate him.	Knowledge of the law regarding incapacitated patients Compassionate but firm and clear communication with family
2011	1. Confidentiality: Patient confidentiality	The resident must deal with a very flirtatious patient (both male and female standardized patients participated).	Knowledge of the law regarding patient–physician relationships Maintaining a professional demeanor toward patient Avoiding flirting back and not agreeing to meet patient outside the hospital for a date
2011	2. Competition/conflict of interest: Research ethics	A research supervisor attempts to convince the resident to falsify data to improve results.	Knowledge of research ethics Resisting the supervisor's wishes while remaining professional
2011	3. Professional obligations of surgeons: Patient–physician relationship	A 44-year-old male bus driver becomes aggressive toward the resident when he is advised to refrain from driving for 1 year following a new diagnosis of severe vertigo.	Knowledge of the law regarding driving and vertigo Appropriate reaction to aggressive behavior: call for help, open office door, etc. Attempts to calm down patient

Citations for Accreditation Council for Graduate Medical Education guidelines taken from the 2013 program descriptions.[4]
CT = computed tomography.

educational course did not prevent a resident from participating in the educational program. Consent was sought for each half-day course separately. Courses were held at McGill University's Steinberg Center for Simulation and Interactive Learning, equipped with a large conference room, as well as multiple examining rooms with one-sided mirrors for the simulated scenarios. The first module (academic year 2008–2009) was considered a pilot year, the success of which led to the implementation of the following three yearly courses to complete the curriculum.

Resident Assessment

For each simulated scenario, locally developed assessment forms, including items addressing ethical–legal skills, knowledge, and attitudes, were completed by two observing OTL–HNS staff, two observing residents, the standardized patient(s), the participating resident (as a self-assessment), and occasionally the ethicist or lawyer when available. The assessment tools were used to guide debriefings and highlight areas of improvement for residents. Their main purpose was formative and not summative; therefore, they were not used as part of a formal resident assessment. The authors acknowledge the existence of several previously developed and validated tools to assess ethical reasoning.[25,26] However, for the purpose of assessing performance during simulated scenarios, the authors felt that these tools were not well adapted to the simulation context because most focused on written assessments such as multiple choice questions or short answers, and the remainder were created based on specialty specific cases, with most pertaining to the fields of general practice and internal medicine. For the purposes of this article, ratings from the OTL–HNS staff are the focus of analysis because they represent the most objective and consistent assessors of resident performance across time. To improve inter-rater reliability among the OTL–HNS staff evaluators, several steps were taken. The same six OTL–HNS staff consistently served as assessors for all 4 years of the curriculum. Rater training was accomplished by preassigned readings on debriefing points and yearly faculty debriefing sessions held prior to the courses. The staff were chosen based on their past involvement with resident training and their experience with giving appropriate and targeted feedback.

The assessment forms consisted of 10 to 12 scenario-specific ethical–legal skills items, with each item rated on a five-point Likert scale. The raters (and rating items) were focused on the resident's ability to reason through simulated scenarios. Assessors observed the residents in the simulated scenario behind a one-way mirror. In order to accommodate the large number of residents in a timely fashion, each scenario was simulated simultaneously in several rooms. Therefore, the residents who participated in a given scenario did not necessarily encounter the same standardized patients or the same evaluators. Although numerous staff and standardized patients were present to accommodate the large number of residents, only one ethicist or lawyer attended the module. The invited lawyer or ethicist would thus rotate between scenarios; consequently, not all residents were evaluated by the invited ethicist or lawyer.

Program Evaluation

Pre- and postmodule multiple choice question tests. Specific to each module, a written examination consisting of 20 multiple-choice questions covering pertinent legal and ethical knowledge was developed. Given the study setting, test material was based on the relevant Quebec Code of Ethics[27] and the Canadian Medical Association Code of Ethics,[28] as well as the Quebec Civil Code.[29] The identical examination was administered to all residents both before and after completion of the module to allow for comparison.

Survey. At the end of the module, residents completed an anonymous exit survey with items rated on a 5-point Likert scale. Residents were asked to evaluate each scenario within each module for realism and relevance to their clinical practice, to assess their self-perceived skills improvement via a retrospective pre- and postquestion (residents participated in the course then retrospectively rated their skills 1) prior to participating and 2) following participation) and to evaluate the modules as a whole.[30] Additionally, open-ended questions, such as the strengths and weaknesses of the modules, main points learned, and suggestions for future improvement, were included in the survey.

