

Development of a Comprehensive Communication Skills Curriculum for Pediatrics Residents

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ABSTRACT

Background Effective communication is an essential element of medical care and a priority of medical education. Specific interventions to teach communication skills are at the discretion of individual residency programs.

Objective We developed the Resident Communication Skills Curriculum (RCSC), a formal curriculum designed to teach trainees the communication skills essential for high-quality practice.

Methods A multidisciplinary working group contributed to the development of the RCSC, guided by an institutional needs assessment, literature review, and the Accreditation Council for Graduate Medical Education core competencies. The result was a cohesive curriculum that incorporates didactic, role play, and real-life experiences over the course of the entire training period. Methods to assess curricular outcomes included self-reporting, surveys, and periodic faculty evaluations of the residents.

Results Curricular components have been highly rated by residents (3.95–3.97 based on a 4-point Likert scale), and residents' self-reported communication skills demonstrated an improvement over the course of residency in the domains of requesting a consultation, providing effective handoffs, handling conflict, and having difficult conversations (intern median 3.0, graduate median 4.0 based on a 5-point Likert scale, $P \leq .002$). Faculty evaluations of residents have also demonstrated improvement over time (intern median 3.0, graduate median 4.5 based on a 5-point Likert scale, $P < .001$).

Conclusions A comprehensive, integrated communication skills curriculum for pediatrics residents was implemented, with a multistep evaluative process showing improvement in skills over the course of the residency program. Positive resident evaluations and informal comments from faculty support its general acceptance. The use of existing resources makes this curriculum feasible.

Introduction

Effective communication is an essential component of high-quality medical care.^{1–4} This includes the ability to interact with patients, families, and members of the health care team. Communication skills can improve treatment adherence, increase patient satisfaction, and reduce medical errors.^{2,5} In 1999, the Accreditation Council for Graduate Medical Education (ACGME)⁶ approved requirements for all residency programs that mandated residents achieve competency in interpersonal and communication skills. Equipping young physicians with the skills to build relationships with patients and families and to work effectively in a team is a priority for all training programs. Yet educational initiatives that help trainees achieve competency are challenging, and they remain the responsibility of local institutions without a standardized implementation model.⁷

Existing models of communication curricula at the residency level are varied in philosophy, but generally are categorized by pedagogical approach (skills based^{4,8} or humanistic^{9,10}); content (fundamental tasks such as basic patient interviewing^{11,12} or advanced encounters

such as delivering bad news^{10,13}); and interaction focus (clinician–patient/family most often^{8,12,13} or less commonly intraprofessional^{14,15}). Additionally, curricula are distinguished by learning technique (role play,^{8,16} standardized patients,^{17–19} or real-life experiences^{12,15}). The majority of curricula occur singularly^{20,21} or at discrete intervals.²² Full integration with assessment, experiential learning, and multiple communication domains have been cited as markers of a fully mature communication curriculum,¹ yet examples are rare.^{23,24}

Similar to other programs, our institution offered only a singular, stand-alone course in communication, centered around delivering bad news.²¹ Our objective was to develop a curriculum that would teach trainees the complex communication skills necessary for high-quality practice by incorporating the strengths of existing models into a comprehensive, integrated curriculum. The result, the Resident Communications Skills Curriculum (RCSC), was novel in its inclusion of all the following: basic and complex communication tasks, intraprofessional and physician–patient/family communication, experiential learning in the form of simulated and real-life experiences, skills-based and humanistic methods of teaching, and full longitudinal integration within the pediatric training curricula (FIGURE 1).

DOI: <http://dx.doi.org/10.4300/JGME-D-15-00485.1>

Methods

Phase 1: Faculty Working Group and Needs Assessment

Our institution is a university-based, 267-bed, free-standing children's hospital with more than 175 faculty pediatricians and pediatric subspecialists, as well as 21 to 23 categorical pediatrics and 5 combined internal medicine–pediatrics residents per year. A working group of 10 volunteers expressing an interest in communication education, including 6 faculty physicians (from the divisions of critical care and general inpatient medicine, 1 of whom possessed an advance degree in adult education), the residency program coordinator (who possessed an advanced degree in communications), a professor from the school of education, and a hospital chaplain. Three members of the working group created an institutional needs assessment that was distributed anonymously online (SurveyMonkey, Palo Alto, CA) to residents, faculty physicians, nurses, and support staff (social workers, chaplains, and case managers). This survey asked respondents to rate the skill of trainees (or themselves, if they were current residents) on 4 aspects of family and intraprofessional communication. A comment box was provided for narrative responses, which were then examined by the working group and, through active discussion, used to shape curricular content.

