

# Educational Conference Scheduling, Patient Discharge Time, and Resident Satisfaction

STEFFANIE CAMPBELL, MD  
 MATTHEW CAMPBELL, MD  
 CHIRAYU SHAH, MD  
 ALEXANDER M. DJURICICH, MD

## Abstract

**Background** Limits on resident duty hours instituted in 2003 and 2011 have compressed medical resident daily workload. Despite this compression, residents must gain competence to practice medicine without supervision.

**Objective** We sought to determine whether moving the time our educational conference is scheduled affects the time when patient discharges are completed on an internal medicine teaching service.

**Methods** The study was conducted at a county hospital within a large internal medicine residency program. During the 4-month study period, the morning report conference for internal medicine residents was shifted from 8:30 AM to 2 PM. Patient discharge times, defined as the time the discharge order set was signed, were obtained for the service via the electronic health record.

The outcomes measured were patient discharge time variation and internal medicine resident preference for conference time.

**Results** Survey response rate was 82% (42 of 51). Of the residents who responded, 64% (27 of 42) preferred the 8:30 AM report time, and 74% (31 of 42) felt the 8:30 AM time was also better for education and timing of teaching rounds. There was no difference in discharge times for 2999 patients on the medicine teaching service, whether educational case conference morning report occurred at 8:30 AM or at 2 PM.

**Conclusions** Medical patient average discharge time was not influenced by time of educational conference. Factors other than the timing of educational conference appear to influence hospital discharge times on an inpatient internal medicine service.

## Introduction

Discharging patients from an inpatient service is a complicated process. Educating residents in the current frenetic inpatient environment, in which billing, patient satisfaction, and work hours are significant pressures, poses challenges.<sup>1-3</sup> Hospital leadership is attuned to optimizing throughput and is focused on identifying interventions that move up the time of patients' discharge. Delayed discharges may curtail hospital efforts at efficiency, quality of care, and patient satisfaction, and longer hospitalizations have

been associated with an increased cost and risk of iatrogenic morbidity and mortality.<sup>4-6</sup> At our institution, discharges occurred mainly in the mid- to late afternoon, instead of "before noon" as preferred by patients and administrators. The timing of educational conferences was implicated as a factor in the later discharge times, owing to the limited availability of residents during morning hours.

The purpose of this study was to assess for a correlation between medicine patient discharge time and educational conference time for residents. One prior study<sup>7</sup> mentioned morning conferences as a perceived impediment to discharge. Given the likely multiple influences on discharge time, we hypothesized that moving the educational conference to later in the day would not significantly impact patient discharge times.<sup>8-10</sup>

**Steffanie Campbell, MD**, is Assistant Professor, Baylor College of Medicine; **Matthew Campbell, MD**, is Medical Oncology Fellow, University of Texas MD Anderson Cancer Center; **Chirayu Shah, MD**, is Assistant Professor, Baylor College of Medicine; and **Alexander M. Djuricich, MD**, is Associate Professor, Indiana University School of Medicine.

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Corresponding author: Steffanie Campbell, MD, 6620 Main Street, No. 1125, Houston, TX 77030, 713.798.0207, steffanie.campbell@bcm.edu

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## Methods

### Setting

Wishard Hospital is a county hospital in Indianapolis with 90 internal medicine beds. The patient population consists mostly of uninsured patients with multiple medical comorbidities and complex social situations. During academic year 2010–2011, educational conferences for the

Conference Time	8:30 AM	2:00 PM	8:30 AM	2:00 PM	8:30 AM	
4-Week Rotation for Residents	Block 1		Block 2		Block 3	
4-Week Rotation for Interns	Block 1		Block 2		Block 3	

FIGURE 1 | **TIMELINE OF INTERVENTION**

Staggered approach to conference time switch (row 1) in relation to resident and intern rotation switch (rows 2 and 3, respectively). Interns rotate 2 days after residents.

internal medicine residency program were held for an hour at 8:30 AM and again at noon. All internal medicine teams, with the exception of the postcall team, were mandated to attend. Typical attendance by faculty was low.

### Population

Fifty-one residents were eligible for the study by participating in an internal medicine inpatient teaching rotation at Wishard Hospital during the study period.

### Intervention

The study was conducted August 23, 2010, through December 12, 2010. This time frame was selected in an attempt to eliminate bias due to potential inefficiency of beginning interns and possible disengagement of graduating residents. A rotation was defined as the 28 days each group was assigned to Wishard Hospital inpatient medicine teaching teams. During each rotation, the conference time alternated between 8:30 AM and 2 PM to avoid bias due to potential differences in resident efficiency (FIGURE 1).

