

## Resident Perception of Obstetrical Hospitalists as Parturient Care Providers and Educators

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### ABSTRACT

**Background:** By 2014, there were more than 1,700 Obstetrician Gynecologic (OB/GYN) hospitalists working at more than 243 hospitals in the United States, representing approximately 10% of hospitals offering maternity care. There is a paucity of data assessing the impact of the hospitalist care model on house staff education and delivery of patient care.

**Objective:** The goal of this study is to assess parameters surrounding the educational experience of OB/GYN residents while being supervised on Labor and Delivery by attendings from each of the Department's Divisions.

**Methods:** A Likert scale survey was developed and distributed to determine residents' perceptions of 4 quality metrics (quality of patient care, teaching, professional relationships, and resident autonomy) amongst department provider groups: Generalists, Hospitalists, Family Planning, Maternal-Fetal-Medicine, and Gynecology Oncology.

STATA MP 10 was used to analyze data. As a function of attending provider group, questions were analyzed individually using Fisher Exact test. Questions were grouped by quality metric and analyzed using the Student t test. P-value <0.05 was considered statistically significant.

**Results:** A 100% response rate (N = 28) yielded three statistically significant metrics for the Hospitalist group: 'quality of patient care'  $20.5 \pm 0.94$  ( $p=0.003$ ), 'teaching'  $26.6 \pm 0.89$  ( $p<0.001$ ), and 'professional relationships'  $25.7 \pm 1.5$  ( $p<0.001$ ). The Hospitalist providers scored significantly higher in resident teaching, mean score  $26.6 \pm 0.89$  ( $p<0.008$ ).

**Conclusion:** These results help demonstrate the positive impact the OB/GYN hospitalist role has on house staff experiences and its potential in academic medicine.

### Keywords

Gynecology, Obstetrics, Hospitalist, Education, Patient care, Family Planning.

### List of Abbreviations

OB/GYN: Obstetrician/Gynecologist, PGY: Postgraduate Year, CTE: Clinical Tutor Evaluation, HCAPS: Hospital Consumer Assessment of Healthcare Providers and Systems.

### Introduction

"Hospital medicine" was first coined and explored as a practice model in the 20th century [1]. This practice model provided inpatient care and focused on transitions of care both to and from the hospital setting. In addition to serving as physician provider extenders, hospitalists also interacted frequently with trainees, nursing staff, and other key members of the care team in their capacity as educators. This service model was adopted

by obstetrician/gynecologists "(OB/GYN)" as a response to the need for leadership on labor and delivery. The emphasis centers around patient safety and quality of care, and a secondary effect addresses the work life balance of obstetricians by containing work hours and decreasing liability. The Society of OB/GYN Hospitalists defines an "Obstetrician/Gynecologist hospitalist" as one who "has focused their professional practice on care of the hospitalized woman [2]." The scope of care includes obstetrical triage, deliveries, management of obstetrical emergencies, and consults for emergent and inpatient gynecologic conditions. Institutions vary on the degree to which hospitalists provide each of these services. Various practice models exist for the OB/GYN hospitalist but the overarching focus is primarily on ensuring quality and safety.

As this practice model grew, in 2014 there were estimated to be more than 1,700 OB/GYN hospitalists working at more than 243 hospitals in the United States; this represented approximately 10% of hospitals that offer obstetrical care [2]. The availability of full-time OB/GYN hospitalists will likely continue to increase with the preliminary positive outcomes these hospitalist programs have had on rates of labor induction, maternal length of stay, neonatal intensive care unit admissions, cesarean deliveries, and incidence of preterm birth [3-5].

There is limited published data regarding OB/GYN hospitalists and quality of care, and there is a greater paucity of data assessing the impact of this practice on house staff education and delivery of patient care. A majority of the studies that have investigated hospitalists' impact on resident education and training experience are from the disciplines of Internal Medicine and Pediatrics. Multiple studies have demonstrated that residents in these aforementioned programs find "hospitalists to be more successful than subspecialists at fostering resident independence, supporting decision making, teaching critical thinking and end parenthesis, and providing feedback [6,7]. The goal of this study was to assess whether or not the same held true for the hospitalist program in an academic OB/GYN residency training program. More specifically, this study was designed to investigate the impact of hospitalists on resident education and training experience in a series of quality parameters.

## Methods

The study was conducted over a 6-month period, from January 2016 through June 2016, on Labor and Delivery at the University of California, Irvine. All residents in the residency program were subjects of this study (N = 28). The Labor and Delivery day team is composed of an attending physician, 2 residents (postgraduate year [PGY] 2 and 4), and 1 intern (PGY-1). The Labor and Delivery night team is composed of an attending physician, 1 resident (postgraduate year [PGY] 3) and 1 intern (PGY-1). The resident teams work collectively to manage patient care, with consistent in-house supervision by the attending physician.

