

Patient-Centered Collaborative Care: The Impact of a New Approach to Postpartum Rounds on Residents' Perception of Their Work Environment

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Abstract

Objective At our institution, traditional postpartum rounds consisted of separate visits from all members of the obstetric team. This led to patient care inefficiencies and miscommunication. In an effort to improve patient care, patient-centered collaborative care (PCCC) was established, whereby physicians, residents, medical students, nurses, case managers, and social workers conduct rounds as a team. The goal of this observational study was to evaluate how PCCC rounds affected resident physicians' assessment of their work environment.

Methods Obstetrics and gynecology residents completed a 13-question written survey designed to assess their sense of workflow, education, and workplace cohesion. Surveys were completed before and 6 months after the implementation of PCCC. Responses were compared in aggregate for preintervention and postintervention with Pearson χ^2 test.

Results Ninety-two percent of the obstetrics residents ($n = 23$) completed the preintervention survey, and 79% ($n = 19$) completed the postintervention survey. For most measures, there was no difference in resident perception between the 2 time points. After implementation of PCCC rounds, fewer residents felt that rounds were educational (preintervention = 39%, postintervention = 7%; $P = .03$).

Conclusion Residents did not report negative impacts on workflow, cohesion, or general well-being after the implementation of PCCC rounds. However, there was a perception that PCCC rounds negatively impacted the educational value of postpartum rounds. This information will help identify ways to improve the resident physician experience in the obstetric service while optimizing patient care.

Introduction

Typical inpatient postpartum rounds at a teaching hospital involve several independent visits by nurses, medical students, residents, and attending physicians. An increased focus on safety, patient-centered care, and satisfaction has led to innovations in the approach to inpatient rounds.¹ One such innovation is the development of interdisciplinary rounds, which involves learners of all levels as well as other important hospital staff involved in regular patient care. Interdisciplinary

rounding formats have been shown to successfully reduce costs, shorten hospital stays, and facilitate the implementation of standardized disease-specific protocols.^{2,3}

Most literature on interdisciplinary rounds points toward a benefit for physicians, physician learners, and patients in the assessment of care as well as objective measures for improved care. Studies addressing the educational merits of interdisciplinary rounds are rare. One such study observed whether patients and physician learners preferred bedside case presentations versus hallway or conference room presentations. Most patients preferred bedside presentations (85%), but most physician learners and students preferred presentations away from the bedside (95%).⁴ Two studies by the same group^{5,6} demonstrated that patients preferred to be included in the conversations about their care.

Few studies have evaluated the effect of bedside presentation or interdisciplinary rounds on physicians, particularly residents. One study, which compared communication between nurses and physicians for interdisciplinary rounds and traditional rounds, demonstrated a significantly improved impression of communication with interdisciplinary rounds between physicians and nurses, particularly for residents.⁷ Though no significant improvement in the impression of

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communication between physicians and nurses was demonstrated in this study, the time interval between implementation of PCCC rounds and the follow-up survey was relatively short and there were no specific survey questions regarding communication.

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Our institution is an academic tertiary care facility, where residents on the obstetric service participate in the antepartum and postpartum care of women for approximately 250 deliveries per month. Traditional postpartum rounds consisted of serial patient visits by various levels of medical students, residents, and faculty, which would begin at 5:00 AM. Management plans were often deferred until the patients' condition was presented in a group setting with the attending physician, charge nurse, social worker, and case manager.

In the traditional system, rounds were inefficient and required duplication of patient evaluation. Patient satisfaction was low, with multiple provider visits and a nonuniform or delayed plan, as demonstrated by postdischarge patient satisfaction surveys. The time constraints on resident responsibilities left little time to complete discharge paperwork, resulting in later discharge time. Lastly, the traditional rounding format did not account for the time needed for the attending physician to see each of the postpartum patients. On busy labor and delivery days, some patients would not be seen by the attending physician until late in the afternoon, which significantly delayed care plans or discharge.