Phase 2: Curriculum Goals and Objectives, Content, and Instructional Theory

Goals and objectives for the RCSC evolved from an iterative process of roundtable discussions with members of the working group. Themes emerging from the

What was known and gap

Communication is a core competency that is not systematically taught in many residency programs.

What is new

A pediatrics program developed a formal, longitudinal communication curriculum and assessed its impact.

Limitations

Single institution study, small effect indices, and survey instrument without validity evidence.

Bottom line

The curriculum was well accepted, improved communication skills, and was feasible due to its use of existing resources.

needs assessment included a desire on the part of residents, faculty, nurses, and support staff for education in professional communication, difficult conversations, and transmission of critical medical information. These themes were incorporated into the RCSC goals and objectives, which were drafted and compared with those of the ACGME to ensure adequate representation of core competencies (TABLE 1).

The instructional framework underpinning physician–patient/family communication was built on the Kalamazoo Consensus Statement.²⁵ Intraprofessional communication content was guided by a literature review.^{26–34} Educational experiences used to teach core content were chosen based on those supported in the education literature and included didactic lectures, small group discussions, self-reflection, role play, and simulated and real-life experiences.

The instructional theory underpinning the RCSC was the desire to create a cohesive educational experience integrated throughout the training years. The resulting curriculum was temporally structured

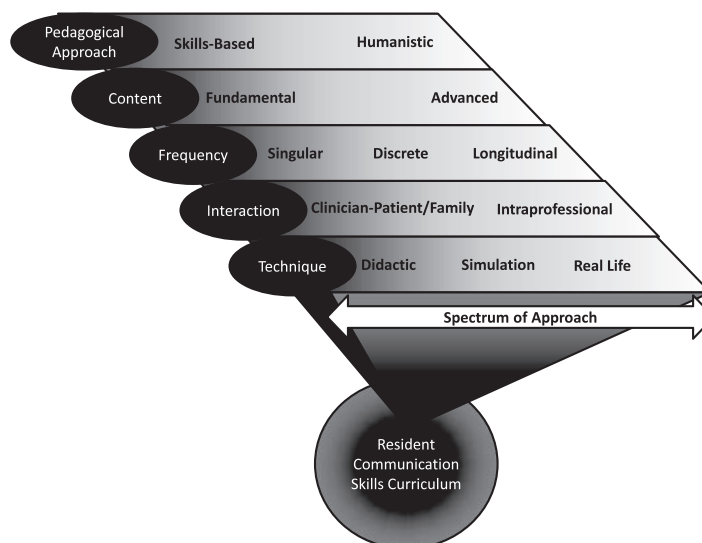


FIGURE 1

Educational Philosophies Incorporated in the Resident Communication Skills Curriculum

TABLE 1

Comparison of Resident Communication Skills Curriculum (RCSC) Articulated Goals and Objectives With Accreditation Council for Graduate Medical Education (ACGME) Subcompetencies for Interpersonal and Communication Skills^{6,35}

ACGME Subcompetencies for Interpersonal and Communication Skills (ICS)	Institution-Specific Educational Objectives of the RCSC
• Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds (ICS-1) • Demonstrate the insight and understanding into emotion and human response to emotion that allow one to appropriately develop and manage human emotions (ICS-2) • Communicate effectively with physicians, other health professionals, and health-related agencies • Work effectively as a member of a health care team or other professional group • Act in a consultative role to other physicians and health professionals	• Provide effective and culturally/educationally/developmentally appropriate information for patients and families • Appraise the conversation to confirm that information has been accurately transferred (check the understanding of the recipient) • Identify communication techniques in professional conversations that demonstrate professionalism, compassion, and the transfer of critical patient information • While demonstrating professionalism, the trainee will recognize ineffective communication from other members of the health care team and demonstrate the ability to redirect the exchange to facilitate effective information transfer • Demonstrate the ability to effectively transfer patient information between providers and between different levels of care (handoffs) • Differentiate effective from ineffective communication in handoffs, notes, and other forms of information transfer • Employ effective phone etiquette in professional communication • Formulate plans for conflict resolution between health care team and patients/families

so that residents progress through a period of skills acquisition, skills practice, and then real-life application (FIGURE 2).

