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The night float system: ensuring educational benefit

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Abstract

Background: The ACGME mandated a change in resident work hours effective July 2003. We postulated that taking a block of night call would provide an opportunity for residents to improve clinical decision-making without detracting from operative experience.
Methods: The educational benefit of the Night Float model was evaluated weekly by anonymous questionnaires that assessed resident conference attendance, operative experience, attending teaching interactions, and consultations for the previous seven days.
Results: Preliminary results demonstrated that a higher percentage of Night Float residents reported less exposure to each educational opportunity than their colleagues. These data prompted several remedial interventions that resulted in significant improvement. Compliance with the 80-hour workweek was equal for both groups.
Conclusions: The Night Float model has the advantage of fulfilling ACGME requirements, but it also has the potential to limit educational experience. Continued monitoring and faculty intervention are critical if we are to succeed in our goal to provide our residents with the best possible training.

Keywords: Educational benefit; Night Float system; Surgical residency

In 1999, the Institute of Medicine published a report citing resident fatigue as one cause of an increasing number of medical errors. This report, in addition to increasing public concern about patient safety, prompted a number of efforts to decrease resident work hours [1]. The Accreditation Council for Graduate Medical Education (ACGME) instituted resident work-hour restrictions effective July 1, 2003. ACGME mandates that residents work no more than hours 80 h/wk, have a maximum of every third night in-house call, be free of all clinical duties for at least 10 hours after a 24-hour shift, and be free of all clinical responsibilities for 1 out of every 7 days [2]. To achieve compliance with ACGME restrictions, maintain the essential components necessary for surgical education, and guarantee patient care, program directors have considered a number of innovative changes to the structure of surgical residency programs. In the Department of Surgery at the University of Virginia (UVA), we critically assessed resident activities and categorized them as either essential or nonessential. We realized that resident duties had to be refined to include only those deemed essential to the training of a highly competent surgeon. Many of the nonessential activities were either reassigned or eliminated. We also considered a number of call-schedule options—including an Apprenticeship Model, a Mastery Model, a Night Float model, and a Stretch Model—to aid in decreasing resident work hours [3]. After some discussion, we decided to institute the Night Float system for postgraduate year (PGY) 1 and 3 residents. It has been postulated that residents working a Night Float system experience less didactic teaching, less attending interaction, and an overall decreased quality of training compared with residents working a standard call schedule [3]. We hypothesized that a continuous block of time working as a night float would enhance the residents' diagnostic and decision-making skills without negatively impacting their overall education. We also anticipated this system would decrease cross-cover and provide continuity of patient care at night. The aim of this study was to compare by anonymous survey the educational experience of residents working a Night Float system with the educational experience of residents of similar level of training working during the day.

Methods

We currently have a Night Float system for PGY 1 and 3 residents. The Night Float block consists of duty peri-

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Table 1
Night Float Educational Justification Project (Please circle appropriate option)

1. Date		Male	Female		
2. Status	PGY1	PGY2	PGY3	PGY4	PGY5
3. Current rotation (please circle one)		Day	Night Float		
Please indicate for the last 7 days					
4. Number of conferences attended *including morning report* (circle one)					
a. 1–3	b. 4–6	c. 7–9	d. >9		
5. Number of OR cases performed/assisted (enter #) _____					
6. Attending teaching interactions of more than 5 minutes duration (circle one)					
a. 0	b. 1–5	c. 6–10	d. 11–15	e. >15	
7. Number of consults seen (circle one)					
a. 0	b. 1–5	c. 6–10	d. >10		
8. Time spent studying/reading (circle one)					
a. 1 hour	b. 2–5 hours	c. >5 hours			
9. This rotation provides a better overall educational experience than previous rotations. (check one)					
Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
○	○	○	○	○	
10. This rotation provides a better opportunity to improve my clinical decision-making and diagnostic skills compared with previous rotations. (check one)					
Disagree	Neutral	Agree	Strongly agree		
○	○	○	○		
11. This past week I worked *in the hospital* for more than 80 hours. (check one)					
Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
○	○	○	○	○	

ods extending from 6:00 PM through 7:15 AM each night beginning on Sunday evening and ending on Saturday morning. We chose operative experience, attending teaching interactions, number of consults, time spent on private study or reading, and perception of the overall clinical experience as educational end points to study the effect of the Night Float system on surgical education. Beginning with the start of the new resident year in mid-June 2003, all surgery preliminary and categorical residents were asked to complete an anonymous questionnaire each week during the teaching conference (Table 1). The survey was designed to obtain information on the number of conferences the residents attended, the number of operating room cases performed, the number of consults seen, and the amount of time spent studying. The residents were also asked to compare their perception of the overall educational benefit and opportunity to improve clinical decision making in their current rotation to that of previous rotations. Finally, the residents were asked to report if they had been in the hospital >80 hours in the past week. We also used an online duty tracking system to monitor duty hours in greater detail. The proposal for this project was submitted to the Institutional Review Board. A letter of exemption was obtained because participation in the study was voluntary, and data were reported in aggregate form only without specific identifiers (UVA No. 2003-0254-00).

Results

A total of 32 residents were surveyed for a total of 15 consecutive weeks. The overall response rate was 96%, but only data on those PGY in which we used the night float system were reported. Data were collected weekly and analyzed monthly. Statistical analysis was not performed because of the number of potentially confounding variables. The results are summarized in Figs. 1 through 4. When the preliminary results were evaluated at the end of July, it was

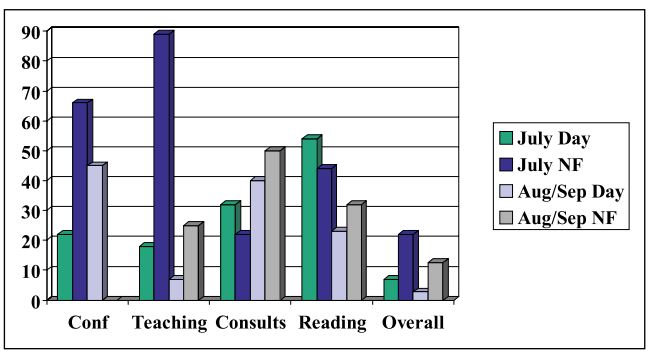

Fig. 1. This graph shows the percentage of residents with the least educational experience for each educational parameter. "Least" was defined as the percentage of residents in the lowest survey category for each parameter. (Total number of responses was equal to 16 for the Night Float residents and 72 for those on standard rotations).