High-Quality Feedback Regarding Professionalism and Communication Skills in Otolaryngology Resident Education

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Abstract
Objective. The Accreditation Council for Graduate Medical Education (ACGME) requires competency-based education for residents and recommends 5 basic features of high-quality feedback. Our aim was to examine the incorporation of feedback in articles regarding professionalism and interpersonal/communication skills for otolaryngology residency training curriculum.


Methods. We used studies identified during a systematic review of all indexed years through October 4, 2016.

Results. Eighteen studies were included in this review. Professionalism was discussed in 16, of which 15 (94%) examined aspects of feedback. Interpersonal/communication skills were the focus of 16 articles, of which 14 16 (88%) discussed aspects of feedback. Our assessment demonstrated that timeliness was addressed in 8 (44%) articles, specificity in 4 (22%), learner reaction and reflection in 4 (22%), action plans in 3 (20%), and balancing reinforcing/corrective feedback in 2 (13%). Two articles did not address feedback, and 6 did not address aspects of high-quality feedback. The ACGME-recommended feedback systems of ADAPT (ask, discuss, ask, plan together) and R2C2 (relationship, reactions, content, and coach) were not reported in any of the studies.

Conclusion. Feedback is an essential component of graduate medical education and is required by the ACGME milestones assessment system. However, the core feedback components recommended by the ACGME are rarely included in the otolaryngology resident education literature.

Keywords
feedback, professionalism, interpersonal/communication skills, resident education

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In 2002, the Accreditation Council for Graduate Medical Education (ACGME), in collaboration with the subspecialty residency review committees, mandated the incorporation of 6 core competencies (CCs) into each residency training curriculum: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills (ICS), professionalism, and systems-based practice. Recognition of the difficulty that individual programs had with measurement of these CCs resulted in the creation of the outcomes-based milestones in 2013. The motivation for their creation was to provide a more explicit definition of expected resident knowledge, skills, attributes, and performance. To ensure appropriate assessment of these milestones, every program was tasked to form a clinical competency committee composed of active teaching faculty who would serve as advisors to each program director in review of the progress of all residents in the program.

Of the 6 CCs, patient care, medical knowledge, practice-based learning and improvement, and systems-based practices have been tenets of residency training since William Halsted conceived of modern surgical training in the 1880s. However,
the formal teaching of the remaining 2 competencies, ICS and professionalism, has proved challenging for educators due to the perceived abstract nature and lack of formal training in these competencies by the educators themselves. In addition, assessment of ICS and professionalism skills is not well understood by many academic physicians, making the provision of feedback regarding these CCs even harder. In their guidance regarding feedback, the ACGME requires competency-based education for residents and recommends 5 components of high-quality feedback: timeliness, specificity, balance of reinforcing and corrective feedback, learner reaction and reflection, and creation of action plans. With these 5 components, the ACGME recommends two feedback models—ADAPT (ask, discuss, ask, plan together) and R2C2 (relationship, reactions, content, and coach)—to provide high-quality feedback to trainees. Although feedback is not in itself a CC, it is critical in the successful evaluation of all 6 CCs and even more critical for intangible skills, such as ICS and professionalism. The purpose of this review is to examine the incorporation of feedback regarding ICS and professionalism in the published English language literature focused on otolaryngology residency training.

Methods

This study was exempt from Institutional Review Board review. The study and search methods used were based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) checklist and statement recommendations. Figure 1 illustrates the search terms for inclusion of relevant studies according to the PRISMA guidelines. With the assistance of a medical librarian, we searched for relevant English-language studies in the following databases: PubMed, Embase, ERIC, Cochrane Library, Web of Science (Science Citation Index, Conference Proceedings Citation Index–Science, Conference Proceedings Citation Index–Social Science & Humanities), Scopus, and ClinicalTrials.gov. Searches were
performed to include all indexed years for each database through May 20, 2015. These were updated October 4, 2016. The electronic search strategy was designed for use in PubMed and subsequently tailored for the other databases by a medical librarian. The search utilized combined key terms and explored Medical Subject Headings. The full list of terms is included in Table 1.

Two independent investigators (E.A.F., J.Y.B.) reviewed all identified titles, abstracts, and full-text articles to determine if they met inclusion criteria. Studies were included if they contained direct or indirect findings related to resident education in otolaryngology and focused on any aspect of ICS or professionalism. Given the limited literature on this topic, we included all identified articles, including single-institution descriptive reports. Exclusion criteria included the following: not full-length articles (eg, commentary, letter to the editor, case study), review articles, those that were not in English, or studies that did not focus on otolaryngology resident education or did not discuss any aspect of feedback.

