Utilization of Family as Faculty: A Patient Directed Simulation Education to Improve Patient and Family Communication during Patient-Family Centered Rounds (PFCR)

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Introduction: Patient-family-centered care (PFCC) is based on the understanding that the family is the child's source of strength and support. Effective communication between families and providers is an essential component of PFCC. Our interprofessional team designed an initiative to improve medical providers' communication in partnership with the Patient and Family Advisory Council (PFAC). Strategies included the creation of a competency rubric and simulation curriculum using the family as faculty. The SMART aim was to improve the percentage of respondents who answered “Always” to doctor communication domains from 72% to 75.6% in Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) by December 2020.

Methods: Pediatric residents, medical students, faculty, nurses, and PFAC members formed a Quality Improvement (QI) team to address PFCR competency. The team created a PFCC checklist to address competency. PFAC volunteers served as standardized parents in an in situ simulation of PFCR scenarios involving interprofessional in-patient teams. Evaluators observed rounds for the pre and postintervention assessment using the checklist. The outcome measure was the percentage of respondents who answered “Always” in the HCAHPS domain for physician communication. The process measure was the PFCR pre and postintervention, using Fisher’s exact test for analysis.

Results: Using a statistical process chart (SPC), HCAHPS data from 2018 to 2020 showed that we exceeded our aim of >5% increase in the physician communication performance. Pre-post intervention data showed improvement in PFCR competency.

Conclusion: Family as faculty simulation led to improved physician communication, translating to improved performance in the HCAHPS score and PFCR competency communication domains. (Pediatr Qual Saf 2022;7:e551; doi: 10.1097/pq9.0000000000000551; Published online June 14, 2022.)

INTRODUCTION

Patients and families are vital partners in health care, and their involvement is key to optimizing health outcomes. Patient-family-centered care (PFCC) principles are grounded on a symbiotic relationship between healthcare providers and consumers, for all ages, at all levels of care, and across different healthcare settings. In pediatrics, PFCC is based on the understanding that the family is the child’s primary source of strength and support and that the child’s and family’s perspectives and information are important in clinical decision-making.1

In 2003, the American Academy of Pediatrics (AAP) incorporated FCC into multiple policy statements and affirmed FCC as the standard of health care for all children. The AAP recommended that “conducting attending physician rounds (ie, patient presentations and rounds discussions) in the patients’ rooms with the family present should be the standard practice.” Family presence alone is considered insufficient, as family members must participate in the discussion and decision-making. At its best, the presence and participation of families promote the PFCC principles of information sharing, partnership, collaboration, and negotiation.1,2

Before the AAP recommendations, most hospitals, including ours, conducted teaching rounds outside of...
the patient’s room. Even when clinicians conducted rounds at the bedside, patients and families often failed to participate and engage in the discussion. Since most decisions about patient care were made during rounds, the patient and family’s points of view and preference were often left out.3

The AAP promotes PFCR as a daily practice.4 Pediatric departments and hospitals across the United States have adopted PFCR.5–7 Studies suggest that parents prefer decision-making with the medical team.8–10 Medical staff report a greater sense of teamwork, which results in a better understanding of patients’ medical plans and ability to help the family.11,12 PFCR positively impacts family stress, communication with staff, and attitude toward the patient.13

At the start of 2018, a review of the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) data for the Children’s Medical Center revealed that the physician communication domain in our program was at 72%. In addition, observation of bedside rounds in our general pediatric unit identified no standard process for engaging families during FCR leading to potential communication failures affecting patient outcomes and patient and family satisfaction.

Despite the adoption of PFCR14–16 by most pediatric hospitals, the components that influence effective communication during PFCR vary across institutions. Although various published PFCR tool kits include checklists15 and providers self-assessment17 on patient- and family-centered communication skills, these tools do not include behavioral anchors of skill and behavior that can be used for direct observation and feedback of performance of the PFCR elements.

A publication from Burt et al.17 on “The evaluation of physician’s communication skills from multiple perspectives” described a disconnect between patients’ assessment of effective physician communication and physicians’ self-assessment of their skills. In addition, a qualitative study from two children’s hospitals on pediatric residents’ perspectives on PFCR by Mittal et al.18 concluded that expanding residents’ evaluation to include parents enhances information gathered on residents’ communication skills.