Because medical students, interns, and off-service residents were not observed during their patient interactions, it was difficult to teach them about the normal postpartum examination and counseling and to give them feedback about their patient interactions. However, these experiences are necessary under educational objectives developed by the Accreditation Council for Graduate Medical Education (ACGME) in 1999. The ACGME core competencies include patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. These are areas that residency programs have been responsible for evaluating since 2002.⁸

Because of these concerns, a new patient-centered collaborative care (PCCC) rounds format was developed and implemented in September 2007. Resident physicians were surveyed to determine the impact of PCCC rounds on assessment of their work environment. The measures of interest in the survey were questions related to workflow, education, and workplace cohesion.

Methods

The patient-centered collaborative care team at our institution consists of the patient and family, an on-coming

or off-going nurse, the nurse case manager, social worker, medical student, obstetrics-gynecology resident, obstetrics-gynecology intern or off-service intern, attending physician, mobile computer, and Spanish translator or phone translator if necessary.

All obstetrics and gynecology residents who would have the opportunity to work on the obstetric service, both before and after implementation of PCCC rounds, were eligible to complete a written survey. A record was kept of residents who had completed the surveys, to prevent duplication. These residents were then asked to complete an identical survey after the PCCC rounding system had been in place for 6 months. To enable honest responses, the surveys were not identifiable by resident. Therefore, it was not possible to perform paired comparisons. The survey included 13 statements about workplace cohesion, work satisfaction, and education with 5-point Likert scale responses (1 = strongly disagree, 2 = disagree, 3 = ambivalent, 4 = agree, or 5 = strongly agree) and space for narrative comments. For example, "I feel good about being on the OB team." The postintervention survey also included 3 questions about whether workplace interactions had changed since implementation of PCCC rounds.

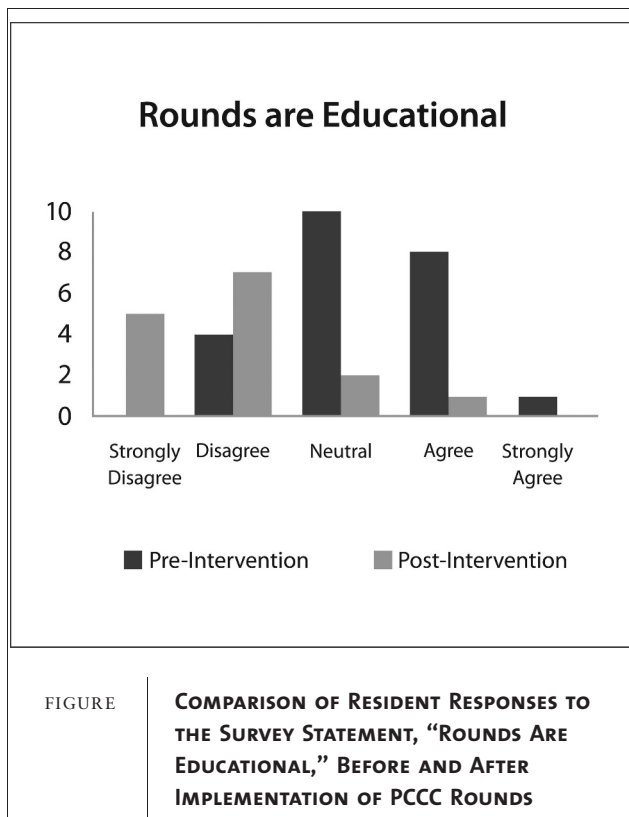
Comparing the percentage of residents who agreed to statements about their work environment (agree, strongly agree) for traditional rounds against those for PCCC rounds was the primary outcome. Respondents were separated into 2 groups by those who agreed or strongly agreed and were compared to those who responded that they were ambivalent, disagreed, or strongly disagreed for each survey question.

Statistical analysis included descriptive statistics and Pearson χ^2 tests for categorical variables, with a level of significance of $P < .05$. All analyses were conducted with Statistical Package for the Social Sciences (SPSS, version 14.0 for Windows, Chicago, IL). This study was approved by the Oregon Health & Science University Institutional Review Board.