We used the guidelines published by the Centre for Evidence-Based Medicine5 to determine the level of evidence for each included study. A quantitative meta-analysis was not performed, because the included studies had diverse study design, differences in focus, and significant heterogeneity of data. Articles that focused on >1 content area were included in multiple categories.

### Results

Eighteen studies that referenced feedback and either professionalism or ICS were included in this review. All articles, except 1 from Canada, were conducted in the United States. Professionalism was discussed in 16, of which 15 (94%) examined aspects of feedback. ICS was the focus of 16 articles, of which 14 (88%) discussed aspects of feedback. Our assessment of the component categories of feedback demonstrated that timeliness was addressed in 8 (44%) articles, specificity in 4 (22%), learner reaction and reflection in 4 (22%), action plans in 3 (20%), and balancing reinforcing and corrective feedback in 2 (13%). Two articles did not address feedback at all, and 6 addressed feedback but included none of the features of high-quality feedback.6-13

The ACGME-recommended feedback systems of ADAPT and the R2C2 model were not reported in any. Table S1 (available in the online version of the article) outlines these studies, providing content descriptions and levels of evidence. Table 2 outlines the demographics of the articles.

### Timeliness

Of the 7 articles that addressed timeliness, there were 2 surveys, 4 prospective studies, and 1 retrospective study. Three articles were multi-institutional, while the other 4 were from a single institution. The first was a survey of 106 program directors that was carried out in 2016. It found that 81% of otolaryngology residency programs had a structured remediation plan with frequent feedback sessions for troubled residents. It also reported that frequent feedback was commonly the first step in remediation and typically led to complete solution of the issues.14 This finding was also reported in an airway management simulation study by Zirkle et al.15 Both these studies revealed that immediate feedback allows residents to self-reflect instantly, which the researchers hoped would result in improvement in future encounters and ultimately in patient outcomes.14,15 In a survey of otolaryngology residents in the United States, Gurgel et al discovered that regular and timely feedback of portfolio review allowed the trainee enough time for reflection of strength and weaknesses.16

A prospective study performed at the University of Mississippi focused on timely feedback in the clinic setting via objective structured clinical examinations (OSCEs).17 In this study, Franzese reported on a pilot evaluation of an OSCE designed to examine all 6 CCs based on case scenarios appropriate for the experience level of the resident. The goal was to provide meaningful information to improve

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**Table 1.** Select Search Terms Used for the Systematic Review of Residency Education in Otolaryngology.

<table>
<thead>
<tr>
<th>Major MeSH Terms</th>
</tr>
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<tbody>
<tr>
<td>Education, medical, graduate</td>
</tr>
<tr>
<td>Education, medical, continuing</td>
</tr>
<tr>
<td>Internship and residency</td>
</tr>
<tr>
<td>Specialty boards</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Otorhinolaryngology</td>
</tr>
<tr>
<td>Medical education</td>
</tr>
<tr>
<td>Otolaryngology</td>
</tr>
</tbody>
</table>

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**Table 2.** Demographics of the Articles.

<table>
<thead>
<tr>
<th>Article Characteristic</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country of study</strong></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>17 (94)</td>
</tr>
<tr>
<td>Canada</td>
<td>1 (6)</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td></td>
</tr>
<tr>
<td>Prospective</td>
<td>9 (50)</td>
</tr>
<tr>
<td>Retrospective</td>
<td>8 (44)</td>
</tr>
<tr>
<td>Survey</td>
<td>1 (6)</td>
</tr>
<tr>
<td><strong>Level of evidence (CEBM)</strong></td>
<td></td>
</tr>
<tr>
<td>1b</td>
<td>1 (6)</td>
</tr>
<tr>
<td>2b</td>
<td>3 (17)</td>
</tr>
<tr>
<td>2c</td>
<td>0 (0)</td>
</tr>
<tr>
<td>3b</td>
<td>1 (6)</td>
</tr>
<tr>
<td>4</td>
<td>13 (72)</td>
</tr>
<tr>
<td>5</td>
<td>0 (0)</td>
</tr>
<tr>
<td><strong>Health care system studied</strong></td>
<td></td>
</tr>
<tr>
<td>Single institution</td>
<td>10 (56)</td>
</tr>
<tr>
<td>Multi-institutional</td>
<td>8 (44)</td>
</tr>
</tbody>
</table>