Phase 3: Implementation

Core communication topics (FIGURE 2) were taught monthly during noon conferences on an 18-month rolling cycle. Postgraduate year (PGY) 2 and PGY-3 residents participated in a 2.5-hour simulated experience with standardized patients.²¹ Residents on the general inpatient service were observed giving patient handoffs quarterly during PGY-1 and annually during PGY-2 and PGY-3. Additionally, observed clinical encounters (OCEs) occurred during all training years in which residents were observed communicating with patients and families and then provided feedback and evaluation from faculty physicians. Feasibility estimates have been provided (TABLE 2).

Phase 4: Evaluation

Residents evaluated the curricular components of the RCSC for quality and impact, including all core topic noon conferences and the simulated experience. Residents also evaluated their own communication skills through 2 processes. During the simulated experience, preintervention and postintervention self-perceptions of preparedness, confidence, anxiety level, and skill were rated and assessed for change.

Residents were surveyed at the beginning of their intern year and again at graduation to rate their skills at specific communication competencies.

Faculty evaluated the communication skills of residents through several processes. Verbal handoffs were observed using a checklist, and residents were required to achieve proficiency in verbal handoffs, defined as achieving a minimum score on a standardized checklist, or undergo remediation consisting of 1-on-1 feedback with faculty and repeated observations until proficiency was achieved. Next, residents received annual OCE evaluations using the Gap-Kalamazoo Communications Skills Assessment Form.^{3,36} Finally, residents were assessed biannually by the Clinical Competency Committee (CCC), an 18-member multidisciplinary cohort of faculty physicians that reviews rotation-specific evaluations to generate competency scores in accordance with the Pediatrics Milestone Project.³⁵ The Pediatrics Milestones include interpersonal and communication skills (ICS-1 and ICS-2; TABLE 1), which were assessed for change over the course of training.

The RCSC was reviewed and exempted by the Institutional Review Board at the University of Louisville.

Analysis

Descriptive statistics were used to summarize survey results. Comparison of preintervention and post-

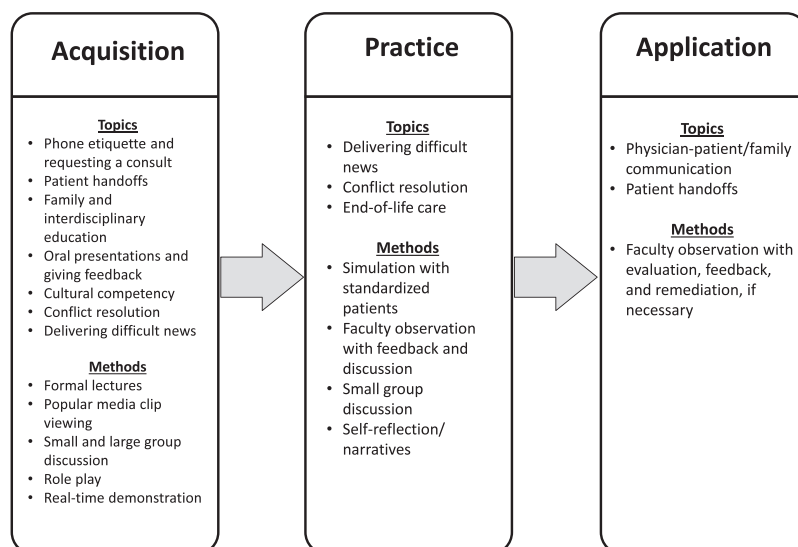


FIGURE 2
Resident Communication Skills Curriculum Topics and Methodologies

intervention scores for the simulated experience were OCEs, CCC scores, and intern/graduate survey analyzed using Wilcoxon signed rank test for paired comparisons was conducted using the Mann-Whitney samples. Analysis of the needs assessment survey, test for nonparametric independent samples. Data

TABLE 2
Feasibility Information for Implementation of the Resident Communication Skills Curriculum (RCSC)