Results

Twenty-three of 25 eligible residents (92%) completed the pre-PCCC survey, and 19 of 22 eligible residents (86%) completed the post-PCCC survey. One resident was not eligible for the pre-PCCC survey because of no prior experience with our traditional rounds. Four residents were not eligible for the post-PCCC survey: 2 because of lack of experience with PCCC rounds and 2 because they had left the program. All completed surveys were included in the analysis, regardless of whether a resident had completed both surveys.

For most statements in the survey, resident responses did not change significantly between traditional rounds and PCCC rounds. However, fewer residents agreed with the statement "rounds are educational" after implementation of PCCC rounds. Thirty-nine percent of residents agreed with



this statement during traditional rounds, as compared to 7% for PCCC rounds, $P = .03$ (FIGURE).

The shift in rounding paradigms had no effect on residents' positive perceptions of workplace cohesion. The TABLE shows that after the introduction of PCCC rounds, residents continued to feel valued by the obstetric team or patient, feel respected, have a sense of cohesion and team spirit, have a good relationship with the nurses, and feel good about being a member of the obstetric team.

Similarly, the change to the PCCC rounding system had no effect on residents' negative perceptions regarding patient care and workflow. The survey revealed that residents feel rushed during rounds, and that there is an unequal burden on provider responsibility. Many residents also reported feeling that patient care was compromised with the PCCC rounds, compared to the traditional rounds (20% versus 9%, $P = .31$). However, this was not statistically significant and would require further investigation, as the response rate was lower for the postintervention survey.

Not surprisingly, residents reported a decrease in the number of nursing calls regarding patient care after the implementation of PCCC rounds. During traditional rounds, 48% of residents thought there were 10 or more calls per day about patient care, as compared to 13% after implementation of PCCC rounds ($P = .03$).

Discussion

In our institution, the introduction of PCCC for postpartum rounds has required adjustments in workflow for all members of the care team. While the underlying premise of the PCCC system was to improve patient care and satisfaction, our survey was designed to anonymously assess the impact of PCCC on the resident providers' perception of workflow, education, and workplace cohesion. The major finding of this study is that resident perception of the educational value of postpartum rounds decreased with the implementation of PCCC rounds.

On traditional rounds, case-based teaching occurred in a large group setting away from the patient rooms after the patients had been seen by residents. Medical students presented the patients' condition and residents were called on to devise a patient plan or educate the group about a particular disease entity. Often the faculty would discuss a treatment plan in depth, providing alternative strategies and lively debate over disagreements. In contrast, on PCCC rounds, the medical student presents the patient's condition outside the patient room, and case-based teaching occurs there, in a small group setting as time allows. Because of the increased amount of time needed for PCCC rounds, there is less time available for traditional case-based resident education for each patient, and residents are exposed to management discussions for fewer overall patients.

However, the PCCC rounds format does allow faculty to witness resident interactions with patients and, therefore, to provide more directed teaching and feedback about physical examination findings, and postpartum and follow-up care. Attending physicians have commented that this is their only current format to witness resident interactions with inpatients. The PCCC rounds have been able to address the ACGME core competencies' goals of professionalism and communication skills.

The impression of a negative impact on resident education conveyed by this survey reflects the changing expectations for learners in the current medical education environment. The expectation for resident learners has historically been that they be able to understand the disease entity, clinical assessment, treatment, and long-term management. However, residents have not always been challenged to communicate the assessment and plan to the patient and have not always been the ones to answer difficult patient questions, particularly in situations of uncertainty. In the PCCC rounds format, residents can be assessed while performing this skill in a supportive environment in which the attending physician can reinforce a consistent message to the patient.