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Abbreviation: MeSH, Medical Subject Headings. CEBM, Centre for Evidence-Based Medicine.
resident performance; following the scenario, immediate feedback was offered to the resident by the simulated patient. A debriefing also occurred with a faculty member who reviewed each resident’s recorded performance and discussed it with him or her. Residents and faculty from this institution felt that the quick feedback was valuable and should be implemented into the residency curriculum.17

Another study evaluated a boot camp, which was found to be helpful to assess ICS and professionalism, and the authors reported that residents’ performance in these CCs improved following immediate debriefing.18 The last study discussed the importance of timely feedback on ICS, which was provided to trainees following an airway foreign body course. In this case, residents felt that the feedback not only helped with the ICS skill but also improved interactions with other specialties.19

Specificity

Of the 4 articles that describe specificity, 3 were prospective studies, 1 was retrospective, and all were single-institution studies. The first, by Zirkle et al, was a prospective study that used simulation to teach airway management and provide specific feedback following each scenario.15 The end of each scenario included a debriefing period to engage the residents regarding feedback for each task, describe ICS and professionalism objectives to be mastered by the end of the session, and then assess for completion. The authors reported that there was successive improvement in performance as residents worked their way through the scenarios. A 3-station OSCE based on hoarseness showed that providing clearly defined objectives could uncover deficits in encounters between residents and patients.20 A prospective study measured the ability of the residents to recognize “good” and “bad” behavior focusing on ICS and professionalism after viewing video lectures of doctor and patient communication during grand round sessions. Two sets of videos showed common “good” and “bad” behavior in the surgical setting. Following the sessions, the residents were able to provide factors contributing to these positive and negative interactions and reported feeling proficient in recognizing these factors, although direct feedback was not provided to the residents.21 Roark et al created an assessment tool to evaluate resident ICS and professionalism skills, which was completed by faculty, resident peers, and nonphysician professionals.22 Specific and direct feedback was provided, and these authors demonstrated an improvement in both CCs over the course of the study. These 3 studies also found that by identifying techniques to improve skills, it was easier to create action plans and provide specific feedback.15,21,22

Balance of Reinforcing and Corrective Feedback

Two articles described a balance of reinforcing and corrective feedback. Both these studies were prospective and from a single institution. The first, by Franzese et al, addressed the use of balancing reinforcing and corrective feedback in discussions of clinical scenarios; however, this study did not comment on whether it affected how the feedback was perceived.17 In the second study, Zirkle et al noted that active efforts to balance positive and critical feedback for residents and medical students ensured that psychological safety for the trainee was achieved.15 The trainees reflected that they felt that this safe environment decreased the chance of a defensive response, which greatly facilitated learning and self-evaluation.

Learner Reaction and Reflection

Four articles addressed reactions and reflections: 2 were prospective studies, 1 was a survey, and 1 was a retrospective study. Three were from single institutions, while 1 was multi-institutional.

In a single-institution prospective study, Zirkle et al reported that a nonconfrontational open approach of active listening and reflection encouraged the residents to explore the clinical scenario and understand their role in the contribution to the positive or negative outcomes.15 Residents who were able to react and reflect on feedback in a “safe” atmosphere were able to learn from their mistakes. Some residents even recognized their ineffective communication patterns when they reviewed their performance on video.15 In a multi-institution survey, Gurgel et al were the first to describe the use and utility of an educational portfolio in otolaryngology training programs.16 They noted that this learning tool allowed for self-reflection and enabled the residents to track experiences and share their insights for further discussion with the faculty, which resulted in real-time formal feedback.16 A prospective study of emotional intelligence training in an otolaryngology training program encouraged residents to think out loud and reflect on their actions during debriefing sessions following simulation cases, which they reported resulted in a positive improvement in behavior and thought process for decision making.23

Action Plan

Three articles clearly described actions plans as a key component of feedback: 1 was a prospective study, 1 was retrospective study, and 1 was a survey. In the first study, a video training module at a single institution was used to address training in ICS and professionalism. Patki and Puscas reported that that residents felt that they were able to identify “bad” behavior in initial scenarios and adjust their action plan, which resulted in feelings of proficiency following the subsequent clinical scenarios.21 In the second study, a prospective simulation case series, the authors reported that action plans were better enforced after debriefing occurred following a simulation session.15 During the debriefing, the facilitators tried to ensure that the participants’ reactions, understanding, and plan for improvement were addressed, and they practiced “action-science” methods, where the facilitator attempted to get the participants to appreciate how their thinking drove them to take certain actions.15 To evaluate current action plans for problematic residents, a survey of 106 program directors found that early identification of problematic residents and a standardized remediation plan were necessary for improvement of
performance. The authors recommended that resident and fellow feedback should start from the status point at the time of the last feedback meeting and that the action plans created at those meetings should be used to review and promote improvement in performance.\textsuperscript{14}