The attending physician remains in-house for the duration of a shift. Of the attending physicians in the call pool, the following

percentages estimate the composition of the provider groups: 15% Generalists, 15% Hospitalists, 40% Maternal-Fetal Medicine attendings and fellows, 15% Gynecology Oncology fellows, and 15% Family Planning attendings. All providers were Board Certified attendings or board eligible fellows in subspecialty training.

The study was descriptive, following an observation-based form of research. Data was collected using a self-administered Likert-based survey. The survey contained a total of 34 questions and took approximately 15 minutes to complete. The survey intended to assess parameters of resident education on Labor and Delivery while supervised by attendings from each of the Department's Divisions. It assessed the following metrics: quality of patient care (7 questions), teaching (9 questions), professional relationships (9 questions), and resident autonomy during their time on Labor and Delivery (9 questions). Respondents were asked to rate each attending group with respect to each of the metrics using a 5-point Likert scale. The 5-point Likert response scale varied from "strongly disagree" to "strongly agree" for each question. The last segment of the survey solicited participants to provide any additional written comments in a freehand format. The questionnaire was a modified form of the Clinical Tutor Evaluation [CTE] [8,9], a valid and reliable method of rating teaching effectiveness that provided the data for the present analysis.

All OB/GYN residents (N = 28) between January 2016 and June 2016 were eligible subjects for participation in the survey. The intern class members were eligible to participate in the study after each had successfully completed both their first day and nighttime rotations on Labor and Delivery. Residents of each year were administered surveys during scheduled breaks, at conferences, or during change of shift. Participation was voluntary and anonymous. The only response qualification was year in training. Completed surveys were collected in sealed envelopes so that anonymity could be preserved.

STATA MP 10 was used for data management and analysis. The Likert scale results were converted from a 5-point to a 3-point scale (disagree, neutral, agree) for data analysis. As a function of attending provider group, questions were analyzed individually using the Fisher Exact test. Questions were then grouped by quality metric and analyzed using the Student t-test. P-value <0.05 was considered to be statistically significant.

The study was reviewed by the Institutional Review Board at University of California Irvine and met criteria for non-human subjects research. Both the principle investigator and the project coordinator supervised data collection and conducted ongoing quality control of the study.

## Results

There was a 100% survey response rate among residents (N = 28); each resident completed all 34 survey questions. Three of the four quality metrics showed a statistically significant difference among the attending provider groups, with the exception of resident

autonomy ( $p < 0.88$ ). The quality metrics were consistently ranked higher among the Hospitalist and Family Planning provider groups: 'quality of patient care' with Hospitalists and Family Planning averaging  $20.5 \pm 0.94$  and  $20.5 \pm 0.95$  ( $p = 0.003$ ) respectively, 'teaching' with Hospitalists averaging  $26.6 \pm 0.89$  ( $p < 0.001$ ), and 'professional relationships' with Hospitalists and Family Planning averaging  $25.7 \pm 1.5$  and  $25.8 \pm 1.6$  ( $p < 0.001$ ) respectively. These results are displayed graphically in Figure 1. There was no inter-provider comparison in the primary analysis, the inference was made that the statistical significance difference is between the highest scoring provider groups and the lower scoring provider groups.

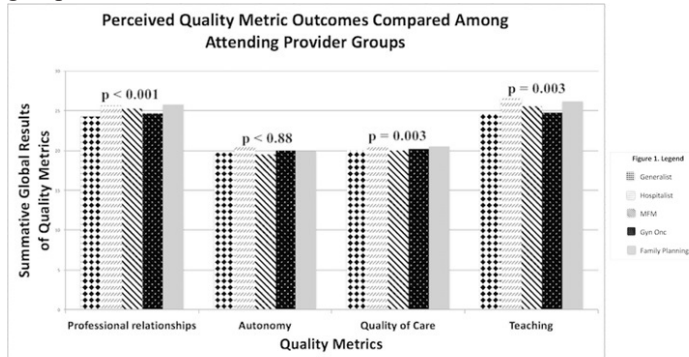


Figure 1: The graph displays the cumulative Likert scores for each provider group as it pertains to the respective Quality Metrics.

In a subsequent analysis, the Hospitalist group was compared independently to all other attending physicians groups. The Hospitalist group scored significantly higher for the quality metric of resident teaching with a mean score of  $26.6 \pm 0.89$  ( $p < 0.008$ ).