Category	Discussion	Cost
Time	All faculty were voluntary At our institution, the majority of faculty have a percentage of work assignments dedicated to teaching; volunteer faculty chose to allocate teaching time to RCSC Median faculty time based on 1.0 FTE was less than 1% (median 4.5 h/y with range 2–52 h/y) ^a	Estimated attributable cost based on average salary for assistant professor: \$10,800 (\$1,800 × 6 core faculty)
Equipment/materials	Audiovisual equipment for video viewing, recording, and playback for the simulated portion of the curriculum	High-cost option: \$23,250 (Includes hardwired patient and conference rooms with audiovisual- and DVD-recording capability) Low-cost option: \$1,350 (Includes camcorder, video projector, coaxial cables, and screen)
	Video camera to create patient scenarios and faculty examples	\$400
	Videos from Initiative for Pediatric Palliative Care and Center for Applied Ethics and Professional Practice, Education Development Center Inc (Newton, MA) used for small group discussion	\$400
Personnel/skills	Faculty with teaching interest	As described above
	Faculty training	Airfare, travel accommodations, and fee for 3 faculty to attend educational session on teaching difficult conversations: \$4,000
	Standardized patients	\$25/h per SP + 17% administrative fee
	Estimated annual operating costs	\$12,555 (with paid faculty) or \$1,755 (without additional paid faculty)

Abbreviations: FTE, full-time equivalent; SP, standardized patient.

^a The development phase of the curriculum was more time intensive. Time and cost estimates are based on implementation phase.

TABLE 3

Comparison of Residents' Median Self-Perception of Skill Before and After Participating in the Curriculum

Communication Topic	Skill Before, Median (IQR) (N = 67)	Skill After, Median (IQR) (N = 48)	Significance, P Value
Requesting a specialty consult	3.0 (1.0)	4.0 (1.0)	< .001
Providing patient handoffs	3.0 (1.0)	4.0 (1.0)	.002
Conflict resolution	3.0 (1.0)	4.0 (1.0)	< .001
Difficult conversations/bad news	3.0 (1.0)	4.0 (1.0)	< .001

Abbreviation: IQR, interquartile ratio.

were analyzed using SPSS version 22 (IBM Corp, Armonk, NY).

Results

The RCSC was implemented during the 2011–2012 academic year. Since its inception, approximately 150 residents have participated in the RCSC. Due to the complexity of the evaluative strategy of this curriculum, data were collected from residents in different phases of the educational process (for example, all residents participated in OCEs, but only PGY-2s and PGY-3s participated in the simulated experience), resulting in different available sample sizes for the various analyses. All available data were analyzed to avoid sample bias, and sample size information has been included in the corresponding results section.

Phase 1: Needs Assessment Results

A total of 651 needs assessments were distributed, and the needs assessment response rate was 212 (33%), with 45 (49%) resident and 167 (30%) nonresident (faculty physicians, nurses, social workers, chaplains, and case managers) respondents. Residents perceived greater skill in communicating with families, other physicians, nurses, and support staff than did nonresidents (resident median 4.0, nonresident median 3.0 based on 4-point Likert scale: 1, poor; 2, fair; 3, good; and 4, very good; $P < .001$). Narrative comments from respondents reflected a desire for more education in the areas of intraprofessional and family communication.

Phase 2: Evaluative Results

Average quality ratings of core lectures in the communication curriculum were positive, ranging from 3.95 to 3.97 (on a 4-point Likert scale: 1, poor; 2, fair; 3, good; and 4, excellent) for organization, content, material, length, and overall quality. Simulated sessions received a ratings average between 4.54 and 4.87 (on a 5-point Likert scale: 1, poor; 2, fair; 3, good; 4, very good; and 5, excellent) for organization, content, realism, length, debriefing, and overall quality. The simulated component of the RCSC

resulted in significant changes in residents' self-evaluation of their preparedness, confidence, anxiety, and skill from presimulation to postsimulation ($N = 88$; premedian 4.0, 3.0, 4.0, 4.0 versus postmedian 4.0, 4.0, 4.0, 4.0, respectively; $P \leq .032$).

Comparison of survey results between interns ($N = 67$) and graduating residents ($N = 48$) demonstrated a significant change in their self-perception of skill when requesting a consultation, providing effective handoffs, handling conflict, and during difficult conversations (premedian 3.0, postmedian 4.0 for all domains based on a 5-point Likert scale: 1, poor; 2, fair; 3, good; 4, very good; and 5, excellent; $P \leq .002$; TABLE 3). Of graduate respondents, 78% (35 of 45) agreed or strongly agreed their practice had changed and 84% (38 of 45) felt they provided better care as a result of the RCSC. Of graduating residents, 76% (34 of 45) could recall a specific time during residency when they applied the principles learned in the RCSC. Faculty evaluation of resident communication skill showed that, on average, 1 resident per year (3.6% to 3.8%, based on varying class size of 26 to 28 residents) did not achieve proficiency in verbal handoffs and had to undergo remediation.