**Discussion**

Our systematic review identified 18 articles focused on ICS and professionalism in studies of otolaryngology resident education that discussed feedback. All of these reflect on the experience of training programs in the United States, except for 1 (Canada). In addition, the majority of these studies were from a single institution, and only 1 included all 5 components of effective feedback. Timeliness was the feedback component addressed most commonly, while balancing positive and negative feedback and the use of action plans were least frequently discussed. The level of evidence was low (<3) for 83\% of the included studies. These findings are in alignment with the ACGME perception that these 2 components are the most commonly neglected in residency training programs.\textsuperscript{1} However, these findings suggest that research regarding the incorporation of feedback into otolaryngologic training is limited.

Feedback is an essential element of assessment, and its importance is recognized by the ACGME, which has described feedback as one of the most effective educational tools to help residents and fellows improve performance.\textsuperscript{1} Its utility in identifying strengths and areas for improvements is a critical component of milestone attainment. For this reason, the ACGME recommends feedback with a mandate to ensure that formative feedback is high quality and remains timely, specific, and focused on the criteria that the learner is expected to attain. Moreover, ideal feedback should be seen as information exchanged between trusting allies (faculty and trainees) who are working together toward performance improvement.

Our findings that timeliness was the most commonly reported component of high-quality feedback discussed in the otolaryngology resident education literature is in keeping with previous literature. Timeliness has also been found to be the most commonly performed component of high-quality feedback in other specialties (eg, pediatrics) and has been studied in specialty curricula for neurosurgery, orthopedic surgery, and anesthesia, where feedback was provided in real-time clinical settings.\textsuperscript{24-27} In the case of the orthopedic surgeons, researchers created brief web-based evaluations that allowed for formative feedback and could be completed on a daily basis at the end of 1 or 2 cases each day.\textsuperscript{28} Although it has been shown that timeliness is essential to high-quality feedback, research in medical education has demonstrated that patient care responsibilities by faculty may delay feedback,\textsuperscript{28} a practical consideration that was not addressed by any of the 5 studies on this topic in this review.

Experts report that the most effective feedback is clearly stated, reinforces what has been done well, identifies what can be improved, and includes strategies for improvement. While specificity was infrequently reported in the otolaryngology literature, this component has been commonly described in the graduate medical education literature, and it has been documented as an important feature of feedback in other surgical specialties.\textsuperscript{27,29,30} For example, neurosurgeons have created onboarding boot camps intended for all first-year neurosurgery residents, which include online course, lectures, simulations, and skill laboratories; they have also incorporated direct feedback into these courses and provided multisource formative and summative evaluations of each resident, which they found to be more specific and objective than traditional feedback methods.\textsuperscript{27}

The balance of reinforcing and corrective feedback has been found to be more effective and is currently recommended as more favorable than the classic “feedback sandwich,” where the teacher provides the learner with positive feedback before and after negative feedback.\textsuperscript{31} This technique is favored because the sandwich technique has been found to dilute the main message, as the trainee may recognize only the positive feedback being provided.\textsuperscript{31} This technique was infrequently discussed in the otolaryngology literature despite that fact that both studies utilizing this method reported improvement in resident performance. Neither of these studies compared this method with the feedback sandwich, so a direct comparison of methods was not able to be assessed. The ADAPT method of feedback, which is recommended by the ACGME, also utilizes this method for feedback.

