

# Fatigue and Perioperative Nurse Charting Errors: The Impact of a Reduced Call Schedule

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## INTRODUCTION

The operating room is a dynamic, high-pressured, environment with a variety of practitioners working together to ensure a successful outcome for the patient. This complex system relies on the competent performance of all surgical team members.

Providing care for patients requiring urgent or emergent care after regular hours of operation is an integral part of perioperative nursing.

Responsibilities referred to as "call" are assignments that require staff members to be available for unplanned urgent or emergent procedures and/or to provide care for patients whose procedures do not occur during routine OR hours (1).

Often, on call nurses must deal with interrupted sleep or no sleep while providing safe patient care. Scheduled call rotations and assigned 12-hour work shifts can leave staff fatigued and prone to making errors, which can affect patient outcomes.

The effects of fatigue due to long tours, working on call and insufficient rest periods are often overlooked when reviewing charting errors. Literature suggests the need to investigate the consequences of allowing healthcare personnel to continue working fatigued.

## RESEARCH STUDY DESIGN

### PURPOSE

This study was designed to examine fatigue and surgical charting errors among 8-hour, 12-hour and on-call nurses before and after a reduced call schedule was implemented to determine if a correlative relationship existed.

### METHODOLOGY

- 5277 surgical charts were retrospectively reviewed
- Data was collected in two phases:
  - Phase I:** prior to implementation of reduced call
  - Phase II:** post-reduced call implementation
- Charting errors were evaluated by:
  - Nursing Tour:** 8-hour, 12-hour, and on-call
  - Error type:** pain scale, counts, wound class, procedure, and Time Out
  - Procedure category:** orthopaedic, general, gynecology, urology, neurology, eye, and vascular

## DEFINITIONS

**FATIGUE:** the inability or unwillingness to continue effective performance of a physical or mental task (2)

**REDUCED CALL-** no tour on task to exceed 12 hours

**REDUCED CALL SCHEDULE-**

- Weekday Call:** Monday to Thursday, 1900-0700
  - 1 Surgical Tech in house Monday to Friday, 2300-0700 (hourly pay)
  - 1 Surgical Tech on call 1900-0700 (36 hrs pay)
  - 1 RN on call 1900-0700 (36 hrs pay)
- Weekend Call:** Friday to Sunday
  - 1st call: 0700-1900 / 3 staff members
  - Call tour: 1900-0700
    - 1 Surgical Tech in house Sat & Sun 1900-0700 (36 hrs pay)
    - 1 Surgical Tech on call 1900-0700 (36 hrs pay)
    - 1 RN on call 1900-0700 (36 hrs pay)

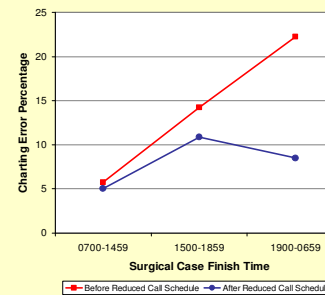
## CHARTING ERROR COMPARISON BEFORE & AFTER IMPLEMENTING A REDUCED CALL SCHEDULE

	Before Reduced Call Schedule	After Reduced Call Schedule	$\chi^2$ value	P value
Total Cases: N=	2642	2635		
Case Time: # errors (n)			16.662	0.0002*
0700 - 1459	119 (2072)	106 (2108)		
1500 - 1859	53 (372)	37 (339)		
1900 - 0659	44 (198)	16 (188)		
Error Type: # errors			13.122	0.0112*
Pain Scale	112	92		
Counts	71	40		
Wound Class	12	14		
Procedure	12	6		
Time Out	9	7		
Procedure: # errors			11.045	0.0869
Orthopaedic	71	58		
General	87	58		
Gynecology	24	19		
Urology	11	6		
Neurology	6	7		
Eye	7	6		
Vascular	10	6		

\*Significant at CI=95%

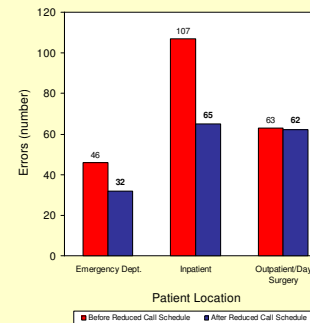
- Data analysis revealed a significant reduction ( $P < 0.01$ ) in surgical charting errors in Phase II: post-reduced call schedule implementation
- As a group, charting error types were found to be significantly diminished in Phase II ( $P = 0.01$ )
- Fewer errors occurred in Phase II for all procedures except neurology

## CHARTING ERROR RATE BY TOUR



- Similar percentages of charting errors were found for the 8-hour tour before and after reduced call
- A substantial reduction in charting errors was evident for both the 12-hour (23%) and on-call (62%) tours in Phase II

## QUANTITY OF ERRORS BY PATIENT LOCATION



- A considerable reduction in charting errors occurred for inpatients (61%) and ED patients (70%) arriving for surgery after implementation of the reduced call schedule
- The number of outpatient charting errors was nearly identical in phase I (63) and phase II (62)

## CHARTING ERRORS BY DAY PROCEDURE PERFORMED

Day of the Week	Before Reduced Call Schedule Errors	After Reduced Call Schedule Errors	% Error Reduction
Monday	35	31	11.43
Tuesday	27	19	29.63
Wednesday	30	21	30.00
Thursday	35	33	5.71
Friday	51	37	27.45
Saturday	21	9	57.14
Sunday	17	9	47.06
<b>Total</b>	<b>216</b>	<b>159</b>	<b>26.39</b>

- Charting errors for weekend cases showed the greatest improvement after establishing reduced call in the surgical suite

## CONCLUSIONS & IMPLICATIONS

### CONCLUSIONS

- Implementation of the reduced call schedule diminished all types of surgical charting errors by perioperative RNs, in particular those most affected by the reduced call schedule: 12-hour tour, on-call tour and weekend on-call teams.
- The greatest improvement in documentation for surgical procedures occurred for patients who entered the OR from inpatient areas and the ED. These are the patient populations most likely to require urgent or emergent surgical care.

### IMPLICATIONS

- This research revealed the need for perioperative RN education to reinforce the importance of accurate patient documentation. In-service for surgical suite RNs was conducted in 2007.
- These data support the Institute of Medicine's call for regulatory bodies to prohibit RNs from working more than 12 hours in a 24-hour period or 60 hours per week, which AORN has endorsed (1).

## REFERENCES

- Safe on call practices in perioperative practice settings. In: *Standards, Recommended Practices, and Guidelines*. Denver, CO: AORN, Inc; 2006:317.
- Patient Safety: Fatigue, stress, and work schedule effects. American Association of Nurse Anesthetists. [http://www.aana.com/resources.aspx?ucNavMenu\\_TSMMenuTargetID=51&ucNavMenu](http://www.aana.com/resources.aspx?ucNavMenu_TSMMenuTargetID=51&ucNavMenu). Accessed June 4, 2007.

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