Residents received an OCE score based on average scores across the 9 domains on the Gap-Kalamazoo Communications Skills Assessment Form.³⁶ Comparison of median OCE scores demonstrated a statistically significant increase when comparing PGY-1 ($N = 64$) with PGY-3 ($N = 43$) scores (4.2 versus 4.8, $P = .002$), but not when comparing PGY-1 with PGY-2 ($N = 42$; 4.2 versus 4.77; $P = .84$) or PGY-2 with PGY-3 scores (4.7 versus 4.8, $P = .78$). Median CCC scores demonstrated a significant improvement in comparison between initial score (obtained in the first half of the intern year, $N = 42$) and final score (obtained in the last half of PGY-3, $N = 43$), with initial median 3.0 versus final median 4.5 based on a 5-point scale with rubric provided by the ACGME/American Board of Pediatrics³⁵ ($P < .001$; TABLE 4).

Discussion

Our comprehensive, longitudinal, communication skills curriculum resulted in small improvements in

TABLE 4

Comparison of Residents' Initial and Final Median Pediatric Milestone Scores

Communication Domain	Initial, Median (IQR) (N = 42)	Final, Median (IQR) (N = 43)	Significance, P Value
ICS-1	3.0 (0.5)	4.5 (1.0)	< .001
ICS-2	3.0 (0.5)	4.5 (1.0)	< .001

Abbreviations: ICS, interpersonal and communication skills; IQR, interquartile ratio.

Note: Scores based on a 5-point scale with rubric provided by the Accreditation Council for Graduate Medical Education/American Board of Pediatrics.³⁵

residents' self-perception of skill for a variety of communication domains, and at graduation the majority of residents could recall a specific time when they applied these skills. Faculty ratings of residents showed a small improvement in communication skills.

In contrast to many existing communication curricula, a longitudinal approach with full integration and multiple assessment modalities allowed the demonstration of improvement in communication skills over the course of the training period. This curriculum was not unique in the demonstration of improvement in self-perceptions of skills preintervention and postintervention.

Our institution was fortunate to have key elements available (faculty interest, standardized patient program, audiovisual equipment) to support the implementation of this curriculum with few additional resources. This may not prove feasible in all programs (feasibility estimate is provided in TABLE 2). The time commitment for core faculty was intensive during the development phase, but lessened during the implementation phase. Faculty enthusiasm has been sustained.

The conclusions drawn from our educational innovation are limited by several factors. We reported on a single institution's experience, and evaluation of curricular outcome is limited by resident self-report scores and surveys without validity evidence. The inclusion of nursing and patient/family feedback would be of additional value. Although statistical significance was reached for many outcomes, effect sizes were notably small. Finally, the study lacked a comparison group. Definitive attribution of positive outcomes to the RCSC is not possible with the data available. Future research directions include a qualitative analysis of resident survey free-text comments, and the inclusion of recent graduates in the assessment of the curriculum as it relates to independent practice.

Conclusion

The development and implementation of a formal communication curriculum proved feasible and addressed an educational gap at our institution. The curriculum was met with positive feedback and

improved residents' perception of skill. The educational philosophy and approach to implementation could be adapted to meet the needs of other residency programs.

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Funding: Funding for the simulated portion of the Resident Communication Skills Curriculum (RCSC) was initially provided by the Kosair Charities Community Trust Fund Fellows Research Grant. The purchase of audiovisual equipment used in the simulated portion of the RCSC was obtained through grant funding from the Children's Hospital Foundation. Funding to purchase videos from the Initiative for Pediatric Palliative Care for use during the video-based portion of the RCSC was obtained through a grant from Northwestern Mutual and Harding, Shymanski & Company, PSC.

Conflict of interest: The authors declare they have no competing interests.

The authors would like to thank Karen Hughes Miller, PhD, for her assistance in instructional design and assessment, and Rev. Skye Murray, MDiv, BCC, for her contribution to curriculum conceptualization and development. The authors also would like to thank the University of Louisville Standardized Patient Program for the provision of standardized patients for the simulated component of the RCSC.

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Received September 25, 2015; revisions received March 10, 2016, and June 27, 2016; accepted June 27, 2016.