A portfolio is a collection of materials that show reflective learning in the context of clinical practice. It contains documents such as patient cases, images, and video recordings that demonstrate that a resident has acquired a fundamental skill.\textsuperscript{32,33} Portfolios have been described as a way to promote self-reflection and reaction in medical education and are reported to be a reliable tool for feedback. Studies from numerous specialties, including otolaryngology, have indicated that portfolios are useful to promote resident self-reflection.\textsuperscript{32,33} In addition, they have reported that by providing the opportunity for the resident to react and reflect on feedback, they were able to garner increased resident buy-in and facilitate the formulation of action plans.\textsuperscript{34} Because action plans require the integration of the other 4 components to be optimally carried out, their incorporation into resident feedback can be harder to describe, which could explain why this is one of the least commonly described components of feedback both in our search and in the broader medical education literature.\textsuperscript{34,35}

The ACGME suggests 2 models for feedback: the ADAPT feedback model and the R2C2 facilitative feedback model. The ADAPT feedback model builds on the principles of the ATA (ask, tell, ask) communication skills model to help faculty enhance medical students’ reflection and self-assessment skills.\textsuperscript{1} This model incorporates trainees’ objectives and is adaptable to provide feedback in a variety of settings, as it incorporates the trainee’s goals.\textsuperscript{1,33} The R2C2 model is a 4-phase facilitated feedback model that is based on 4 steps—build a relationship, explore reactions,
explore content, and coach for performance change. Its main goal is to empower trainees to take ownership of their performance as well as responsibility for formation of their action plans. None of the articles in our review utilized either of these feedback models, nor have there been any published data from other specialties that utilize these models. We suggest that the fact that these methods have only recently been developed may account for the lack of use by educators (despite being potentially knowledge based) and the dearth of literature in this area. There are not enough data to know if these models will prove to be useful in surgical specialties; however, the ATA model has been used by 1 surgical training program. In its adaptation of the model, the trainee is asked to identify an objective to work on (eg, patient interaction in clinic). The trainer provides focused feedback for the trainee and then checks the trainee’s understanding and discusses plan for improvement.

Additional evaluations of multisource performance data (competencies) have identified multisource feedback (MSF), also known as 360° feedback, and recommended its utility in resident assessment. Studies have shown that MSF can contribute to the development of behavior in more intangible domains of competence, such as ICS and professionalism, and has been used to reliably evaluate these CCs among residents in nonotolaryngology specialties. These studies also note that feedback from multiple people interacting with residents in different capacities can provide a more comprehensive perspective of the resident’s performance than that obtained by a single evaluator.

Sargaent et al noted that MSF is not an appropriate tool to provide information regarding clinical outcomes but is effective in providing reliable information about ICS, professionalism, and teamwork. In our review, the use of MSF was described only once, by although it was recommended by 3 sets of authors. Roark et al were the only ones in our review to evaluate performance using the MSF approach. When evaluating the CCs outside of professionalism and ICS, they created evaluation forms based on knowledge, skills, and behaviors, to be completed by multiple members of the team to provide various perspectives of trainee performance. For evaluation of professionalism and ICS, a different form was used. For example, a 10-item Likert scale was used by patients to see if “the resident shows interest in you as a person, not acting bored or ignoring what you have to say.”

Our review has a number of limitations. The infrequency of articles focusing on professionalism and ICS in otolaryngology makes generalizability difficult. Additionally, there was significant heterogeneity in study design within this group of articles, making comparisons among programs problematic. Moreover, most articles described feedback; however, these descriptions were not directly related back to the reviewed CCs. Last, publication bias was noted in this systematic review, as most outcomes were positive. Despite these limitations, this systematic review is the first to provide a synthesis and evaluation of literature regarding components of high-quality feedback in professionalism and ICS in otolaryngology resident education. This study reinforces the fact that more study is necessary to determine how best to incorporate feedback in otolaryngology resident training programs. We suggest that future research focus on the incorporation of all 5 elements of effective feedback in surgical settings and should trial the ADAPT and R2C2 methods. Ideally, these studies will involve multiple institutions and residents with varying levels of experience.

Conclusion

Feedback is an essential component of graduate medical education and is required by the ACGME milestones assessment system. However, the core feedback components and feedback models recommended by the ACGME are rarely included in the otolaryngology resident education literature aimed at assessing ICS and professionalism. This review demonstrates the need for formalized inclusion of feedback in otolaryngology resident and fellow training in ACGME programs.

Author Contributions

Eryrne A. Faucett, design of the work, collection of data, drafting the work, final approval, agreement to be accountable; Hilary C. McCrany, analysis of data, drafting the work, final approval, agreement to be accountable; Jonnae Y. Barry, collection of data, drafting the work, final approval, agreement to be accountable; Ahlam S. Salah, design of the work, revising work critically, final approval, agreement to be accountable; Audrey B. Erman, analysis of data, revising work critically, final approval, agreement to be accountable; Stacey L. Ishman, design of the work, drafting the work, revising work critically, final approval, agreement to be accountable.

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Supplemental Material

Additional supporting information is available in the online version of the article.

References