Data Analysis

The first module of the curriculum served as a pilot study. Complete data for a total of nine scenarios was collected for the last three consecutive modules (academic years of 2009–2010 to 2011–2012). The pre- and postknowledge based tests were compared using a standard paired t test, with $P < 0.05$ considered significant. The surveys were analyzed using standard mean, median, and confidence interval analyses. A longitudinal comparison of both prepost tests and evaluation forms spanning years was also possible for some residents (those having participated in more than one module). For the simulated scenarios evaluations, mean ratings per learner were calculated by scenario and by year. Descriptive statistics were used to examine performance trends. Mean ratings per scenario were compared using t tests for gender and language differences. Analysis of variance (ANOVA) was used to compare mean ratings across PGY levels. Finally, random-intercept regression was used to examine whether learner performance improved over training year (academic years of 2009–2010 to 2011–2012).

RESULTS

Resident Assessment

A total of 18 residents completed four modules from the academic years of 2008 to 2009 to 2011 to 2012, of which the topics are summarized in Tables IA and 1B. All residents in the program consented to participate in the study. As mentioned previously, 2008 to 2009 served as a pilot academic year with no program evaluation data collected. Table II shows descriptive statistics by year and by scenario. There were no significant differences in scenario difficulty within a given year. However, mean ratings for the academic year of 2011 to 2012 for all three scenarios were significantly higher than those found in 2009 to 2010 and 2010 to 2011 ($P < .05$). The reliability of the scenarios was good (range between .78 and .91), and reliability indices can be found in Table III.

Results from the random-intercept regression indicate that on average, a learner's mean rating at baseline (year 2009–2010) was 3.53 and increased by .36 points per year ($P < 0.001$). There were no differences in mean ratings by gender (mean rating for males was 3.90 (standard deviation [SD] = 0.63), whereas for females it was 3.88 (SD = 0.47), $P = 0.94$). Overall, residents speaking English as a first language performed significantly better than residents speaking English as a second

	TABLE II.					
	Descriptive Statistics of Participant Performance per Scenario as Judged by Expert Raters.					
Year	Scenario	*n*	Mean	SD	Minimum	Maximum
2009	1. Physician assisted suicide	6	3.12	.62	2.20	3.90
	2. Informed consent	6	3.88	.69	2.60	4.50
	3. Impaired physician	6	3.81	.62	3.09	4.73
2010	1. Disclosure	6	3.81	.49	3.17	4.33
	2. Resource allocation	6	3.85	.35	3.34	4.25
	3. Incompetent patient	6	3.61	.43	3.05	4.28
2011	1. Patient confidentiality	6	4.37	.63	3.44	5.00
	2. Research ethics	6	4.43	.25	4.14	4.79
	3. Patient-physician relationship	6	4.18	.29	3.82	4.64

Means refer to a total score of all participants per scenario.
SD = standard deviation.

language (mean rating for residents speaking English as a first language was 4.03 (SD = 0.55), whereas the mean rating for all other residents was 3.59 (SD = 0.65), $P < 0.05$). There were no differences by PGY level (ANOVA, $P = 0.19$), and mean values can be found in Table IV. In terms of differences in rate of improvement between residents speaking English as a first language and other residents, random-intercept regression analysis revealed that the rate of improvement for non-English speakers was significantly better than English speakers over time, by 0.42 points per year, and with $P < 0.01$.

Program Evaluation

Prepost knowledge test. Legal and ethics knowledge improved significantly between the pre- and posttest, $P < 0.05$ for each module, with the cumulative pretest mean over 3 years being 3.40, compared to a posttest mean of 4.60.

Survey. Participants reported a significant self-perceived improvement in ethics reasoning skills (mean

	TABLE III.			
	Psychometric Properties of Scenarios: Reliability and Inter-Item Correlation.			
Year	Scenario	Number of Items	Inter-Item Correlation	Scenario Reliability
2009	1. Physician-assisted suicide	10	.37	.86
	2. Informed consent	10	.27	.78
	3. Impaired physician	11	.25	.78
2010	1. Disclosure	10	.43	.88
	2. Resource allocation	9	.29	.79
	3. Incompetent patient	10	.39	.86
2011	1. Patient confidentiality	9	.47	.89
	2. Research ethics	7	.60	.91
	3. Patient–physician relationship	11	.29	.82

"Items" refer to station-specific scoring grid. "Inter-item correlation" indicates the mean correlations between ratings of items within the same station. "Reliability" indicates the internal-consistency reliability (Cronbach's alpha).

pre = 3.62, post = 4.86, $P < 0.05$). Participants found that the curriculum was relevant to their practice (85%: 17 of 20 in 2009–2010, 18 of 20 in 2010–2011 and 16 of 20 in 2011–2012), that the debriefings were of high quality (83%: 16 of 20, 16 of 20, and 18 of 20), and that they would recommend this module to others (88%: 18 of 20, 17 of 20 and 18 of 20) (see Table V). Examples of comments by residents in response to the open-ended questions are summarized in Table VI.