## Discussion

This study offers insight to the impact of OB/GYN hospitalists on house staff experiences and education in the setting of an evolving healthcare landscape. The major parameters, identified as quality metrics in this study, were successfully analyzed in their intended purpose to assess the educational and training experience on Labor and Delivery of obstetrics and gynecology residents at an academic institution. These quality metrics illustrated statistically significant differences among the various attending provider groups.

Based on our findings, residents perceive that OB/GYN hospitalists make a significant contribution to the quality of patient care, excel in professional relationships and teaching. The analysis identified a statistically significant difference between attending groups but it did not directly identify between provider groups and to the degree that they differed. However, given that the hospitalist provider group consistently ranked highly within each quality metric, we can deduce that this group was most likely a major contributor to the significant difference observed in our study results.

Given this noted trend in the hospitalist group, a subsequent examination of the data yielded a statistically significant difference between the hospitalist group and the other provider groups in the quality metric of teaching.

The results of this study are consistent with those in the medical

literature involving other specialties with hospitalist programs at academic centers. House staff from other specialties with exposure to hospitalist programs at their training institutions have found that hospitalist providers demonstrate a particular aptitude in resident education. Our study results support a similar aptitude in teaching by OB/GYN hospitalists.

The aforementioned trends in the literature are likely multifactorial and not yet entirely understood. Positive qualities and skills attributed to exemplary hospitalist educators from outside studies include: excellent clinical teachers, patient/work-centered teaching, development of case-based problem solving skills, encouraging autonomy, time management, knowledge acquisition, and role model identification [8]. The CTE questions in our survey were constructed in a way to equitably assess the above attributes through multiple survey questions.

In our study, the hospitalist group consistently scored highly on our quality metrics, which suggests that residents perceive hospitalists as skilled at maintaining a cohesive learning and working environment. One explanation for this may be that given their exclusive hospital-based clinical duties, hospitalists are able to focus on bedside resident teaching and exemplify leadership activity via team coordination of patient care on Labor and Delivery. Specifically, the teaching moments afforded during hands-on cases and obstetrical emergencies can be particularly effective when attended by hospitalists, who specialize in the care of emergent obstetrical conditions.

One of the cited concerns of having hospitalist programs in training programs is the potential decrease in resident autonomy [8]. This, however, was not corroborated in our study, where our results showed no statistical significance in perceived decreased resident autonomy among provider groups on Labor and Delivery. Furthermore, due to the nationally recognized downward trend in resident case volume for both obstetrical and gynecologic procedures, maximizing the inpatient teaching becomes of central importance to trainee educational experience and competence. This reinforces the importance of the hospitalist's role as an educator on Labor and Delivery.

We expect to see further implementation of OB/GYN hospitalist divisions in academic centers across the country, with the emphasis on patient safety. Our data strongly suggests house staff satisfaction with this practice model, and the literature supports an improvement in patient safety with notable positive outcomes with quality indicators including rates of labor induction, maternal length of stay, neonatal intensive care unit admissions, cesarean delivery rates, and incidence of preterm birth [3-5]. If this preliminary data continues to be steadfast, an ensuing consequence that resident learned behaviors through role modeling, mentorship, and inpatient training would continue to perpetuate the practices that have led to improvements in cost effective care, patient safety, and quality improvement.

There are a few limitations in our study. First, the generalizability

of our study's results is limited. The results are reflective of the residents' perceptions at our institution. This is compounded by the fact that different practice models of hospitalist programs exist throughout the country and therefore have the potential to cultivate a varied work environment. Second, the content of the survey we used as the measurement tool may not capture all the dimensions of teaching effectiveness [10]. The question remains whether the perceived effectiveness of teaching from house staff translates to more effective care. Potential indirect gauges of this could be HCAPS patient experience scores and resident in-service or board examination scores.

Furthermore, the clinical importance of CTE scores is not clearly understood. It is unclear if the differences in CTE scores across attending groups results in clinical differences in practice. Although the identified Hospitalist and Family Planning attendings received statistically higher ratings, the absolute differences between their scores and those of additional subspecialists in the study were small. We can note that the nonparametric distribution of the individual and composite CTE scores propagated this effect since most of the trainee's evaluations were skewed toward positive responses. Other studies that have utilized this measurement tool have experienced a similar distribution of ratings [11].

Finally, the surveys were distributed by a resident and an attending from the Hospitalist division at our institution. This could possibly influence the house staff survey responses, despite their guaranteed anonymity.

## Conclusion

This study demonstrates that residents perceive hospitalist attendings as highly effective teachers relative to other attendings who take call on Labor and Delivery. This is likely due to the increased time that hospitalists spend on Labor and Delivery, which translates to more time and opportunities with inpatient team members to intimately demonstrate characteristics that are highly valued by house staff [8]. We are hopeful that this study

will inspire both future research endeavors and the consideration of hospital medicine as a future career path by residents.

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