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Patient- and Family-Centered Care in the Preoperative Setting: Simulation Cases Featuring Standardized Patients for Anesthesia Residents

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Abstract

Introduction: Evidence links patient-centered care to improvements in allocation of health care resources, patient satisfaction, chronic disease self-management, morbidity, and mortality. Support from families, too, can improve patients' health and well-being. However, patient- and family-centered care (PFCC) in the preoperative setting is challenging due to short-term relationships with patients, time constraints, and lack of training. **Methods:** This module uses simulations with standardized patients. Groups of residents are divided into pairs, and each resident in a pair alternately participates in, or observes via live camera feed, a simulation case. The pair participates in both debriefing sessions. Two simulation cases are run. The first features a Jehovah's Witness who wants lifesaving blood but does not want her accompanying daughter to know. Despite excruciating pain, analgesia is being withheld because surgery consent has not been obtained. The second features a patient with HIV who does not want her accompanying pastor to know. The operating room nurse calls for a resident to bring her to surgery, but the patient wants to talk to her mother, who has yet to arrive. The purpose of the curriculum is for anesthesia residents to apply PFCC when having difficult preoperative conversations with patients and their families and obtaining anesthesia consent. **Results:** Participants rated the training environment, faculty, debriefing, clinical application, and contribution of standardized patients highly. Participants' perceived self-efficacy for each core principle of PFCC improved postsimulation compared to presimulation. **Discussion:** We believe this curriculum can contribute to improvement in PFCC and subsequent improvement in the quality and safety of health care.

Keywords

Anesthesia, Simulation, Anesthesiology, Patient Simulation, Patient-Centered Care, Perioperative Care

Educational Objectives

By the end of this module, the learner will be able to:

1. Apply core concepts of patient- and family-centered care.
2. Appropriately obtain informed consent for general anesthesia.
3. Apply situational awareness during interactions with patients and families.
4. Adhere to ethical principles during interactions with patients and families.

Introduction

Respectful partnerships between patients and health care professionals build trust, promote unrestrained communication, and improve outcomes. Evidence links patient-centered care to improvements in allocation of health care resources, patient and family satisfaction, chronic disease self-management, morbidity, and mortality.¹⁻³ Support from social networks and families, too, has a considerable impact on the health and well-being of patients. Core concepts established by the Institute of Patient- and Family-Centered Care are treating people with respect and dignity, complete and unbiased information sharing, participation in care and decision making, and system-wide collaboration, including professional education.⁴ The Institute of Medicine, Institute for Healthcare Improvement, National Patient Safety Foundation, Joint Commission, and American Hospital Association each uphold patient- and family-centered care (PFCC).⁵⁻⁹

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Appendices

- A. Simulation Case HIV Positive Patient.docx
- B. Simulation Case Jehovah's Witness.docx
- C. Information Given for HIV Positive Patient.docx
- D. Information Given for Jehovah's Witness.docx
- E. PFCC Presentation.pptx
- F. Pre- and Postsimulation Self-Efficacy Questionnaire .docx
- G. Anesthesia Consent Form .pdf
- H. Checklist for Faculty Standardized Patients.docx
- I. Postsimulation Participant Evaluation.docx
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- M. Feedback Form for Debriefing Facilitators.docx

All appendices are peer reviewed as integral parts of the Original Publication.

However, fostering PFCC in the preoperative setting is challenging for physicians due to relatively short-term relationships with patients, time constraints on the day of surgery, and lack of training in PFCC. Indeed, an anesthesiology faculty member observed resident physicians inadequately applying the core concepts of PFCC in the preoperative setting. The residents often improperly introduced themselves, conveyed information poorly by using medical jargon, or provided patients and families with inadequate opportunities to participate in shared decision making. In particular, the residents struggled when discussing difficult topics with patients in the presence of their family members or social networks. Such informal observations that arise from mentoring and interactions with the clinical team are potentially as important as formal needs assessment.¹⁰ Furthermore, the Anesthesiology Milestone Project includes relevant milestones for professionalism, interpersonal and communication skills, patient care, and practice-based learning and improvement.¹¹

Thus, we assessed available educational resources for preoperative conversations and obtaining informed consent with learning objectives for applying PFCC concepts. A search of MedEdPORTAL revealed related educational interventions, including addressing an anesthesia milestone via a simulation on communicating an apology, a simulation that promoted empathy by placing the learners as patients who go through an emergency cesarean section drill, and a workshop about patient-centered care.¹²⁻¹⁴ However, none addressed our specific concerns.

We developed a curriculum in which the principle activities are two simulations featuring standardized patients. A prerequisite to participating in the simulations is listening to a brief presentation on the core concepts of PFCC. This presentation addresses foundational learning objectives for knowledge and comprehension. Active learning via the simulations then addresses higher-level learning objectives for application, analysis, and synthesis through immersion in a case followed by reflection during debriefing sessions.¹⁵ The purpose of the curriculum is for anesthesia residents to achieve learning objectives focused on applying the core concepts of PFCC when having difficult preoperative conversations with patients and their families and obtaining informed consent on the day of surgery. The module also addresses milestones previously identified by the Anesthesiology Milestone Project.