Simulation-based medical training has been integrated into graduate medical education programs to provide a safe environment for learners.19 Learner outcomes are improved at the bedside, particularly when feedback is provided on performance.20 Considering this, we designed a simulation-based intervention to include family members as faculty to improve physicians’ communication skills.

The SMART aim of this initiative was to improve the percentage of respondents who answered “always” to doctor communication domains by 5% on the HCAHPS survey for the in-patient pediatric unit from 72% to 75.6% within 2 years from 2018 to 2020 using a Family as Faculty program in situ simulation of PFCR. Key strategies included designing a reliable competency rubric that supports patients and families’ active participation and designing a simulation-based intervention that utilizes family as faculty to improve PFCR competencies.

METHODS

Our team designed a Quality Improvement (QI) project in a single-center, University-based pediatric residency program involving pediatric house staff, pediatric hospitalists, nurses, and Patient and Family Advisory Council (PFAC) members beginning January 2018. The Children’s Medical Center has had an existing PFAC for over 10 years.

The Children’s Medical Center has a diverse patient population, representing different ethnicities and socio-economic groups. In the presence of a non-English speaking patient and family, we utilize an interpreter service for communication. The Department of Pediatrics adopted PFCR in the 40-bed in-patient general pediatric and ICU units in 2014 with no standardized training for house staff. Nurses introduce the PFCR concept to the family and patient during admission as an invitation to PFCR and nursing participation in PFCR. Almost 60-70% of patients and families on the primary hospitalist service participate in PFCR.

QI Timeline

In the first three quarters of 2018, the team focused on defining baseline data, analyzing the current state, and planning for the in-situ simulation. The planning phase included the creation of a PFCR brochure both in English and Spanish, giving information to the patient and family on the purpose of PFCR distributed during admission (Fig. 1).

The QI Team Developed a Key Driver for the Project

The pediatric faculty, PFAC, pediatric house staff, and simulation center staff represented an interprofessional QI team that developed the key driver (Fig. 2) and PFCR checklist using references from other children’s hospitals.21–23 The QI team identified clear communication domains between medical staff and patients and families that applied to our clinical setting and practice. In addition, the team identified six competencies (Table 1):

1. Greeted and introduced the primary care team.
2. Established partnership with the family.
3. Explained the medical condition in plain language.
4. Family given opportunity to ask questions.
5. Communication model of partnership.
6. Included and Engaged Nursing (Table 1).

We established the checklist’s interrater reliability (IRR) during in-patient bedside rounds. First, three evaluators,
including a medical student, pediatric house staff, and faculty, were trained to use the PFCR checklist, followed by a direct observation of the providers during in-patient PFCR. Finally, evaluators utilized the checklist to evaluate the team performance. Each evaluator submitted 14 direct observations for data analysis.

The QI team designed two cases, a 4-week-old infant with fever and a 7-year-old child with asthma. In addition, four PFAC members volunteered their time to be trained by simulation center staff as standardized patients. Their role in the scenario was that of the parent of a sick child who needs extensive care. They received case materials, including a patient profile and several challenge questions—the training involved using the PFCR checklist as a guide for debriefing. PFAC members recruited for the in situ simulation have unique experiences in the healthcare system and were encouraged to share their experiences with the care team as part of the debrief.

During the fourth quarter of 2018, in situ simulation started on the general pediatric in-patient unit. The care team, composed of two interns, one or two juniors, and one or two senior house staff, rotated every four weeks with an attending hospitalist and the general pediatric in-patient unit nursing staff. In addition, four evaluators composed of fourth-year medical students and chief residents were trained through direct observation and videos using the PFCR checklist. The QI team targeted 36 pediatric house staff members, six attending hospitalists, and pediatric nursing staff for intervention. Almost 100% of house staff and 22% of nursing staff participated in twelve simulation interventions.