Residents were previously accustomed to a larger group format of formal presentation, with group decision-making, during which they could absorb a large amount of information about all patients. However, the final decisions for treatment plans were often made later in the day, after the patient was seen by the attending physician, and the

TABLE COMPARISON OF RESIDENT RESPONSES TO SURVEY QUESTIONS BETWEEN TRADITIONAL AND PCCC ROUNDS

Survey Question	Survey Type	Disagree or Ambivalent		Agree		χ^2
		n	%	n	%	P value
Common sense of purpose	Traditional	10	44	13	57	.85
	PCCC rounds	7	47	8	53	
I feel valued by OB team	Traditional	7	30	16	70	.85
	PCCC rounds	5	33	10	67	
All providers listen actively	Traditional	13	57	10	44	.32
	PCCC rounds	6	40	9	60	
All providers share responsibility	Traditional	17	74	6	26	.75
	PCCC rounds	11	79	3	21	
I understand the problem-solving process	Traditional	4	17	19	83	.84
	PCCC rounds	3	20	12	80	
I feel respected	Traditional	7	30	16	70	.80
	PCCC rounds	4	27	11	73	
I feel good about being an OB team member	Traditional	4	18	18	82	.24
	PCCC rounds	5	36	9	64	
OB team has a sense of cohesion and team spirit	Traditional	9	39	14	61	.72
	PCCC rounds	5	33	10	67	
I have a good relationship with the nurses	Traditional	10	44	13	57	.53
	PCCC rounds	5	33	10	67	
I feel valued by the patients	Traditional	5	22	18	78	.23
	PCCC rounds	6	40	9	60	
Rounds are educational	Traditional	14	61	9	39	.03 ^a
	PCCC rounds	14	93	1	7	
I feel rushed during rounds	Traditional	5	23	17	77	.78
	PCCC rounds	4	27	11	73	
Patient care is compromised in the current system	Traditional	21	91	2	9	.31
	PCCC rounds	12	80	3	20	

Abbreviations: OB, obstetric; PCCC, patient-centered collaborative care.

^a statistically significant at $p < 0.05$.

reasoning for decisions was not always discussed. Our former case-based didactic teaching still continues, but on a smaller scale, whereby each resident conducts rounds for about half the patients, but is more responsible for understanding the patient characteristics and creating a plan from start to finish. Residents are more hurried during PCCC rounds, so the perception is that there is less time for learning. But by explaining the plan to each patient at the bedside, learners are creating a context for the case, which is much easier to commit to memory.

Rounds in a multidisciplinary format have provided residents more insight into the roles of case management and social work in postpartum care. Screening for

postpartum depression and evaluation of insurance coverage for contraception has been streamlined into the PCCC rounding format. Resident participation in multidisciplinary case management fulfills the systems-based practice and practice-based learning goals of the ACGME core competencies.

Most residents agreed that workplace cohesion exists, and this was not negatively impacted by PCCC rounds. Before PCCC rounds, residents rarely interacted with nurses directly to discuss the patient care plan at the beginning of the shift. Instead, residents were frequently called by nursing staff during the day to clarify a plan and to answer questions about orders. The relationship between residents and nursing staff

has improved now that more residents know the nurses by name and interact directly with them on rounds.

This study was limited by the number of residents involved and the inability to track an individual's change in response over time. Some of the survey questions were vague in their description of the "obstetrics team" and may have been misinterpreted by the residents as the current resident obstetric team rather than the interdisciplinary team. Furthermore, the time lapse from the beginning of implementation of PCCC rounds to the follow-up survey was 6 months, but schedule adjustments had been ongoing during that period. This may have impacted residents differently throughout the implementation period and may have changed their survey responses.

Areas for further investigation include objective assessment of the number of calls to residents by nursing before and after implementation of PCCC rounds. The survey demonstrated an impression of decreased volume of pages from nursing to residents regarding questions about patient care, and it would be interesting to assess paging volume during that time. Additionally, some concerns were raised about areas of improvement for patient safety and satisfaction because of negative resident responses to statements about patient care on the postpartum ward.

Finally, use of the interdisciplinary model as a platform for formal resident assessment of ACGME core competencies should be pursued.

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