Before initiating the intervention we sought feedback from the residents to determine the optimal afternoon time. Residency leaders chose 2 PM to allow time after the noon conference for completion of patient care tasks.

The Human Subjects Institutional Review Board approved all study procedures and granted a waiver of written consent.

### Data Collection and Analysis

Teaching service medicine patient discharge times were tracked during the study period. Discharge time was defined as the time the discharge order was signed in the electronic health record.

Resident attendance at morning report was tracked with sign-in sheets. Residents who were postcall or in clinic were omitted from the potential attendees. Residents attended clinic in either the morning or afternoon.

A brief 3-question electronic survey was developed to assess overall time preference as well as preference for rounding, education, and patient care tasks. At the end of the 4-month study period the survey was sent to the 51 participating residents.

The independent variable was educational conference time, and the dependent variable was medicine patient discharge time. The discharge times during each of the conference times were graphically compared. The discharge times were also analyzed by using a Student *t* test method with a significant *P* value defined as less than .05. Power analysis was done post hoc on discharge times only.

### Results

There were 2999 medicine patients identified during the study period. Of those identified, 1493 were discharged when the educational conference was held at 8:30 AM, and 1506 were discharged when the conference was scheduled for 2 PM. Regardless of the scheduling of the educational conference, peak discharge hours were between 4:30 PM and 5 PM. There was no significant difference in average discharge time ( $P = .31$ ; FIGURE 2). The number of patients discharged before noon in the 8:30 AM schedule model was 209 (14%), and the number discharged before noon in the 2 PM model was 184 (12.2%). There was no significant difference in the 2 means ( $P = .93$ ).

The electronic survey was completed by 42 of 51 residents (82%). In assessing overall preference, 64% (27

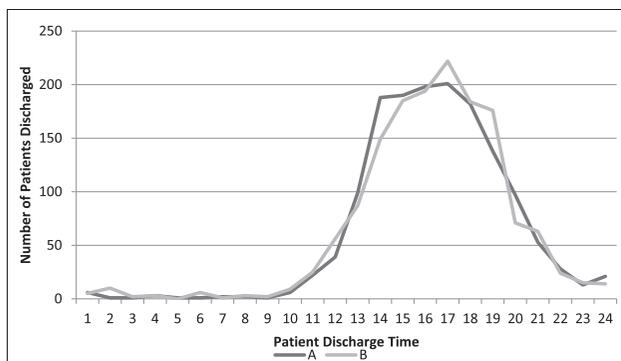


FIGURE 2 | NUMBER OF DISCHARGES FOR TIME OF DAY

The graph represents a comparison of the number of patients discharged during a specific time of day for either 8:30 AM conference (A) or 2 PM conference (B).

of 42) of respondents preferred 8:30 AM, compared to 36% (15 of 42) of residents who preferred 2 PM. When asked to indicate a conference time preference to optimize rounding and education, 74% (31 of 42) chose 8:30 AM. When asked to indicate a conference time preference to optimize patient care tasks, including discharges, 55% (23 of 42) also chose 8:30 AM.

Owing to variability in residents signing the attendance sheet, the record for resident attendance at the conferences was not accurate enough to determine whether there was a significant difference between the 2 conference times. On average, 50% (25.5 of 51) of the residents assigned to Wishard Hospital during the study period attended conference for both scheduling models.

## Discussion

The medicine service patient discharge times were not significantly influenced by the timing of the educational conference. There likely are other factors that influence discharge times. Previous studies<sup>7-9</sup> have reported that diagnostic testing and/or consultation delays, and lack of discharge planning, commonly affect the time of discharge.

Our survey of the residents showed a significant number preferred morning educational conferences. Whether this is due to tradition, less fatigue earlier in the day, or other factors such as limiting extended rounds, this finding should be examined in future studies. Previous studies<sup>11,12</sup> have indicated timing, motivation, and retention as important factors in the success of didactic sessions. In an era of limited teaching time with residents, it is imperative to ensure meaningful engagement in educational

time, emphasizing the importance of both quality and quantity.

Limitations of our study include that we did not control for, or investigate, the influence of other factors on discharge time. Our study also compared just 2 models for scheduling conference time. It is possible a different time in the morning or afternoon could allow for greater task completion, affecting patient discharge time. Finally, we did not track the timing of attending round completion, which also could have affected discharge timing and resident satisfaction. A power calculation for the survey data was not done, which limits the significance of the time preferences obtained.

## Conclusion

Our data suggest educational conference times are not a significant factor in enhancing efficiency through earlier patient discharge times. Given the limited educational contact time with residents, educational conferences should be maintained at a time when attendance and learning are maximized. Further research is needed to assess the factors influencing discharge time.

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