**Project: Improving Providers Communication to Patient and Family Using In Situ Simulation**

**KEY DRIVERS**
- Physician Engagement
- Interprofessional team Engagement
- Patient as Faculty program
- Patient and Family Engagement

**INTerventions**
- Develop Patient Family centered rounds (PFCR) Competencies
- PFCR In Situ Simulation
- Monitor PFCR competencies on rounds
- Train PFAC as Standardized patient and faculty for in situ simulation
- Hardware discussion of competencies during debrief
- Focus group discussions to share and discuss lessons learned
- Develop Teen as Faculty
- Distribution of Spanish & English PFCR brochure during admission
- Encourage participation in PFCR
- Encourage HCAPHS survey completion

**Fig. 1.** Project timeline.

**Fig. 2.** Key driver diagram.
The in situ simulation intervention occurred during the second week of the house staff’s 4-week in-patient rotation. A PFAC member served as a standardized patient using one of the two cases to simulate the PFRC encounter with the care team (hospitalist faculty, pediatric house staff, and a nurse). The nursing supervisor identified an empty room for the simulation training. Staff placed a mannequin in the bed with the PFAC faculty member positioned at the bedside, awaiting the entry of the care team. Once the care team arrived, the intern initiated patient and family-centered rounds. The simulation faculty observed the simulated PFRC and initiated debriefing guided by the PFRC checklist, then debriefed with the PFAC faculty.

Data collection by evaluators involved observations of the care team composed of pediatric house staff, a hospitalist, and nursing staff during actual bedside rounds before and after the in-situ simulation using the PFRC checklist. Also, two evaluators joined general pediatric in-patient bedside PFRC as direct observers during the first 2 weeks of the in-patient rotation to collect the preintervention data, followed by observation of general pediatric in-patient bedside PFRC in the last 2 weeks of the rotation to collect postintervention data.

The program embedded PFRC communication competency during the intern’s communication and skills boot camp and faculty development for the hospitalists group due to a review of preliminary data and recommendations by PFAC.

**Measures**
The Primary Outcome Measure is the percentage of respondents who answered “Always” in the HCAPHS domain for physician communication with family. The process measure is the preintervention and postintervention data using the percent “achieved” for each PFRC competency. Each competency is rated as “Not achieved,” “Partially achieved,” or “Achieved.” Percent achieved was defined as: “Percent (%) Achieved” for each FCR competency domain = the number of Competencies “Achieved” observations/the total number of observations.

**Analysis**
We analyzed the primary outcome measure using a statistical process control chart using quarterly data from 2018 to 2020.

The process measure was analyzed preintervention and postintervention for each competency during the active intervention period from Q4 2018 to Q4 2019. The Fisher’s exact test was used to compare the results preintervention and postintervention for the intervention data. Results are presented as bar charts preintervention and postintervention. A result was considered statistically significant at the *P* < 0.05 level of significance. We performed data analyses using Microsoft Excel 2016 (Microsoft Corporation), AgreeStat version 2015.6.1 (Advanced Analytics, Gaithersburg, Md.), and SAS version 9.4 (SAS Institute Inc., Cary, N.C.).

**Ethical Considerations**
The NYU Long Island School of Medicine IRB granted an exemption to this project as a QI intervention.

**RESULTS**
There was a statistical improvement in four of six competencies after the intervention. However, there was no significant difference for the following competencies: “Given opportunity to ask questions” and “Communication model of partnership” (Fig. 3).

The primary outcome measure on Patient Experience of Care in Physician communication with family as measured by HCAPHS improved from a baseline of 72% in 2018 to 82.2% in 2019 and 82% in 2020 (Fig. 4). The

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**Table 1. Patient-family-centered Competency Checklist**