Methods

We used simulation as the primary educational method (Appendices A & C). The context for implementation is an academic health science center with simulation expertise and an existing standardized patient program. Because the learning objectives are focused on PFCC, we used standardized patients and family members in the simulation cases. Use of standardized patients can be an effective way to promote learning, particularly for interpersonal interactions.¹⁶

Over 2 years, 28 residents participated, with 14 residents per year. Each year, we split the 14 residents into two groups. Each group participated on separate days. At the beginning of each day, a faculty member provided a 20-minute slide presentation (Appendix E) to all residents in the group. We then divided the group into pairs and scheduled each pair to be in the Simulation Center for 90 minutes. At the beginning and conclusion of the 90-minute session, the pair of residents completed pre-and postsimulation questionnaires (Appendix F) to elicit their level of confidence in their ability to fulfill the PFCC core competencies. Prior to beginning the simulations, the pair had an opportunity to review a brief information sheet (Appendices B & D) about the simulated patient. Each member of the pair alternately participated in, or observed via live camera feed, a simulation case. The resident immersed in the case was given an anesthesia consent form to complete during the encounter (Appendix G). Both residents participated in both postcase debriefing sessions. For each simulation case, a faculty member, the observing resident, and a standardized patient completed a performance checklist (Appendix H). After the two simulations and debriefing sessions, participants completed an evaluation (Appendix I). The course director also completed an evaluation (Appendix J).

The time frame for each pair of residents was as follows:

- PFCC slide presentation (all residents collectively): 20 minutes.
- Presimulation survey and precase briefing of cases: 5 minutes.
- Case 1 simulation: 20 minutes.
- Case 1 debriefing: 20 minutes.
- Case 2 simulation: 20 minutes.
- Case 2 debriefing: 20 minutes.
- Postsimulation survey and conclusion: 5 minutes.

Target Audience

The target audience is anesthesia residents, preferably, early in postgraduate year 1 or 2. The target audience should have the following prerequisites: introductory/intermediate-level communication skills, basic understanding of informed consent, basic knowledge of risks associated with general anesthesia and surgical procedures, and exposure to issues of culturally responsive care and diversity. We conduct the simulations during the introductory month to the operating room for the postgraduate year 2 anesthesiology (clinical anesthesia—year 1) residents.

Equipment/Environment

The environment is a simulated preoperative room. The room requires a hospital bed with pillows and sheets, as well as two chairs (one for a family member and one for the resident).

Personnel

The course director should be a staff anesthesiology physician with experience in preoperative conversations and obtaining informed consent. If the course director lacks experience in facilitative debriefing, a debriefing facilitator with such experience is needed. For each simulation, the following personnel are needed:

- HIV positive patient simulation:
 - Young adult female to play the role of the patient scheduled to have a hysterectomy.
 - Adult male to play the role of the patient's pastor.
 - Anesthesia faculty member to role-play an operating room nurse who calls into the preoperative room to encourage the resident to bring the patient to the operating room.
 - PFCC staff to serve as PFCC content experts in debriefing when available.
- Jehovah's Witness patient simulation:
 - Older adult female to play the role of the patient scheduled to have a hip replacement.
 - Younger adult female to play the role of the patient's daughter.
 - Debriefing facilitator can also serve as the nurse who briefly goes into the preoperative room to advise the resident that pain medication is being withheld because consent for surgery has not yet been obtained.
 - PFCC staff to serve as PFCC content experts in debriefing when available.

The standardized patients may need training in providing feedback to participants. The standardized patient training form (Appendix K) can be used in this situation.

Assessment

A nine-item questionnaire (using a 7-point Likert scale) with qualitative questions elicited the participants' evaluation of the sessions. The course director also completed a 13-item questionnaire (using a 7-point Likert scale) with qualitative questions as well. For each case, we examined the participants' perceived self-efficacy by asking them to rate their confidence on a scale from 0 to 100.¹⁷

Debriefing

After each simulation case, each pair of residents participated in a debriefing session. A Simulation Center staff member served as the debriefing facilitator, while the course director served as the content expert. The standardized patients participated in each debriefing session and offered an analysis of the resident's focus on PFCC. In the first debriefing sessions, staff from our Center for Patient- and Family-Centered Care participated in the discussion. Their contributions were sustained in subsequent sessions by the course director. We conducted the sessions in a room specifically designed for debriefing. Each debriefing lasted approximately 20 minutes. To standardize the conversation structure in the debriefing sessions, the facilitator used a guide (Appendix L) based on a recent review of best practices in debriefing.¹⁸ For new debriefing facilitators, feedback from an experienced facilitator may be helpful (Appendix M). Brief segments of the videotaped simulation were used to augment the discussion of key learning objectives.