DISCUSSION

To our knowledge, this is the first study to design and evaluate an ethical–legal curriculum constructed specifically for OTL–HNS residents. The novel aspects of this curriculum include that it is simulation-based, longitudinal in nature, fully integrated into a training program, and carefully mapped to both RCPSC and ACGME educational objectives.[3,4] We demonstrated an improvement of both ethical–legal reasoning skills and of ethical–legal knowledge following participation in this curriculum, assessed through expert ratings and written examinations, respectively. Residents reported self-perceived improvement in ethical–legal reasoning skills, as well as consistent overall satisfaction and perceptions of benefit throughout the modules. Participants found the curriculum highly relevant to their practice and would recommend the module to others.

Medical ethics has been taught in various specialties by means of bedside teachings, academic rounds, journal clubs, and dedicated case-based didactic

	TABLE IV.				
	Mean Performance as Rated by Staff Otolaryngologists, Presented by PGY Level.				
PGY	*n*	Mean	SD	Minimum	Maximum
1	9	4.14	.49	3.26	4.73
2	13	3.56	.84	2.20	5.00
3	12	3.88	.53	3.05	4.53
4	9	4.06	.44	3.34	4.64
5	11	3.97	.46	3.09	4.90

PGY = postgraduate year; SD = standard deviation.

TABLE V.
Summary of Findings from Postmodule Exit Survey Completed by Participating Residents (presented as cumulative statistics from 2009–2011). [Color figure can be viewed in the online issue, which is available at www.laryngoscope.com.]
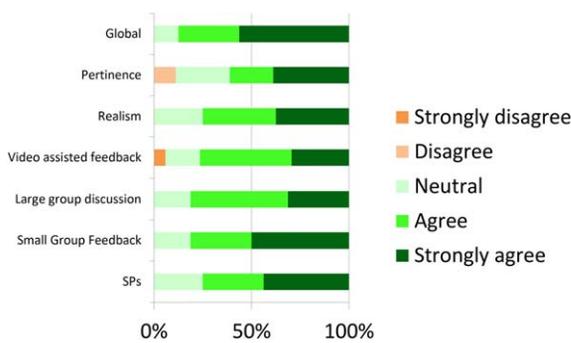
Results presented here represent participant responses, grouped by 5-point Likert Scale items (collated across all 18 participants): x-axis indicates items; colors represent the 5-point Likert scale ranging from 1 (strongly disagree, represented as orange color) to 5 (strongly agree, represented by green color); and y-axis indicates percentage of residents choosing each Likert scale response option. For example, a question such as "I felt that the content of the scenario was pertinent to my practice" can be answered by a spectrum ranging from strongly agree to strongly disagree.

Global = global evaluation of the module; SPs = "The standardized patients encounter was constructive."

sessions.[9–11] The Department of Dermatology at Brown University (Providence, RI) implemented a didactic ethics curriculum into their training program in 2001.[9] Various surgical specialties have also employed many of these teaching modalities in order to create an ethics course for residents.[10] In some instances, practical ethics training also is being fostered through clinical rotations with the ethics consult service during medical school.[31] To our knowledge, we are the first medical or surgical discipline to report the use of standardized patients as a means of facilitating the teaching of ethical reasoning to residents in the context of a longitudinal curriculum. The tailor-made approach of our curriculum specifically targeting OTL–HNS residents is also of importance because, although speculative, we believe that scenarios related to specialty-specific clinical contexts allow residents to engage more meaningfully with the course material. Furthermore, although core ethical principles are necessarily universal across specialties, there are rare instances when legal issues are relatively unique to OTL–HNS, for example, the laws addressing driving in patients with vertigo (included as one of the simulated scenarios).

The use of standardized patients has been extensively utilized in order to practice medical skills in various fields, examples of which include OSCE scenarios, patient interviews, crisis skills assessment, technical skills assessment, and communication skills.[32,33] Standardized patients appear to have been infrequently used as a means to teach ethics with some notable exceptions in nursing education[34] and dentistry.[35] We chose the standardized patient modality of simulation because of its high fidelity and ability to reflect the intricacies of clinical ethical–legal scenarios. Advantages of standardized patients include realistic portrayal of clinical scenarios and the added benefit of having the closest thing to a real patient present to provide feedback during debriefing sessions.