| Competency | Not Achieved | Partially Achieved | Achieved |
|------------|--------------|--------------------|----------|
| Greeted patient and caregiver and introduced the primary team | Did not introduce the primary team | Greeted patients and caregiver but did not do complete introduction | Greeted patients and caregiver and introduced the primary team |
| Established partnership with family in the beginning by stating the purpose of family-centered rounds | Did not state the purpose of family rounds | Explained partially the purpose of rounds | Established partnership by stating the purpose of rounds and inviting family’s input |
| Explained the medical condition and care plan in simple language and terms family can understand | Used medical jargon to explain medical condition and care plan | Clarified unknown terms | Used clear and appropriate language to enhance understanding |
| The family was given opportunity to ask questions and understanding of the care plan was confirmed with the family | The team did not confirm family’s understanding or ask if they had any questions | The family was asked if they had any questions but there was no confirmation of the family’s understanding | Family was given opportunity to confirm understanding and ask clarifying questions about the plan |
| Communication skills were used support a model of partnership: | Model of partnership not developed using verbal and nonverbal communication skills | One or more communication behavior skills did not support the model of partnership | Both verbal and nonverbal communication skills supported a model of partnership |
| • Eye contact | | | |
| • Body language | | | |
| • Tone of voice | | | |
| • Nonjudgmental phrases | | | |
| Included and engaged nursing and other staff on rounds | Did not include | Answered Nurse or staff questions | Asked input from interprofessional team |

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control chart demonstrates more than eight data points above the baseline, representing a signal for a centerline shift applying Shewhart rules for the statistical process control chart.

DISCUSSION
A review of quarterly HCAHPS from 2018 to 2020 showed that we exceeded our smart aim of achieving “Always” in doctor communication domains by >5% within two fiscal years using our intervention. We achieved a centerline shift from 72% to 82%. This change represents greater than 10% improvement over 2 years for our primary outcome measure. A study in 2015 on measuring HCAPHS score improvement showed that an increase of 2.8% in a category over 3 years was considered an improvement. Using the Shewhart control chart rule, we noted a centerline shift suggesting that our results were not random variation effects. This sustained improvement corresponded to the implementation of PFCR in situ simulation training. Although other parallel initiatives target patient experience, this intervention directly focuses on improving providers’ communication.

For the process measure, the preintervention and postintervention data (Fig. 3) showed that most competency domains improved with the intervention. The competency communication model of partnership did not reach statistical significance; however, this competency represented
the highest value (88.9%) at baseline, suggesting proficiency in this competency area before the intervention.

The component “Family given opportunity to ask questions” did not reach statistical significance. To fully achieve “given opportunity to ask questions,” residents had to incorporate teach-back into the discussion. Although it is an effective form of provider-patient communication for enhancing patient understanding and improving outcomes, teach-back is considered a challenging aspect of communication that physicians have not widely adopted and may require specific training.

The incorporation of the family as faculty has been described in medical education for experiential learning, particularly related to children with chronic diseases, to teach family-centered care. Learners gained valuable lessons from the family members and built skills in communication, listening, professionalism, and empathy, all of which are necessary components for doctoring. We designed a QI project using parents as standardized patients during in situ simulation to integrate realism into the encounter and incorporate concrete feedback from the parent’s perspective during debriefing, which is a critical component of this educational process.

**Limitations**

We identified several study limitations. First, our trained evaluator’s educational and clinical responsibilities impacted their availability to gather data during PFCR and simulation, limiting the number of observations. Second, nursing participation in the simulation was sparse due to workflow issues that affected participation during PFCR. In addition, other collaborative interventions were in place to improve patient and family experience, which may contribute to improving our HCAHPS scores. Finally, a single institution setting with a small-to-medium-sized program may limit generalizability.

Another limitation is the Hawthorne effect modifying the behavior of residents on patient and family-centered rounds in the presence of observers. We were unable to assess skill retention due to modifications in rounding during the COVID-19 pandemic. No formal presurveys and postsurveys assessed the impact of using these standard PFCR communication competencies on workflow and the impression of the simulation training on trainees.

A review of HCAHPS data revealed no improvement in the domain of communication “MD communicate with a Child.” The house staff did not have an opportunity to practice communication skills with a child or a teen standardized teen patient in a clinical encounter, representing opportunities for future interventions.

**CONCLUSIONS**

Incorporating family as faculty in in situ simulation improved our providers’ communication in PFCC competency and Patient and Family Experience as represented in the HCAHPS score.

This intervention focused on communication with parents as standardized patients. A review of our HCAHPS data on the “MD communicate with a Child” domain showed no improvement. Our next step is to develop in situ simulation using child and standardized adolescent patients, targeting competency related to communication with this patient population.

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**DISCLOSURE**

The authors have no financial interest to declare in relation to the content of this article.

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