Results

In 2015 and 2016, all 28 residents completed the activity. At the beginning of their first year of clinical anesthesia, they completed this activity as part of their orientation to participating in perioperative care. Twenty-five of the 28 residents who participated completed evaluations of the educational activities. They rated the training environment, faculty, debriefing, clinical application, and contribution of the standardized patients highly (Table 1).

Table 1. Learners' Evaluations (N = 11)

Item	M ^a	SD
The orientation to the simulation was adequate.	6.9	.3
The learning environment felt safe for an engaging educational experience.	6.9	.3
The Instructor was interested in the learner's success.	7.0	0
The debriefing was organized.	6.8	.6
The debriefing provoked me to reflect on my performance.	6.8	.6
What I learned will help me in clinical practice.	6.7	.5
The simulated case seemed realistic.	6.9	.3
The Simulation Center was equipped adequately.	7.0	0
Standardized participants were credible in their role (patient, family, nurse).	7.0	0
Standardized participants gave helpful feedback.	6.7	.7

^aSeven-point Likert scale. A different evaluation tool was used in one cohort.

Additionally, we examined the participants' perceived self-efficacy for each of the core concepts of PFCC. The results demonstrate that the participants' perceived self-efficacy significantly improved postsimulation compared to presimulation. For three of the four concepts of PFCC, the magnitude of the improvement was large (Table 2).

Table 2. Self-Efficacy: Patient- and Family-Centered Care Concepts (N = 25)

Concept	Presimulation		Postsimulation		Difference		
	M ^a	SD	M ^a	SD	M	95% CI	p
Treating patients with dignity and respect.	91	12	96	7	5	2-8	.001
Providing information to patients and families.	69	14	86	9	17	12-23	<.001
Facilitating participation by patients and families.	69	17	88	10	19	13-24	<.001
Collaborating with patients and families in a partnership.	73	16	90	10	17	11-22	<.001

^aScale = 0-100.

The residents' qualitative comments about parts of the training that were exceptional demonstrated the value of realistic, relevant cases, the quality of the standardized patients, and the debriefing.

- "The acting, cases, and debriefing helped me analyze and adjust the style with which I interact with patients and their families."

- “The organized debriefing discussion was very helpful.”
- “Simulated patients were particularly good, very realistic, and provided incredible feedback.”
- “Realistic cases and patient interactions were exceptional.”
- “Being accountable for our actions during the simulation was great.”

Only one resident offered a suggestion for improving the training. The suggestion was to offer the training earlier, at the beginning of the residents’ intern year.

Representative comments about the impact of the simulations on the residents’ PFCC focus included the following:

- “Be patient and respectful. Take time to allow patient to speak.”
- “I am more aware of unexpected situations entirely plausible in the real world.”
- “Be more mindful of patient’s situation.”
- “Be compassionate.”

Discussion

Using simulation with standardized patients offers several benefits. It allows residents opportunities for deliberate practice applying their knowledge about PFCC in a safe setting and receiving immediate feedback from standardized patients, peers, expert faculty members, and even patient- and family-care experts.¹⁹ At our institution, we have a relatively large anesthesia residency program, with 14 new residents each year. Therefore, the design is relatively time intensive, requiring 2 full days each year. Smaller programs could complete this activity in 1 day. We based the curriculum and cases on the core concepts of PFCC and real-world cases meant to challenge the learners in a safe environment.

The evaluation demonstrated that participation in the simulation was associated with an improvement in the residents’ perceived self-efficacy to perform core concepts of PFCC. The residents rated the activity highly, and the qualitative comments demonstrated an understanding of PFCC. Subsequently, anecdotal direct observation by the faculty of the residents’ preoperative interviews revealed an improvement in professional communication and rapport with patients and families. We believe the results successfully addressed the problem of residents struggling to engage in a preoperative conversation with patients and families and obtaining informed consent.

This resource is adaptable and relevant across various clinical settings and surgical specialties. This type of training is generally absent from residency programs. However, the American Board for Anesthesiology will soon require a high-stakes objective structured clinical examination (OSCE) for attainment of licensure.²⁰ Prominent among the competencies tested in the OSCE will be communication with patients.

The most significant insights gained are the previous lack of training in PFCC and obtaining informed consent in the preoperative setting and the degree to which this activity improved the residents’ confidence and performance. Further development of these simulation cases, as well as development of new simulation cases, should help to prepare residents for the American Board for Anesthesiology OSCE. Future opportunities include modifying the cases to offer the training to other medical disciplines.

Potential limitations at some institutions might include deficiencies in the quality of standardized patients, in training (specifically training in PFCC), and in experience or training in facilitative debriefing. The makeup of the debriefing team could have an effect on the outcome. However, a variety of debriefing methods could be effective.¹⁸ Protection of faculty time to make their involvement in the activities possible is the largest challenge. Depending on when this activity is implemented in the residency program, protected time for the residents could also be a challenge.

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Ethical Approval

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