Residents speaking English as a first language performed significantly better than residents speaking English as a second language (ESL). However, the rate of improvement was significantly better for residents speaking ESL. This could be explained by a rapidly compensated language barrier, meaning that as residents became more comfortable with the language of the modules (English), their scores on the assessments improved. A second explanation could be varying geographic and linguistic customs affecting the expression of ethical–legal skills but not directly reflecting differential knowledge of core concepts. As a group, all residents improved significantly over time, regardless of their initial PGY level. Furthermore, no differences were found when we compared across PGY level. In other words, senior residents did not necessarily perform better than junior residents; however, all residents, regardless of their starting point, improved over time. This may suggest that ethical–legal skills are inadequately learned through clinical practice alone, and that all residents (regardless of PGY level) benefit from explicit teaching and an opportunity to practice their skills. Thus, an OTL–HNS residency program may benefit from the integration of a structured ethics curriculum.

The curriculum that was developed was frequently mapped back to the curricular ethical–legal objectives (in turn mapped onto the RCPSC and the ACGME) to reinforce core concepts before moving onto the next module. Constructing the curriculum in a longitudinal manner had multiple advantages. A longitudinal curriculum

TABLE VI.
Sample Resident Comments from Open-Ended Questions Included in Exit Survey.

Question	Sample Answers
What were the strengths of the module?	"Immediate feedback," "large group video feedback," "very real situations, practical perspective," "realistic cases related to Otolaryngology," "case-based scenarios relevant to our specialty," "clear objectives"
What were the weaknesses?	"That each participant only had time to participate in one scenario," "the clinical setting cannot be reproduced 100%"
What were the main things that you learned?	"To show more empathy," "to address the patient's concerns," "legal aspects of common scenarios"

spanning 4 years allowed for many different ethical–legal topics and scenarios to be covered. This is important since ethical–legal skills are often referred to as context specific.[36] Furthermore, a longitudinal curriculum allows for a step-wise approach with the possibility of monitoring residents' progress and improvement of ethical–legal skills across varying scenarios and over time. Also, the curriculum was dynamic and evolved based on participant needs and feedback received. Finally, a distributed learning format[37] (i.e., educational opportunities spaced across time) allowed for yearly reinforcement and recall.

This study had several limitations: The assessment tools developed and used for this curriculum did not undergo a formalized validation process. However, the formative assessment tools used were locally developed to strongly map to the curricular objectives and aligned well with other resident ethics evaluation tools.[9] As stated previously, the authors chose not to utilize preexisting validated tools to assess the ethical reasoning skills of residents due to the limited availability of appropriate tools that focus on performance during simulated scenarios. Further, the educational value of having locally developed assessment tools that closely align with the locally developed simulated scenarios outweighed the need for previously validated tools because assessment in our context was purely formative. However, for future versions of the course, we will attempt to modify and integrate a previously validated tool to transition this educational experience into a formal summative assessment of residents. This will be part of our continuing program evaluation to improve the course, in accordance with Kern's sixth step. We chose not to evaluate the efficacy of the curriculum compared to a control group because we felt that denying resident participation would be detrimental to their learning. Further, the developed curriculum was designed following sound educational principles (distributed learning, simulation-based cases, small group feedback), and thus relied on prior literature and strong pedagogical foundations for its educational strength.[15,20,37] The tool used for resident self-reported improvement (the retrospective pre-/post-) may be subject to recall bias; however, our findings are strengthened by the accompanying objective assessments of both knowledge and performance. Lastly, it is difficult to comment on the generalizability of the reported curriculum and whether its implementation would be as successful in other centers, in particular when considering that the legal aspects are often jurisdiction specific. Nevertheless, given the common ethical–legal objectives, we would not foresee any major issues with integrating the reported curriculum into other OTL–HNS residency training programs in North America.

CONCLUSION

In conclusion, to our knowledge, this is the first study reporting on a longitudinal simulation-based ethics curriculum tailored specifically to OTL–HNS residents using standardized patients. We have demonstrated evidence that this is an effective way to teach ethics and legal knowledge to OTL–HNS residents. We found both objective and subjective improvements in resident skills, with participants responding to the course positively. However, future studies are needed to assess generalizability and explore the successful implementation of this ethics curriculum in other residency programs.

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